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**Coping with Zimbabwe's
economic crisis:
Small-scale farmers and livelihoods
under stress**

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Executive Summary

This working paper is based upon a small fieldwork exercise that has served to continue a study that extended over the previous 28 years. It is a small exercise in a vacuum of sound empirical fieldwork and cannot pretend to be exhaustive. We call for a comprehensive examination of the consequences of the stress to which rural households in Zimbabwe have been subjected over the past decade is much-needed.

Data collected from 18 sites across three provinces reveal an overall decline in the size of rural households, especially in resettlement areas established in the early 1980s, to which people had once been attracted because of their economic success. Now they are seeking livelihoods elsewhere, and more than half of all household members have migrated since 1999.

Earning a livelihood from farming has become very much more difficult during the past 10 years. Inputs are a major problem, and cropped areas—especially cash crops—have been reduced across our sample even though cropping diversity has increased. It is only contract farming and donor support in favoured areas that have prevented the small-scale farming landscape from becoming a wasteland. Mean rates of fertilizer application have dropped to insignificant levels.

Households have sought to modify their livelihood portfolios by migrating, by pursuing a wide range of non-farm activities and using social networks and transfers. However, there are indications that these alternatives may not be as supportive now as they were in the past.

Among the most serious outcomes of the economic turmoil of the past decade has been the depletion of families' livestock assets, even though some have managed to increase their herds. The reduction in herds has not only weakened the overall economic resource base but it also has reduced the ability to manage the land resource through well-timed tillage.

The work reported here identifies several areas where further work urgently needs to be done.

The most important of these is the need for a detailed study of contract farming. The last such study in Zimbabwe was done more than 20 years ago, when contract farming existed on nothing like its contemporary scale. Given the growing reliance of small-scale farmers on contract farming to provide inputs, together with their dissatisfaction at the way current contracts are operating, a serious impartial re-examination is called for.

There is also a need to understand better what happens to the household's asset base that supports agricultural activities when household members leave to join fast track or to seek other opportunities. This is particularly true in the original resettlement areas where so many families appear to be at the same stage in the household cycle, with many younger family members leaving home for multiple reasons.

1. Background and aim of the study

Over the past decade a political and economic catastrophe has unfolded in Zimbabwe. The media regularly report on the ongoing economic and political crisis [an oxymoron], highlighting the challenges of making an inclusive government work, as well as the impact of inflation, food shortages and epidemics afflicting the country. Yet, such general stories only allow us to guess what is happening on the ground and tell us little about the challenges, difficulties and opportunities ordinary Zimbabweans are facing. At present, there is virtually no primary fieldwork-based research going on that can answer many of the pressing questions about trajectories of household and individual well-being in the rural areas. This research helps to fill this gap by conducting a study into the impact of the crisis in rural farming areas within the framework of a larger study specifically focused on processes of impoverishment and accumulation. The study is based on case-study fieldwork that links to previous survey data collection for the Zimbabwe Rural Household Dynamics Study (ZRHDS).¹

The aim of the study is to generate insights on the current situation in small-scale farming areas in rural Zimbabwe and to understand the effects of political and economic changes that have occurred over the past decade. The research centres on how farmers have responded, and are responding, to changes in their socio-economic environment, particularly the collapse of functional markets. The study addresses processes of market disintegration and development of parallel markets in times of economic crisis. It is known that farming households differ in their capacity/ability to adjust to adverse circumstances. Some households will be in a position to seize the opportunities provided by distorted markets, while others will retreat or be forced to withdraw from the market. These forces result in different trajectories of accumulation and impoverishment, with consequences for households' strategies for confronting risk at the individual level. Such differences are also of critical importance in shaping donors' responses to the current phase of the Zimbabwean crisis.

Important sub-questions are: (i) how have macro-economic developments and disintegration of markets in particular affected socio-economic life in rural farming areas; (ii) how have these impacts affected household portfolios for earning a livelihood; (iii) how do farming families deal with idiosyncratic crisis situations; and (iv) what determines success or failure for rural households in such settings? These questions have been addressed by revisiting farmers who were included in the ZRHDS panel data-set covering the period 1983-2001.²

The remainder of this paper presents some preliminary answers to these questions. In the next section we describe the research location and data collection. Section three provides an overview of livelihood portfolios of the farmers at the end of the 1990s. Section four discusses the influence of macro-economic changes over the past decade on agricultural production in the study areas. In section five we review the opportunities and constraints for alternative livelihood activities. Section six discusses the implications of these developments for household investment and wealth. Section seven concludes.

¹ The ZHRDS, for which fieldwork began in 1983, is the longest continuous panel study of households ever undertaken in Africa. The full panel is some 500 households resettled in the early 1980s and 150 households from neighbouring communal areas.

² The data collection was funded by The Royal Netherlands Embassy in Harare and The African Studies Centre in Leiden.

2. Data and research locations

The research was conducted in 18 primary sites across three locations: one resettlement area (RA) and one neighbouring communal area (CA) in each of three provinces. A survey questionnaire was enumerated to 193 households, 143 in resettlement areas and 50 in communal areas. This household level information was complemented with community level data collected separately from the household questionnaire.

The three resettlement areas were all resettled in 1980, 1981 and 1982, and the three communal areas were chosen for study because they were major sources of the small-scale farmers who elected to be resettled in the early 1980s. All the sites had previously been surveyed numerous times up until 2001, and some had also been surveyed during 2007-09. In most cases, data are available on the households extending as far back in time as the early 1980s, but for the CA households the retrospective data begin only in 1997.

The three locations reflect considerably different agro-ecological and economic potential. The six Mashonaland Central sites are all in Natural Region (NR) 2, with comparatively high rainfall in a normal year and with an inherently greater potential for a wide range of cropping. There are pronounced local differences in soils however that influence the crops that can be best grown. Bushu, the CA, has, as would be expected, soils of lower potential than neighbouring Mupfurdzi RA, situated on former commercial farmland. Cotton has been the primary cash crop in the area for decades, but tobacco is increasingly being grown by farmers in Mupfurdzi. With high rainfall, malaria is endemic, along with many other diseases and parasites associated with water vectors. Both adult and child nutrition indicators are typically poor. The nearest towns are Shamva, Bindura and Mt. Darwin, and travel connections are relatively easy. The closure of Madziwa Mine north of Shamva in recent years has had adverse effects through a reduction in economic opportunities.

The five Mashonaland East sites are all on the boundary of NR3 and possess more restricted agricultural potential than the sites in NR2. The soils are almost universally sandy and the area is ideal for tobacco, but tobacco-growing—despite encouragement by extension staff—has been undertaken to only a limited extent. The area is cool and malaria-free. Maize remains the major cash crop, and there is considerable market gardening of products that can be sold in the nearby township of Hwedza and several smaller service centres. Transportation is reasonably accessible.

The seven Manicaland sites all lie in areas of relatively low potential in NR4. The low average rainfall means the area is marginally suited to cropping and better endowed for livestock keeping. In addition, the predominantly light, sandy soils favour drought-tolerant crops. There are however pockets of soil where there is a perched water table and where rice can be grown. Child health and nutritional status have consistently been far better in this area than in either of the other two. These sites are very remote, with extremely poor roads, and transportation is a problem. The recent discovery of diamonds in the area has provided a stimulus to a range of non-agricultural activities and has witnessed a boom in small-scale retailing.

3. Livelihoods in the 1990s

Before turning to the question of how rural livelihoods have changed over the past decade, we first describe the situation of farmers in the research areas at the end of the 1990s. Compared to similar households in communal areas,³ real household income of resettled farmers was significantly higher in 1999: Z\$9,255 for resettled households, compared to Z\$5,625 for communal households. The sources of income also differed considerably between the two areas (Table 1). For resettled households, agriculture was by far the dominant source of income. These households also earned some income from off-farm businesses and livestock growth and reported small contributions from remittances and female income. Although agriculture also constituted a primary source of income to communal households, it contributed only 35 percent to total income. Off-farm business revenues, remittances and off-farm income contributed more to total income compared to the resettled households. Livestock produce, livestock growth and female income are proportionally comparable for resettled and communal households. In this respect, communal households are very comparable to other rural households in Africa that earn on average 30-50 percent of total income outside the agricultural sector (Reardon 1997).

