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STRATEGIES FOR COPING WITH FOOD DEFICITS IN RURAL ZIMBABWE

by

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INTRODUCTION

The resourcefulness of African smallholders in the face of recurrent food deficits is often overlooked by professionals and officials concerned with food security. Food scarcity has provoked a wide range of interventions by exogenous institutions but only rarely have the coping strategies maintained by small farmers been recognised as affording a basis for such action. Research has shown that rural production systems in different parts of sub-Saharan Africa incorporate a wide range of activities designed to reduce the incidence and impact of food shortage (e.g. Campbell, D.J., 1984; Watts, 1983a; Matiza *et al.* 1989). These activities are integral to rural production systems and are based on resources and relationships found in the social, economic and political institutions of society and on the generosity of the local physical environment.

The fundamental approach to ensuring food security, in areas where recurrent but unpredictable periods of food scarcity are common, is to build up assets which can be utilised or liquidated in times of stress. In rural Africa such assets are diverse. They include food stored in granaries; investment in human capital such as education which may permit a family member to find wage employment outside the village and send home remittances; the maintenance of fallow land or bush nearby where game and edible plants can be sought when food is scarce; commitment to the extended family which can be relied upon to provide gifts or loans of food in times of shortage; and membership of local organisations which may provide assistance in times of need. Such social and economic investments are significant components of the production system and represent a set of long-term, continuous coping strategies. Once a shortage begins a second set of strategies is adopted for liquidating these assets.

Unlike emergency relief measures, villagers' coping strategies are not actions resorted to only under exigent conditions but are, rather, expressions of local understanding of the long-term functioning of a complex interaction between a society and its environment. Food scarcity in rural Africa is a recurrent but unpredictable fact of life and protection against it is an ongoing

process, not an emergency action. It is this integration of coping strategies within the production system that makes them effective and yet, ironically, has made them vulnerable to development interventions designed to promote food security by altering facets of society, facets which have often turned out to be essential to the viability of indigenous coping mechanisms. In such cases, development may have contributed to food insecurity rather than relieved it.

This paper examines the strategies used by rural Zimbabwean households to reduce the effects of food shortage. It is based on research conducted during 1988 in seven villages located in different parts of the country. The paper demonstrates that a variety of options are exercised to offset food shortages and that, while these may differ in detail from one area to another, the structure of coping in the study areas is similar. Coping strategies are complementary to local production and external assistance in the search for food security and as such deserve greater attention in the development of policy to reduce the incidence and impact of food shortage. The paper examines differences in coping strategies between areas, particularly those with a long history of settlement versus newly settled areas; the impact of gender, economic status and age will be assessed in subsequent papers.

The paper is organised into seven sections. Following the introduction, the theoretical context for the research is presented in the second section. The third section presents a review of the literature on similar studies of coping strategies conducted in other parts of Africa and of the available material on Zimbabwe. The fourth section outlines the contradictory experience of Zimbabwe in the transformation of its small-scale communal agriculture during the past decade when, nationally, the sector has greatly increased its share of marketed crops while at the same time a large proportion of households in drought-prone low rainfall areas remain vulnerable to recurrent food shortages. The fifth section describes the research methodology and the study villages while the sixth section discusses the results of the survey. The conclusion relates the findings to the African literature on coping strategies and indicates the relevance of such information to the development of a national food security policy.

THEORETICAL APPROACHES TO THE STUDY OF COPING STRATEGIES

Two broad theoretical approaches can be identified in the study of ways in which African rural societies cope with recurrent food deficits. The adaptationist framework of cultural ecology (Moran, 1982; Grossman, 1981)

argues that societies adapt and adjust to their environments in order to promote their objectives. Studies of specific rural societies have demonstrated that their land use systems reflect complex interactions between social, economic, political and environmental factors and were, traditionally, remarkably well adapted to recurrent environmental stress (Bernard, 1972; Colson, 1979; Knight, 1974; Netting, 1968; Scudder, 1962). Strategies for coping with food shortages are thus a sub-set of activities within people-environment systems whose aim is to reduce the risks associated with recurrent but unpredictable deficits. This view was supported by research conducted by geographers interested in the impact of natural hazards upon society (White, 1974; Burton *et al.*, 1978). These studies illustrated the wide range of responses that various societies have developed to reduce the impact of drought and food shortages.