Table 1.—Livelihood portfolios of resettled and communal households*

	Resettled households	Similar communal households
Household income (Z\$ 1995)	9255	5625
	(percentage)	
Of which:		
Crop income	65	35
Off-farm business revenues	11	20
Livestock produce	1	1
Livestock growth	10	9
Remittances	5	16
Female income	6	4
Off-farm income	2	15

*Based on ZRHDS data and adjusted from Deininger *et al* (2004).

In non-drought years, resettled households produced maize in excess of subsistence needs and most farmers produced cash crops, such as cotton and tobacco (Dekker 2004a). Maize production, even in subsistence farming, was based on a so-called high-input farming regime; 70-90 percent of farmers used hybrid maize in the 1999-2000 cropping season with the highest adoption rate in Mupfurudzi (90 percent), followed by 80 percent of the farmers in Mutanda and 70 percent in Sengezi (Bourdillon *et al.* 2003). Thus most farmers participated in input (seeds, chemicals and fertilizer) and output (crops, cattle) markets, while the labour market, especially on neighbouring commercial farms, offered opportunities to generate income for the poorer households or in times of cash needs to pay school fees, medical bills or funeral costs.

Compared to communal farmers that applied for resettlement but were rejected, resettled households perform better in agriculture. They have higher maize yields and higher crop incomes per unit of land, have larger herds, higher expenditures and higher valued capital stock. Although the differences in crop income, the

³ Similar households in communal areas are households in communal areas that applied for resettlement in the early 1980s but were not selected into the programme.

value of livestock and the value of capital stock persist on a per-capita basis, the differences in per-capita expenditures are lower than expected (Deininger *et al.* 2004) because of the larger household sizes in resettlement areas.

Table 2.—Mean household size in 2000*

	Resettlement areas	Adjacent communal areas
	2000	2000
All areas	9.2	6.1
Mupfurudzi	10.9	6.5
Sengezi	7.2	5.2
Mutanda	9.6	6.7

* All differences statistically significant (0.000).
Source: ZRHDS data.

Table 2 shows significant differences in household size between resettled and communal areas that illustrate and impact on livelihood portfolios. This difference is most pronounced in Mupfurudzi, where households on average are 1.7 times the size of the households that live in the adjacent communal areas. Such differences in household size between resettlement and communal households have been found more widely in Zimbabwe (Harts-Broekhuis and Huisman 2001). In the communities studied by the ZRHDS, the incidence of nuclear monogamous households is lower and vertically extended households are more common in resettlement areas compared to communal areas. The fact that more sons stayed on their parents' plot when they were married had to do with the land tenure rules in the resettlement areas. Although each resettled household has more land available compared to communal households, the land (both the arable land and the residential plot) may not legally be subdivided among sons, nor are sons, or others for that matter, allowed to clear land for cultivation and set up their own residential plot (at least until the early 2000s).

In communal areas, a different route is followed by married sons who want to establish their own households. Although the area of land that is available for expansionary purposes is usually rather small, it is the responsibility of the chief, the sub-chief and the village head to allocate land for new families. In practice, in resettlement areas many parents did/do allow their son(s) to use a portion of their land. This is *de facto* subdivision, as the son(s) and his wife (or wives) will cultivate the portion of land by themselves and have full responsibility for investment in inputs, and full ownership of the harvest they obtain. The crops are stored separately from the crops of the parents and they have their own kitchen to prepare and consume food.⁴ Alternatively, the son and his wife assist the parents in cultivation and share part of the harvest to be able to meet their food consumption needs.⁵

Many married sons who remain with their parents hope to inherit the plot when the parents die even though this event might be in the far future. Such endured vertical extension is still a better option than trying to find land in the communal areas or to find a job in town, the option many communal area sons pursue. It might be more difficult for sons of the resettled households to find land in a

⁴ The ZRHDS data show that 20 percent of all resettled households had separate food stores on their residential stands.

⁵ Elsewhere, it is reported that married sons of resettled households illegally occupy land in the resettlement areas (Harts-Broekhuis and Huisman 2001), while squatting is more generally reported as a result from of scarcity (Moyo 1998). In our research areas, squatting is largely restricted to Mutanda, although we have received an occasional report of married sons who have settled in the "bush" in Mupfurudzi and Sengezi as well.

communal area as their father has moved away, although there are possible ways of doing so.⁶

4. Macro-economic changes and agricultural production

Although there is very strong evidence that Zimbabwe's economic decline began in the early 1990s,⁷ during the past decade simultaneous economic and political crises have mushroomed in Zimbabwe, resulting in double-digit negative growth rates, sky-rocketing inflation, decline in the rule of law and a disintegration of markets, notably rural input, output and labour markets. Although macro-economic indicators are now showing some signs of improvement, with an estimated positive growth rate as compared to the contraction of the economy reported until 2009, these macro-economic developments suggest profound changes to the socio-economic environment in which rural Zimbabweans are managing their everyday lives. In this section we discuss how these changes in the (national) economic environment have affected the small holder farmers in our study.

The multiple dimensions of the economic collapse that Zimbabwe experienced in the decade following 2000 had profound effects on the smallholder farmers studied in the ZRHDS schemes. Most notably, the production and distribution of inputs were hampered and hyperinflation, combined with delayed payments and shortages of money, made the income from agricultural production worthless, especially during 2007 and 2008. Although most input-providing companies are still active in the study areas, and some new ones have arrived, they have not been able to guarantee a sufficient supply of inputs to maintain production levels.

These shortfalls in supply of inputs are reflected clearly in the constraints identified by farmers to their agricultural operations during the 2009/10 season. As shown in Table 3, although a quarter of the constraints mentioned by farmers related to rainfall alone, when combined the various constraints relating to inputs constitute almost two-thirds of the total number mentioned.

Across the past decade, the number of farmers using modern inputs (hybrid seeds, fertilizer and pesticides) has decreased, as have the quantities applied to the crops, as is illustrated by Figure 1. Figure 1 shows for the three resettlement areas we examine here the average fertilizer application rate per hectare planted for selected seasons from 1985/86 to 2009/10. The earliest annual average application rate was 285kg/ha, whereas the most recent was only 16.5kg/ha—and this change took place at the same time as resettled farmers were generally expanding their cropped area and increasing the areas planted to cash crops.⁸

⁶ Since those resettled in the early 1980s could not take their extended family with them, the grandparents often remained behind. Numerous married sons from RAs have now returned to the CAs from which their fathers came in order to inherit the land occupied by their grandparents.

⁷ See Kinsey (2010b) for a treatment of the long duration of Zimbabwe's economic 'crisis'.

⁸ While a comparable time series for communal areas is not available, the mean application rates across the CAs in 2008/09 and 2009/10 were 7.9kg/ha and 12.8kg/ha respectively.

Table 3.—Main constraints to cropping operations faced during the 2009/10 season*

Constraint identified	Proportion of the 297 constraints mentioned (percent)
Rainfall unreliable, erratic, low, late	25.6
Lack of seasonal capital to buy farming inputs	20.5
Lack of cattle/draught power	17.2
Inputs: difficult to obtain/late arrival/poor access/scarcity/not available	10.4
Inputs: Not enough/none	7.7
Labour shortages: alone/small family/lack of manpower	5.4
Personal circumstances: disabled/ill/aged/can't manage farming operations/blindness	3.7
Crops destroyed/damaged by cattle	2.0
Lack of working capital (to buy livestock drugs/hire labour/buy & repair equipment)	1.7
Security of property, loss of land	1.0
Poor prices/markets	0.7
Crops attacked by pests	1.3
No/inadequate farming implements	1.3
Other (poor soil, no extension service)	0.7
No constraints	0.7
Total	100.0

*Although there may be overlap between some constraints, they have been separated here according to the wording used and emphasis given by the farmers.

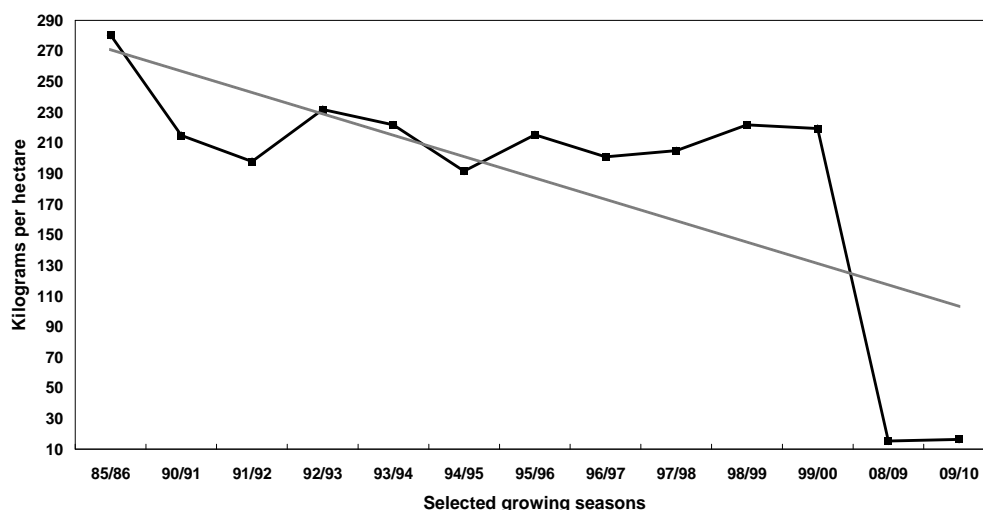


Figure 1.—Annual average fertilizer application rates per hectare planted for resettled farmers, selected seasons from 1985/86 to 2009/10

This decline in the availability of fertilizer has resulted in changes in cropping patterns as is evidenced in Table 4. Here, we look specifically at the total acreage planted, the acreage under cash crops (tobacco and cotton), the acreage under food crops and the diversity of crops grown by farmers. For the full sample, we find a slight decrease in the acreage under cultivation, a strong and significant decrease in the acreage under cash crops, a marginal increase in the acreage under food crops and a significant increase in the diversity of crops grown (Table 4).

Table 4.—Changes in cropping patterns, 2000-2010

	2000	2010	Sig. diff in mean
Full sample			
Total acreage ^a	5.90	5.51	0.107
Cash crops	1.24	0.79	0.010
Food crops	4.67	4.72	0.567
Crop diversity ^b	3.32	3.93	0.000
RA			
Total acreage	6.66	6.16	0.092
Cash crops	1.54	1.01	0.016
Food crops	5.10	5.13	0.468
Crop diversity	3.44	3.97	0.001
CA			
Total acreage	3.79	3.66	0.368
Cash crops	0.36	0.14	0.071
Food crops	3.43	3.53	0.400
Crop diversity	2.98	3.84	0.002
NR2			
Total acreage	5.51	5.95	0.807
Cash crops	2.70	1.14	0.000
Food crops	2.81	4.82	0.000
Crop diversity	3.07	4.10	0.000
NR3			
Total acreage	5.07	4.08	0.027
Cash crops	0.21	0.43	0.136
Food crops	4.86	3.65	0.004
Crop diversity	3.33	2.77	0.011
NR4			
Total acreage	7.27	6.44	0.072
Cash crops	0.50	0.73	0.143
Food crops	6.77	5.71	0.029
Crop diversity	3.62	4.95	0.000

Source: ZRHDS data

^a Because most of the farmers in the ZRHDS study are of a generation that grew up without the metric system, we use acres here and elsewhere, converting to hectares when it seems helpful to the discussion.

^b Crop diversity is the mean number of crops grown per household.

When we look in more detail at the specific crops (Table 5), there is a marked reduction in the acreage planted to maize and cotton, while in contrast tobacco and rapoko acreage has increased. These patterns are very similar for both communal areas and resettlement areas, but vary across natural regions. In NR2, where there was always a strong cash crop orientation, we find a marginal increase in the acreage under cultivation, a strong reduction in acreage under cash crops (acreage more than halved), a significant increase in acreage under food crops and greater diversity of crops grown.

Farmers responded to the lack of inputs by reducing their acreage under maize, cotton⁹ and tobacco, and by planting other crops that require less or no inputs. For groundnuts, nyemba, nyimo, sunflower and potatoes, seeds are often obtained informally through local social networks (e.g. from the granary of the neighbour) and the crops are normally planted with no or very little fertilizers.

⁹ The average acreage under cotton decreased from 2.17 acres per household in 2000 to 0.30 acres in 2010.

In NR3 we find a very different pattern: a significant reduction in the acreage planted, a marginal increase in cash crop production (especially farmers taking up tobacco farming), a significant decrease in acreage under food crops (especially maize) and a decrease in crop diversity. Interestingly, in the late 1990s, this was the area with the lowest adoption of new hybrid varieties, and now a considerable proportion of the farmers in this region (some 40 per cent in 2010) have taken up planting small grains (rapoko, millet and sorghum). In NR4, the acreage under cultivation also drops, especially the acreage under food crops, while the diversity of crops grown increases. Here, too, the percentage of farmers growing small grains grows: from 60 percent in 2000 to more than 75 per cent in 2010.

Table 5.—Changes in acreage under cultivation (1999/00-2009/2010),
disaggregated by crop

Crop	1999/00	2009/2010	Significance level
	<i>(acreage)</i>		
Maize	3.65	2.95	0.000
Tobacco	0.14	0.27	0.070
Cotton	0.90	0.25	0.000
Groundnuts	0.87	0.75	0.080
Small grains*	0.49	0.50	0.460
Rapoko	0.08	0.15	0.015
Sorghum	0.38	0.14	0.000
Millet	0.03	0.21	0.000
Nyimo	0.31	0.21	0.009
All beans	0.13	0.18	0.090
Sunflower	0.11	0.28	0.001
Potatoes	0.004	0.10	0.000
Rice	0.027	0.008	0.024
Other	0	0.01	0.030

* Small grains include rapoko, sorghum and millet combined.

Shortening our perspective and examining changes only over the past two seasons both strengthens the observations above and uncovers some small signs of positive developments. As already noted, the “traditional” suppliers of agricultural inputs failed completely to meet demand since they were unable to cope with hyperinflation and since the supply chain had been broken by the consequences of economy-wide failures. Three factors have helped to mitigate these adverse circumstances. First is growing stability and the slow improvement in the economic climate. Second, there has been a gradual expansion of contract farming, with companies providing inputs for cash cropping under the proviso that the harvest must be marketed through them. And third, the donor community—bilateral and UN agencies as well as NGOs—stepped in and began to import and distribute inputs, primarily seed and fertilizers.

The extent of this aid in-kind can be judged by the fact that well over half the households included in this study received at least some amount of free seed and/or fertilizer during the 2009/10 season.¹⁰ As shown in Table 6, the sources of this aid were diverse, even though in many cases farmers lacked a clear understanding of who was providing it and failed to distinguish between the source of the inputs and those who distributed them.

¹⁰ Six percent of the beneficiaries of free inputs received seed only.

Table 6.—Identified providers of free inputs, 2009/10 season

Provider	Percent of providers
Africare	1.01
Arex officers	2.02
Catholic Relief Services	17.17
DAPP (an NGO)	21.21
Don't know	2.02
Dhiga Ugute (CADEC/SADC)*	4.04
FAO	42.42
Government	5.05
Named well-wishers	2.02
PLAN International	1.01
Red Cross	2.02
Total	100.00

*The source of the *Dhiga Ugute* (literally 'Dig to fill your stomach') inputs could not be ascertained, but it certainly was not SADC.

The inputs provided were in all cases intended to support maize cultivation, and the amounts typically made available were sufficient to permit beneficiaries to plant approximately one acre of maize. At even moderate standards of cultivation, the output from one acre should have been over a tonne, enough to feed a family of five for a year.

While most inputs were delivered early enough to allow planting to be done in time to take best advantage of the rains (see Table 7), this was not always the case, and well over a tenth of beneficiaries obtained their inputs after the optimal planting time had already passed.

It is also significant that all of the very late-supplied inputs—those delivered in January and February—came from government sources, a clear indication of government's inability to service the agricultural sector.