The adaptionist approach has been criticized for failing to recognize that the ability of societies to adopt effective responses is constrained by political and economic conditions. These constraints will limit the options available to different societies and, within societies, to different socio-economic classes (Bargatsky, 1984; Waddell, 1977; Hewitt, 1983). Alternatives to the adaptionist framework emphasize the need to look at coping strategies as part of the overall structure of rural society. As such they are part of an ongoing set of interactions between social, political and economic processes and environmental circumstances. These studies stress that local conditions cannot be understood merely as characteristics of a place, a particular village, but rather as the outcome of the interactive relationship between social, economic and political forces and the physical resource base. This context for the study of rural production systems has recently assumed the title of political ecology (Watts, 1983a, 1983b; Blaikie, 1985; Blaikie and Brookfield, 1987) and is related to the contemporary reappraisal of the nature of regional analysis (Massey, 1984; Sack, 1974; Gore, 1984; Pudur, 1988).

The research discussed in this paper is set within the broad framework of political ecology. Coping strategies are seen as critical facets of rural systems, adaptations to an unpredictable production environment which are subject to modification as the development context of the village is altered. Despite decades of change in response to imposed political and economic conditions, in most societies many traditional strategies still exist, alongside recently adopted ones, and have an important role in reducing the impact of food deficits upon the community.

STRATEGIES FOR COPING WITH SEVERE FOOD SHORTAGE IN RURAL AFRICA

Food shortage has become a chronic problem for much of rural Africa. Periods of intense food deficit were, and in many ways are still, associated with drought, livestock disease, locust invasions and warfare. Shortages were an expected though unpredictable fact of rural life. Societies living in Africa's semi-arid lands developed a wide range of strategies to reduce the impact of recurrent food deficits upon the population. The strategies were integral components of rural production systems and were often able to prevent widespread hardship in times of reduced crop production or food availability. They may have appeared to be of minor importance during periods of food surplus but assumed a critical role in times of hardship.

These coping strategies accessed a variety of resources within rural production systems. Some, such as the gift or loan of food or money between relatives and friends, were based on long-standing reciprocal social relations, others focused upon increasing household cash incomes such as selling livestock, household goods or labour migration, while the political system provided help in the form of food from the chief's reserves or from food raids during times of war. Further resources existed in the physical environment where animals could be hunted and wild plants and fruits were collected for food. The range of resources afforded people the means to prevent a food shortage, modify conditions during a deficit or share and bear the consequences together (Burton *et al.*, 1978) (Table 1). The specific activities which people use in times of deficit differ from society to society, depending upon the socio-economic structure, the production system and the physical environment. But throughout Africa, among societies as different as the Somali in the northeast (Cassanelli, 1982) and the Hausa in the west (Watts, 1983a, 1983b), coping strategies exist.

There have been a number of studies of societies' responses to drought and food shortage in southern Africa which complement those from other parts of the continent (Fleuret, 1986; Zinyama *et al.*, 1988) but relatively little research has been done in Zimbabwe (Cheater and Bourdillon, 1982; Campbell, B.M., 1986, 1987). The types of resources on which coping strategies rely are similar, though they differ in specific character from place to place, and recourse to them tends to follow an identifiable sequence in which farmers first turn to options which involve relatively little disruption and later to less desirable ones (Zinyama *et al.*, 1988).