Table 7.—Month of receipt of aid-provided farm inputs, 2009/10 season

Year and month	Input provided	
	Seed	Fertilizer
	<i>(percent of deliveries)</i>	
2009		
October	30.53	30.00
November	56.84	57.78
December	9.47	8.89
2010		
January	2.11	2.22
February	1.05	1.11
	100.00	100.00

Nor, at least among the households surveyed, were free inputs distributed in a completely equitable fashion. While each individual donor undoubtedly had its own criteria to determine eligibility for receipt of inputs, there are significant differences in the geographical distribution (Table 8). Most striking is the concentration of inputs according to agro-ecological potential, a finding that perhaps makes some sense when all the inputs provided are in support of maize cultivation. There is also however a striking bias in favour of communal areas.

Table 8.—Percentage of households surveyed which received free inputs, 2009/10 season, by area

Area	Households receiving inputs (percent)
By Natural Region	
2	93.2
3	34.4
4	16.9
Total	51.3
Significance level	0.000
By tenure regime	
Communal areas	70.0
Resettled areas	44.8
Total	51.3
Significance level	0.000
By specific locality	
Communal area	
Bushu	82.4
Chigwedere	100.0
Marange	25.0
Resettled areas	
Mupfurudzi	96.4
Sengezi	9.1
Mutanda	14.0
Total	51.3
Significance level	0.002

At the level of individual locality, the differences are even more pronounced although slightly less significant. All the respondents in one communal area—Chigwedere, for example—received inputs, while less than ten percent in the neighbouring resettlement area—Sengezi—did. Such differences are difficult to explain.

Some of the results above can also be explained by the fact that NGOs have particular areas of operation. For example, in the areas surveyed, Catholic Relief Services was operating solely in communal areas, while DAPP was operating solely in a single resettlement area. Government also operated solely in resettlement areas. FAO, in contrast, was active in roughly proportionate terms across the communal and resettlement areas covered.

Nevertheless, across the sample as a whole, there are indications that the provision of inputs through aid, together with the gradually improving economic climate, have led to improvements over the dismal performance in the decade following 2000. Table 9 compares cropping patterns and levels of fertilizer utilization across the two most recent seasons—2008/09 and 2009/10. The focus here is on plots planted to specific crops rather than on the holding as a whole, and the reason for this approach is that a single land holding often has multiple growers of any given crop. Thus, for example, one holding in a resettlement area may have four different plots of maize, each cultivated by different individuals according to different standards.¹¹

¹¹ Over two percent of growers over all areas do not reside on the holding where they are growing their crops.

Among the more general conclusions that may be drawn from Table 9 is that average maize plot areas and fertilizer application rates changed very little between the two years, and much the same is true for groundnuts, although the proportion of the total holding area planted to maize declined. The most striking change is the more than doubling in the number of tobacco growers and a strong increase in the numbers of tobacco growers applying fertilizer and in fertilizer application rates.¹² Also striking is the expansion in the proportion of holdings planted to cotton and the mean area per grower, however—despite almost no change in the proportion of growers applying fertilizer—there is a remarkable drop in the rate of application per hectare.¹³

Nevertheless, as noted above, overall application rates remain extremely low. Between 2008/09 and 2009/10, resettlement area farmers only managed to increase their average application rate per hectare of planted land from 15.3kg/ha to 16.5kg/ha while communal area farmers increased from 7.9kg/ha to 12.8kg/ha.

The general shortage of inputs almost certainly helps explain why resettled farmers planted only some 52-55 percent of their available land in both 2008/09 and 2009/20 and why communal farmers planted only two-thirds of their available land in 2008/09 and only 57 percent the following season.

Evidence on any changes in use of other inputs is less informative. In both 2008/09 and 2009/10, despite citing lack of draught power as a constraint, only about three percent of all plots failed to be ploughed in both seasons. It would be more informative to know *when* they were ploughed, as late ploughing leads to late planting and lower yields. The decline in the number of cattle (reported later in this paper) suggests strongly that ploughing teams are being shared and, as a result, some plots are inevitably ploughed late. Although labour is cited as a growing constraint over time, particularly by resettled farmers, only something over six percent of growers hired labour during the 2009/10 season. Two factors are at work here. One is the aging profile of resettled farmers and the departure of their working-age children to marital households or to seek other economic opportunities, and the other is the shortage of capital to hire labour.

¹² The decline in mean tobacco area per grower is to be expected since new entrants into tobacco cultivation are inexperienced, and they also have not yet constructed sufficient barn capacity to be able to cure the harvest from a larger area.

¹³ A partial explanation for this phenomenon is that growers of cotton on credit reported to the research team that they diverted some of the fertilizer received for cotton to their maize crop.

Table 9.—Changes in cropping patterns and fertilizer application rates between the 2008/09 and 2009/10 seasons, all areas^a

Year & crop	Total number of plots ^b	Proportion of total area planted	Mean area per grower	Proportion of growers applying fertilizer	Mean quantity of fertilizer applied per grower	Mean quantity of fertilizer applied per hectare
		(percent)	(hectares)	(percent)	(kg)	(kg)
2008/09						
Maize	228	53.80	1.04	57.85	112.0	108.0
Groundnuts	174	13.65	0.34	0.00	0.0	0.0
Rapoko	43	2.70	0.27	0.02	0.6	2.1
Mhunga	29	3.86	0.52	0.00	0.0	0.0
Sorghum	41	2.44	0.26	0.02	0.5	1.89
Nyimo	77	3.76	0.21	0.00	0.0	0.0
Tobacco	20	4.81	1.04	90.00	431.1	413.0
Sunflower	65	4.97	0.35	0.03	1.8	5.6
Cotton	26	4.46	0.74	84.62	106.0	142.0
All beans	65	3.32	0.24	14.29	6.0	26.1
Rice	6	0.14	0.10	0.00	0.0	0.0
All potatoes	70	1.97	0.13	0.05	0.6	4.4
All others	5	0.12	0.13	0.00	0.0	0.0
2009/10						
Maize	234	49.45	0.95	64.00	106.1	109.3
Groundnuts	187	15.62	0.37	0.01 ^c	0.5 ^c	1.2 ^c
Rapoko	18	1.16	0.29	0.06	0.3	0.7
Mhunga	28	4.04	1.00	0.00	0.0	0.0
Sorghum	32	2.19	0.54	0.13	6.7	16.6
Nyimo	85	4.31	0.23	0.01	1.2	2.9
Tobacco	47	7.39	0.39	99.98	329.6	442.2
Sunflower	37	2.42	0.29	5.40	3.0	10.3
Cotton	41	8.71	1.04	85.37	96.0 ^d	91.8 ^d
All beans	62	3.06	0.22	14.52	8.3	38.0
Rice	5	0.25	0.02	0.00	0.0	0.0
All potatoes	49	1.23	0.09	0.04	1.8	16.3
All others	8	0.17	0.01	0.13	0.3	2.3

^a A total of 193 households in both RAs and CAs in each season.

^b There may be multiple plots of any given crop for a household and, because of the frequency of shared responsibilities for many plots, there will normally be many more "growers" than plots.

^c It is believed that applications of gypsum have been misreported as fertilizer applications.

^d Underestimates because of the failure of some growers who had credit for inputs to specify the quantity of fertilizer they received, perhaps because they were diverting it to maize.

Although we have attempted to emphasize the positive aspects of economic recovery and the assistance provided to small-scale farmers, the assessment given by farmers themselves is far less positive. At a time when the outcome of the 2009/10 season was daily becoming more apparent, farmers reported their expectations as shown in Table 10.

Table 10.—The anticipated harvest from the 2009/10 season in comparison with all previous harvests farming in the same area

Expectation	(percent)
Much better than average	11.46
Average	32.81
Much worse than average	29.17
The worst we have ever had	26.56

Although the norm was an expectation for an average harvest, the majority feared something very much worse.

It was noted earlier that one characteristic that set resettlement areas off from communal areas during the 1980s and 1990s was the high levels of sales of agricultural produce. Crop sales were the major source of income for resettlement areas. Looking at the disposal of the harvest from the 2008/09 season indicates that farmers are retaining a far greater proportion of their crops and selling much less than in the past.

There are at least three reasons for this change in behaviour. One is that a decade of hyperinflation taught farmers that selling crops immediately post-harvest to raise cash and then, if necessary, purchasing staple food supplies later in the season was a losing game. Cash lost its value so quickly that it was far wiser to hold on to any surplus crops in the sure knowledge that physical stocks would lose any value much more slowly. The second factor is that, with the collapse of the market for inputs, crop yields declined so that farmers simply had much smaller surpluses than in the past. A third reason is that the market prices being offered for certain commodities were so low that farmers withheld crops from market, even such crops as tobacco and cotton.

Overall, only 22 percent of all growers of all crops sold anything following the harvest in 2009, and for those who did sell the quantities were normally very small. As in the past, the proportion selling differs between resettlement and communal areas. In the former, just over 24 percent sold any of the crops harvested, while in the communal areas the proportion selling was very low—well under 10 percent.

5. Opportunities and constraints for alternative livelihood activities

Non agricultural incomes.

The reported changes in agricultural production suggest that incomes from agriculture dropped dramatically.¹⁴ Moreover, alternative sources of income were less easily found and less locally available than previously. Before, the adjacent commercial farms often provided opportunities to earn a seasonal income when times were tough (e.g. by working temporary jobs such as weeding or harvesting during peak labour-demand times). With the “fast-track land reform programme” (FTLRP), these opportunities virtually disappeared. Reports on the non-agricultural activities that farmers often were involved in reveal difficulties in accessing alternative sources of income. The reasons for this are because either

¹⁴ The hyperinflation experienced over the past decade and the associated change in currency from Zimbabwe dollars to US dollars makes it very hard to calculate actual reductions in agricultural incomes.

farmers did not have the money to invest in such activities (for example, trading) or no materials were available. At the same time, in the context of secularly deteriorating agricultural incomes, the local demand for products such as sleeping mats, pots, etc. dropped as well.

During the data collection exercise in 2010, households identified 340 non-farming activities that they were engaged in or had engaged in during the previous 12 months. This is an average of some 1.75 activities per household, a figure that compares with the number of activities reported in the early 1990s, but is considerably lower than the 2 to 3 activities households were engaged in in the late 1990s.

The range of activities reported is far-ranging, even with the compressed presentation in Table 11. Gardening, exclusively a woman's activity, is the primary activity reported, as has been the case in past ZRHDS survey rounds.¹⁵ Gold-panning also regularly appears, as does petty trading. What appears to have assumed increased importance however is casual labouring. Given the virtual disappearance of commercial farms, it comes as a surprise that nearly 20 percent of the sample reported casual labour as a source of income. But, since only 2.9 percent of all activities took place on a commercial farm, the conclusion must be that many have found opportunities to do piece-work in their own communities. This conclusion is supported by the fact that nearly half of all non-farm activities are undertaken in the same village where the participants live, while another quarter are in a neighbouring village.

Table 11.—Non-farm income-earning activities reported to have been undertaken during 2009-10

Activity	Percentage of households involved
Selling garden produce or fruits	34.1
Casual labouring/piece-work	19.1
Gold-panning/diamond mining	7.6
Petty trading/vending: blankets/clothes/paraffin/knives/etc	6.2
Building/carpentry/painting/thatching/brick-making/well-digging	5.9
Handicrafts/carving yokes/pottery/reed mats	4.7
Rearing and selling poultry	3.2
Metalwork: blacksmith/tinsmith/welding	2.9
Selling milk	2.9
Formal employment (full- or part-time)	2.4
Fishing and selling fish	1.8
Security/neighbourhood police/guard	1.5
Sewing and selling clothes	1.5
Repairs: shoes/umbrella/bicycles/clothes	1.2
Traditional healer/herbalist/treating people or animals	1.2
Selling firewood or grass	0.9
Barber/hairdresser	0.6
Pension	0.6
Rent: money from lodgers	0.6
Others: beer-brewing/goat-keeping/selling fruit trees, etc	1.2
Total	100.0

¹⁵ It should be noted that in Zimbabwe *gardening* is not considered *farming*. The term *farming* is applied only to field crops, whereas most gardening takes place in women's domains—around or near the homestead.

It should be noted that not all the income earned from such activities is in the form of cash. Indeed, the most common form of payment is a combination of both in-cash and in-kind, but exclusively in-kind payments still make up almost 30 percent of the total. While more detailed analysis is needed, this pattern suggests that more people are seeking piece-work to meet very specific needs that they cannot access very easily in the marketplace.

Migration away from the old resettlement areas.

When reviewing the changes in agricultural and non-agricultural activities, the findings suggest contracting opportunities to make a living and changing patterns of livelihoods. In anticipation and response to these changes, many people went away in search for greener pastures.

In the survey, we collected information on almost 3000 individuals that at one time lived on the homesteads of the respondents interviewed. Table 12 indicates that just over half of these individuals no longer live with the respondents, and the large majority (more than 85 percent) of those who no longer live there left after 1999. This pattern is strongest in resettlement areas and in the areas with the highest agro-ecological potential and is related to the strong effect of migration to the new resettlement schemes created during the fast-track resettlement process. The migration led to considerable changes in household size between 2000 and 2010, as reported in Table 13, particularly in Mupfurudzi where so many sons remained living and farming on their parents' plot after they got married and started their own families.

Table 12.—Percentage of household members migrating after 1999

Location	Percentage
Full sample	52
Resettlement Areas	53
Communal Areas	45
Natural Region 2	59
Natural Region 3	53
Natural Region 4	40

Table 13.—Mean household size in 2000 and 2010*

	Resettlement areas		Adjacent communal areas	
	2000	2010	2000	2010
All areas	9.2	7.4	6.1	5.9
Mupfurudzi	10.9	6.1	6.5	6.1
Sengezi	7.2	7.5	5.2	4.9
Mutanda	9.6	9.0	6.7	6.8

* All differences statistically significant (0.000).
Source: ZRHDS data.

The tendency of married sons leaving their parents plots to establish their own farm in the 2000s is confirmed when we look at the characteristics of the migrants. The average age of migrants was 26 years, but there was a clear difference in age for those leaving before 1999 (31 years) and after 1999 (25 years). If we look more closely at the relationship of the migrant to the household

head, it is quite clear that after 1999, the majority of individuals leaving are adult sons, daughters-in-law and grandchildren (Table 14), who often left as families. In the full sample, 42 percent of the migrants leaving before 1999 were adult children, their spouses and children. After 1999, this figure was 62 percent. These differences are significant across all regions and settlement types except for NR3. In the remainder of this section, we focus on the migrants who left the household since 1999.

Table 14.—Adult children, their spouses and children as a percentage of migrants*

	Period when migration occurred	
	Before 1999 (<i>n</i> =168)	After 1999 (<i>n</i> =1157)
	<i>(percentage)</i>	
Full sample	42	62
Resettlement Areas	44	63
Communal Areas	15	58
Natural Region 2	40	48
Natural Region 3	62	70
Natural Region 4	33	81

* All differences are significant except for NR3.

The importance of new farming opportunities is also reflected in the target location for which migrants left, presented in Table 15. Other rural areas (most likely FTLRP schemes) were most often cited as the location to which migrants went. This is the case for all regions and settlement types.

Table 15.—Current place of residence of migrant household members^a

	Within the village	RA or CA ^b	Other rural area	Harare	Other town	Outside Zimbabwe
Full sample	17	8	36	16	10	4
Resettlement	17	7	37	14	8	3
Communal	14	11	29	22	15	6
Region 2	21	11	38	7	8	1
Region 3	5	5	31	29	8	10
Region 4	22	7	38	15	15	1

^a Differences between settlement types and natural regions are significant.

^b RA refers to those living in the same resettlement area but not in their original village.

Interestingly, there are some clear differences between settlement types and regions when it comes to the other locations that people went to. Movements within the village (through marriage, occupying vacant plots or moving to newly created residential homesteads)¹⁶ are particularly evident in NR2 and NR4, while Harare and other urban areas are important destinations for communal households and households resident in NR3 and NR4, reflecting a historically

¹⁶ In Mupfurdzi, we received reports that some village heads decided to create new residential homesteads in their village to allow adult children and their families to occupy their own stands. The agricultural fields belonging to the original household heads were not extended and were still informally subdivided.

stronger orientations toward work in town in these areas. Migration to other countries in the region or further away, was strongest in NR3.

Members who left the household to settle in a fast-track scheme acquired on average 13 acres (5.3ha) of land in their new place of residence. The majority of farmers received somewhat less—around 12 acres, while a few received only one acre and six migrants were able to acquire more than 20 acres. More than 30 percent of the migrants who went to the fast-track schemes took cattle with them when they moved to their new farms (on average 1.8 with a range of between 2 and 40), and a similar percentage took equipment. Potentially this means young able-bodied migrants deprived the remaining household members of labour, cattle and equipment to work in the fields (as is suggested by farmers' listing of the constraints affecting them). This aspect requires more detailed analysis.

For migrants who relocated to a different stand in the same village, the percentages relocating cattle—and equipment—were much lower and many respondents reported they still share cattle and equipment, and possibly labour, with the intra-village migrants.

The members who left the households to look for work predominantly went to Harare, other towns in Zimbabwe, or somewhere outside Zimbabwe. Many of them were successful in finding a job; only 12 percent failed to do so. The occupations most frequently mentioned were piece-worker, domestic worker, vendor, teacher or some other job in the public administration, soldier or police force, skilled manual worker, or farm worker.

Table 16 below reports information on well-being for those who left the homestead to go to the fast-track areas, to a new plot in the same village, to work elsewhere, or for other reasons. The majority of labour migrants or migrants to the fast track resettlement schemes were perceived to be better off now (often with reference to the investment in equipment, buildings and cattle that have been realized). Movements within the village are more frequently associated with no changes in well-being, although also a considerable proportion of previous residents are perceived to be better off.

Table 16.—Perceived welfare of those who left the homestead for optional locations and/or activities

Perceived welfare	Fast track	Village plot	Work	Other
	<i>(percent)</i>			
Better Off	54	37	58	46
Similar	28	47	25	19
Worse Off	7	4	7	9
Not Known ¹⁷	10	12	10	26

¹⁷ Respondents could not tell us about the well-being of the migrants, either because they lost contact with them, or respondents indicated the move away from the homestead was so recent, no changes could have been observed.

Changes in sources of money for expenditures.

With the available resources for the survey, it was impossible to include instruments to collect detailed expenditure data as has been done in past rounds of the ZRHDS. An alternative, if somewhat less satisfactory approach, is taken here of looking at livestock sales. A household's livestock portfolio has always served the function of a store of reserve value that can be called upon when necessary. Livestock assets have been seriously depleted over the past decade, as will be discussed in more detail in the next section. As a result there have been changes in both the types and numbers of animals sold and in the expenditure categories for which animals are sold (Table 17).

Table 17.—The use of livestock disposals to meet expenditure needs,
2001 and 2010

Reasons for selling or bartering livestock	2001	2010
To buy implements, farm assets	1.6	1.2
To help relatives or friends	0.3	0.0
To buy food	27.7	27.1
To buy other general, non-food goods	10.6	15.3
To buy seeds/fertilizer	15.5	14.1
To buy livestock	3.2	2.4
To pay for services (e.g., labour, grinding, etc)	0.6	2.4
To repay loans	1.9	0.0
To pay for the use of land	0.3	0.0
To pay for travel expenses	1.9	3.5
To pay taxes/levies	0.6	0.0
To buy building materials, construction	0.6	0.0
To pay for health expenses	6.5	2.4
To pay education expenses/fees	11.9	15.3
To pay marriage expenses	3.9	3.5
To pay for repairs	0.6	1.2
For savings	3.9	0.0
For business -- To invest/reinvest into a business	3.5	2.4
Animal was very old / ill	0.0	4.7
Other	4.5	4.7
Total	100.0	100.0

The first point to be made is that the sales in 2010 are generated from a restricted range of animal types. While small stock such as pigs, sheep, calves, rabbits and donkeys were all sold in 2001, none of these types of animals was sold a decade later, yet cattle sales—at just under 50 percent of total transactions—remain at about the same level in both years. While the major expenditure priorities remained much the same, households had a much smaller base to draw on in meeting them. Moreover, continuing to sell cattle threatens to reduce household herds below the point of reproductive viability, further reducing tillage capacity and the supply of milk.

In the straitened circumstances of 2010, some expenditure categories vanished altogether, including raising cash to help friends, to repay loans, and for savings. Business investment also declined. In contrast, several of the more wide-ranging expenditure categories—general purchases, paying for services, travel and education—assumed greater importance, suggesting that households' remaining livestock resources were being used more-and-more to finance day-to-day expenditure.

Networks and transfers.

Changes in the social and economic environment may also have effects on the assistance networks that exist within the villages, across villages and across rural and urban landscapes. Previous work in the study areas has demonstrated the importance of assistance networks in coping with crisis situations as well as day-to-day activities (Dekker 2004, Barr 2004, Barr *et al* 2010). While the population movements, cash constraints and other deteriorations in economic conditions in the 2000s probably increased the need for collective action, many non-religious community-based organizations (CBOs) and other networks were also badly affected by the same events. Preliminary results on a sub-sample of six villages from our study areas shows that almost 75 percent of the CBOs that were active in 2000 no longer existed in 2008. This may have severe repercussions on exchanges within the community.

In the 2000 and 2010 survey, we also collected information on the assistance relationships the households in the study areas have with other households, either through providing assistance to or receiving assistance from them. The information in Table 18 shows that, overall, the proportion of households engaged in provision of assistance, either as a giver or receiver, has gone down between 2000 and 2010, especially in resettlement areas and Natural Region 2.¹⁸ However, a large majority of the households are still engaged in these informal arrangements.

Table 18.—Percentage of households reporting giving or receiving assistance, from/to other households

	Year of survey		Significance level
	2000	2010	
	<i>(percentage of households)</i>		
Full sample	90	84	0.090
Resettlement	89	79	0.030
Communal	94	98	0.298
Natural Region 2	89	77	0.068
Natural Region 3	87	82	0.477
Natural Region 4	95	95	1.000

Table 19 provides more detailed information on the types of assistance provided and received, and covers, for example, labour involved in childcare, food or tillage (ploughing fields) and cash assistance to cover medical or educational expenses, costs for agricultural production or investment, etc.¹⁹ The disaggregation by type of assistance provides an interesting distinction. Generally, the proportion of households which gave assistance to other households increased between 2000 and 2010. This is especially the case for taking care of children, providing tillage or labour services and granting cash gifts or loans to other households so they can finance medical or other expenditures. For only one type of assistance given did we find a considerable decline: the percentage of households providing cash assistance to pay for funeral expenses decreased from 96 to 46 percent.²⁰

¹⁸ The information in this table only captures the percentage of households involved and does not address the numbers or volumes of assistance involved.

¹⁹ Again, Table 19 captures the percentage of households involved in providing or receiving assistance and not the volume of assistance involved.

²⁰ Cash contributions to funeral expenses could be either a contribution to the household that hosts a funeral or a cash gift/loan to a household for the customary contribution by community and family members to another household's funeral.

Table 19.—Percentage of households reporting giving or receiving assistance, by type of assistance*

Type of assistance	Year of survey	
	2000	2010
	<i>(percentage of households)</i>	
Assistance given		
Childcare	10	32
Food	16	14
Tillage services	9	35
Milk	9	10
Non-paid labour assistance	42	47
Other labour	4	16
Cash for medical expenses	3	10
Cash for funerals	96	46
Cash for education	3	7
Cash for farming	0	0
Cash for food	1	0
Cash for agricultural investment	0	1
Cash for business investment	0	1
Other cash	1	9
Assistance received		
Childcare	6	4
Food	3	1
Tillage services	11	21
Milk	2	5
Non-paid labour assistance	19	27
Other labour	3	8
Cash for medical expenses	5	8
Cash for funerals	10	8
Cash for education	8	6
Cash for farming	4	2
Cash for food	20	9
Cash for agricultural investment	0	0
Cash for business investment	1	1
Other cash	0	0

* For almost all types of assistance, the proportion of households reporting giving assistance is larger than the proportion of households receiving assistance. This difference cannot necessarily be interpreted as a sign that the respondents are net givers of assistance as we do not consider the volumes of assistance involved, and there may be a reporting bias between giving and providing assistance.

The percentage of households receiving assistance from other households has not increased to the same extent. Although we see an increase in the percentage of households that received tillage and other labour services from other households, the proportion of households receiving cash assistance has generally decreased—with the exception of medical expenses.

Coping with individual risk.

Along the more threatening risks individuals living in farming areas face is that of poor health. If an adult is so badly affected by illness or injury as to be unable to work, particularly at critical times of the growing season, the agricultural output—and food supply—of the entire household is jeopardized for an entire year. Thus the individual risk translates into a societal problem.

While the communal areas we studied have been fairly well supplied with clinics for a long time, the resettlement areas were only supplied with clinics in the early 1980s. In the 1980s and 90s, these clinics provided free treatment and a wide range of health-monitoring and preventative programmes as well as a referral service with ambulance support. They were often also the centres for child-feeding programmes in serious drought years. By the late 1990s, however, the clinics—along with the health budget as a whole—were suffering from serious underfunding. Just a few years thereafter, the rural clinics had run out of medical supplies altogether and backup from urban centres had dwindled to nearly nothing.

In 2000 the most important reason people gave for not going for medical consultation was that the illness was mild (68 percent) and none referred to the costs involved in treatment as a deterrent. In 2010, the main reason for not going for consultation was that the facility was too expensive (31 percent), while 22 percent indicated the illness was mild. Disease patterns are very similar in both years, with respiratory diseases, including TB, malaria and general aches and pains (teeth, eyes/limbs) being the main symptoms referred to by patients.

Table 20.—Responses to illness and health problems

	Year of survey	
	2000	2010
	<i>(percent)</i>	
Households affected	55	70
Actions of households affected		
Bought medicines	60	34
No consultation	35	23
Consulted clinic/nurse	47	63
Consulted doctor/hospital	8	6
Consulted VHW ^a	6	2
Consulted prophet/n'anga ^b	2	7

^a Village Health Worker.

^b A prophet is a spiritual healer associated with certain religions, while a n'anga is a traditional healer who makes use of herbs, charms and spells.

Table 20 reports that the proportion of households who bought medicines in case of illness has dramatically reduced from 60 to 34 percent. At the same time, we see an increase in the proportion of households who visit a clinic when confronted with an illness. Village Health Workers are less often consulted, while consultations with a prophet or traditional healer are on the increase, albeit still low.²¹

6. Household investment and wealth

Decreasing cash incomes have also led to changes in investment behaviour. We do have more detailed information on investment in livestock, often considered an important marker of wealth in Zimbabwe (Hoogeveen 2001). Previous work on the ZRHDS data has demonstrated that (resettled farmers) invest strongly in cattle, and the sale of cattle or other livestock is an important coping mechanism

²¹ It should be noted that these findings are suggestive of changes in the utilization of health care services, but they are based on the perceptions of households that are very much affected by the current economic context and may not necessarily reflect actual health status. Information on the latter (as measured by nutritional status) has not been captured in any of the post-2001 surveys.

during hard times such as drought, death, illnesses etc. (Kinsey *et al.* 1998, Kinsey 2010b, Bourdillon *et al.* 2003, Dekker 2004b). When the domestic cattle herd is considered in terms of ox-equivalents, as in Table 21, there are clear signs of disinvestment. The households that resettled in the early 1980s on average owned just over the equivalent of 7 oxen by 1998 and experienced a significant decline in herd size to 5.87 in 2000 and to 3.64 in 2010. Similar declines were experienced by all farmers across settlement types and natural regions, with the exception of those living in NR3.

Table 21.—Ox-equivalent livestock assets, 2000 and 2010

	2000	2010	Significance levels
	<i>(ox-equivalents)</i>		
Full sample	5.87	3.64	0.000
CA	4.06	2.42	0.014
RA	6.52	4.07	0.000
NR2	6.41	3.21	0.000
NR3	4.33	3.15	0.137
NR4	6.79	4.69	0.058
Full sample			
No lseq	8.25	17.62	0.050
Less than 1 lseq	16.40	37.82	0.000
Less than 2 lseq	22.68	47.67	0.000
CA			
No lseq	9.80	18.00	0.532
Less than 1 lseq	17.65	46.00	0.014
Less than 2 lseq	31.37	56.00	0.023
RA			
No lseq	7.69	17.48	0.100
Less than 1 lseq	16.08	34.97	0.002
Less than 2 lseq	19.58	44.76	0.000
NR2			
No lseq	4.05	19.18	0.007
Less than 1 lseq	10.81	39.73	0.001
Less than 2 lseq	17.57	53.42	0.000
NR3			
No lseq	16.39	26.23	0.523
Less than 1 lseq	31.15	44.26	0.296
Less than 2 lseq	37.70	52.46	0.134
NR4			
No lseq	5.08	6.78	0.697
Less than 1 lseq	8.47	28.81	0.005
Less than 2 lseq	13.56	35.59	0.005

The contracting herd sizes are visible not only when considering the average number of oxen-equivalent beasts, but also when looking at the proportion of livestock-poor households in the schemes. Just over ten years ago, Kinsey *et al.* (1998) wrote in their analysis of the importance of cattle in resettlement areas, "The problem of zero stocks (as a result of a series of negative shocks) ... is not relevant for our population as a whole." The continuous economic crisis has in fact resulted in a situation where the problem of zero stocks has become relevant indeed, with a doubling of the number of households that do not have any cattle at all to a proportion of 18 per cent in 2010. The percentage of households with just one or just two lseq also more than doubled between 2000 and 2010, from 16 to 38 percent (for 1 lseq) and from 23 to 48 percent (for 2 lseq) respectively.

With so few livestock resources left, these households risk being trapped in poverty, as was suggested by Hoogeveen (2001).²² Interestingly, this reduction in herd size and increase in the number of livestock poor is not uniform across regions. The number of livestock-poor increases most notably in NR2.

Another perspective is offered in Figure 2, in which we look at the changes in cattle numbers over time for the period 1983 to 2001. Over the entire period herd sizes have grown remarkably steadily from one year to the next at the same time that the proportion of families without cattle declined from some 40 per cent to under 10 per cent (Kinsey *et al.* 1998). The average family herd increased from 4 animals in 1983 to 10 in 2001 and, until 2000, cattle holdings were a good hedge against inflation.

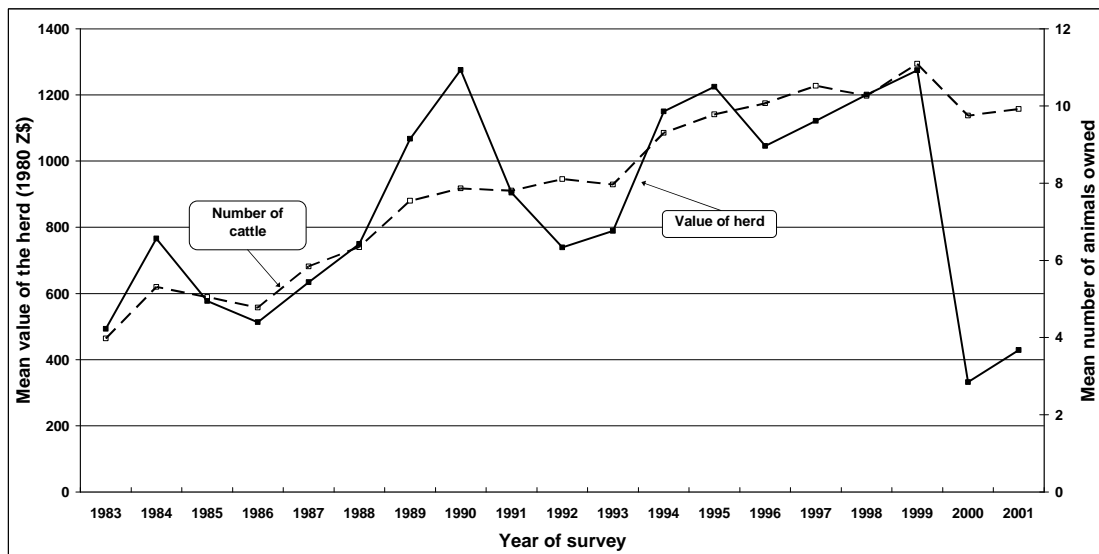


Figure 2. Size and real value of domestic cattle herds, resettled households, 1983 – 2001

Thus, whether the accumulation of cattle is treated as capital or as investments out of income, the ability to realize a return from a herd of a given size differs dramatically from season to season. It was only government's failure to manage inflation that crippled households' ability to smooth consumption and investment through livestock sales. It cannot be established with certainty whether having a larger number of cattle helps households in moving up the income scale, or whether it is a consequence of higher incomes (Kinsey 2010a). Whichever may be the case, households have experienced a serious decline in their economic welfare.

At least one qualification should be made to the figures in Table 21. This particular wealth indicator represents wealth in terms of animal assets at a household level. At the same time, we know that these households have been highly affected by migration. When household members moved to other farming areas to start their own farms (especially adult sons who farmed on their father's plot), some have taken cattle and agricultural equipment with them, as reported in section five. Indeed, when we consider per-capita animal wealth, a different picture emerges: overall there was a slight and non-significant decrease in the

²² Extreme examples of the way in which herds can be depleted for very little reward occurred in one of the study areas in 2008, when one cow was being exchanged for only 20kg of maize.

number of animals per household member between 2000 and 2010 (Table 22). The decrease generally took place between 2000 and 2007 (significant in the full sample), after which per-capita animal wealth picked up again. Notable exceptions are the households in communal areas; these witnessed a significant decrease in per-capita cattle assets from 2000 to 2007 and 2010. Households in NR3 were less severely affected. Both on average and on a per-capita basis, they did not lose any cattle between 2000 and 2007; however they did experience a decrease (insignificant) in mean numbers between 2007 and 2010.

Table 22.—Changes in bovine assets on a per-capita basis,
2000 to 2007 and 2010

	Year of survey			Significance level	
	2000	2007	2010	2000-10	2000-07
Full sample	0.75	0.57	0.64	0.202	0.070
RA	0.75	0.58	0.69	0.598	0.130
CA	0.75	0.56	0.48	0.037	0.281
NR2	0.73	0.51	0.64	0.660	0.040
NR3	0.63	0.64	0.59	0.830	0.903
NR4*	0.89	--	0.67	0.150	--

*For households in NR4, information is only available for 2000 and 2010.

Although such per-capita measures may better reflect the distribution of individual wealth, a household-level perspective tells us more about the resources available for agricultural production in terms of draught power. The increasing proportion of cattle-poor households suggests that household members who took cattle with them when starting their own farm (either in fast-track schemes or elsewhere) and the economic challenges that many households faced over the past decade (selling their cattle to meet basic needs), have stripped a considerable number of farmers of part or all of their resource base.

One interesting observation in this context is that while most farmers experienced a decline in cattle wealth, some 15 percent of households have been able to accumulate cattle over the past 10 years. More detailed analysis is required to understand the determinants of these differential processes of accumulation and impoverishment.

7. Summary and conclusions

Far too little empirical fieldwork has been done over the past 10 years, to understand the full scope of the impact of Zimbabwe's economic decline on small-scale agriculture and small holder farmers. We conducted a small fieldwork exercise during 2010 to extend a larger, ongoing study that has been in operation since 1983. In this paper, we identify (and quantify to a limited extent) certain important trends and highlight areas where the need for further examination seems important.

The data we collected across 18 sites in three different provinces point to an overall decline in the size of rural households, especially in resettlement areas, to which people were once attracted because of their agricultural and economic success. Now they are seeking livelihoods elsewhere, and more than half of all household members have migrated away from their original home areas since 1999.

A fundamental conclusion is that earning a livelihood from farming became extraordinarily more difficult during the past 10 years. Inputs became—and remain—a major problem, and cropped areas—especially cash crops—have been reduced across our sample even though cropping diversity has increased, probably as a risk-management measure. It is only contract farming and donor support in the form of free inputs provided to favoured areas that have prevented the small-scale farming landscape from becoming a wasteland. Less-favoured areas have had to devise their own coping mechanisms. And, overall, mean rates of fertilizer application to planted land have dropped to insignificant levels.

Households have sought to modify their livelihood portfolios through a number of different approaches: by migrating, by pursuing a wide range of non-farm activities and by using social networks and transfers. However, we find indications that these alternatives may not be as supportive now as they were in the past; certainly they have changed in nature.

Among the most serious outcomes of the economic turmoil of the past decade has been the depletion of families' livestock assets, even though some have managed to increase their herds. The reduction in herds has not only weakened the overall economic resource base but it also has reduced the ability to manage the land resource through well-timed tillage. Moreover, the divergent trajectories in cattle assets underscore a worrying trend emerging from the broader ZRHDS study: the widening disparity in income and welfare levels among rural households.

The work that we report in this paper identifies several areas where further analysis is urgently needed if we are to understand better how households can most effectively be assisted to exit the low-input agricultural productivity state in which they now find themselves and how their livelihoods can be enhanced. There is also a need to understand better what happens to the household's asset base that supports agricultural activities when household members leave to join fast track or to seek other opportunities elsewhere. This is particularly true in the original resettlement areas where so many families appear to be at the same stage in the household cycle, with many younger family members leaving home for multiple reasons. All too often, proposals intended to spur agricultural development in Zimbabwe have completely ignored the dynamics of the household cycle, and some in-depth work here should yield substantial benefits.

References

- Barr, Abigail. 2004. Forging effective new communities: The evolution of civil society in Zimbabwean resettled villages. *World Development* 32, 10: 1753-66.
- _____, Marleen Dekker and Marcel Fafchamps. 2010. Who shares risk with whom under different enforcement mechanisms? *BREAD Working Paper No. 267*.
- Michael Bourdillon, Paul Hebinck John Hoddinott, Bill Kinsey, John Marondo, Netsayi Mudege and Trudy Owens. 2003. Assessing the impact of HYV maize in resettlement areas of Zimbabwe. FCND Discussion Paper No 161. Washington DC: International Food Policy Research Institute.
- Deininger, Klaus, Hans Hoogeveen and Bill Kinsey. 2004. Economic benefits and costs of land redistribution in Zimbabwe in the early 1980s. *World Development* 32, 10: 1697-1709.
- Dekker, M. 2004a. *Risk, Resettlement and Relations: Social Security in Rural Zimbabwe*. Tinbergen Institute Research Series No. 331. Amsterdam: Thela Thesis.
- _____. 2004b. Sustainability and resourcefulness: Support networks during periods of stress. *World Development* 32, 10: 1735-1751.
- Harts-Broekhuis, A. and H. Huisman. 2001. Resettlement revisited: Land reform results in resource-poor regions in Zimbabwe. *Geoforum* 32: 285-298.
- Hoogeveen, H. 2001. *Risk and Insurance in Rural Zimbabwe*. Research Series No. 247. Amsterdam: Tinbergen Institute.
- Kinsey, Bill, Kees Burger and J. W. Gunning. 1998. Coping with drought in Zimbabwe: Survey evidence on responses of rural households to risk. *World Development* 26, 1.
- Kinsey, Bill. 2010a. Land, food security and livelihoods in rural Zimbabwe: The lost war against poverty. Paper for the 2010 conference of The African Studies Association of the UK, St Antony's College, University of Oxford, 16-18 September.
- _____. 2010b. Poverty dynamics in rural Zimbabwe: The 30 years (lost) 'war against poverty'. Paper for the conference "Ten Years of War against Poverty - What Have We Learned since 2000?" at the Chronic Poverty Research Centre/Brooks World Poverty Institute, University of Manchester, 8-10 September.
- Moyo, S. 1998. *The Land Acquisition Process in Zimbabwe 1997/98*. Harare: United Nations Development Program.
- Reardon, T. 1997. Using evidence of household income diversification to inform the study of the rural nonfarm labour market in Africa. *World Development* 25, 5: 735-747.