TABLE 1:
CHARACTERISTICS OF STRATEGIES FOR COPING WITH FOOD DEFICIT

	SOCIAL	ECONOMIC	ENVIRONMENTAL	POLITICAL
Prevent Occurrence of Deficit	Extended family; village ties; clans, etc.	Store; production strategy; economic diversity; build up assets	Fallow manure; ecological variety; wild food	Taxation by ruling groups
Modify Conditions of Deficit	Pray; pay rainmaker	Sell: crops, food assets, livestock; labour migration	Migrate to new lands	Raiding
Share Consequences	Gifts; loans children go to kin	Gifts; loans		Access to relief institutions
Bear Consequences	Pray; elderly 'go out to die'	Cattle die; crops wilt	Desertification	<i>Coups d'état</i>

Source: modified from Burton, Kates and White (1978)

FOOD DEFICITS IN THE MIDST OF PLENTY IN RURAL ZIMBABWE

One of the most remarkable development successes in post-independent Zimbabwe has been the transformation of its small-scale black farming sector. This sector was largely neglected and was regarded primarily as a labour reserve during the colonial period while government research, marketing, extension and credit services were directed at the white large-scale farming sector. Since 1980, agriculture and rural development in the communal areas have been given priority. For their part, black small-scale farmers have responded to the new economic opportunities by substantially increasing their share of marketed crops sold to the statutory marketing boards with maize sales, for instance, rising from less than 10% per year before independence to over 50% of annual sales today (Rohrbach, 1987; Zinyama, 1988a).

The progress achieved so far can only be described as remarkable, especially when viewed against a backdrop of recurrent and severe droughts during the mid-1980s. However, these nationwide changes and transformation hide substantial spatial and social disparities. The continuing racial and social maldistribution of land across the agro-ecological regions¹ that was inherited from the colonial era exerts a considerable differentiating influence on the current pattern of development of the communal farming sector (Zinyama, 1988a). Thus, in seasons of normal rainfall, the three provinces of Mashonaland Central, East and West which are located in more favourable agro-ecological zones, contribute between 55% and 65% of the total maize sold annually to the Grain Marketing Board (GMB) by black small-scale farmers countrywide, rising to over 95% following severe droughts when the lower rainfall areas are hardest hit. Some two-thirds of the maize sold to the GMB by small-scale farmers during the period 1980–86 came from a little over one-quarter of the farming population who are fortunate enough to live in these three provinces. Rohrbach (1987) has also demonstrated from a comparative study of two communal areas, Mangwende to the east of Harare in Natural Region II and Chivi to the south in Natural

1. Zimbabwe is divided for commercial farming purposes into five agro-ecological zones, commonly called Natural Farming Regions, primarily on the basis of rainfall amount and reliability. Conditions become increasingly marginal for farming from Natural Region I to Natural Region V as rainfall decreases in both amount and reliability. Regions IV and V, which receive below 650 mm of rainfall per year, are subject to severe seasonal droughts and are considered suitable only for extensive livestock and game ranching, supplemented in Region IV by the cultivation of drought resistant crops such as millets and sorghum.

Region IV, that the relative impact of any policy or institutional intervention to promote agricultural production depends very much on the agro-ecological conditions of the areas in question.

Overall, the regional and social disparities emerging from the commercialisation of small-scale agriculture suggest that on-farm incomes for a large proportion of communal area farmers, especially in the low rainfall areas, have changed little from what they were before 1980. The benefits from the new national development thrust are largely accruing to a small number of farmers within the better agro-ecological regions. Elsewhere, rural households continue to be handicapped by the constant threat of drought and food shortages, infertile soils and low agricultural production. Given these regional disparities in food production and distribution, it is not surprising that malnutrition continues to be a major public health problem in many parts of rural Zimbabwe (Republic of Zimbabwe, 1986; Sanders and Davies, 1988), particularly in low rainfall areas where a considerable proportion of children are under-nourished even during supposedly good crop years. Overall, primarily because post-independence agrarian restructuring has been limited to date (Munslow, 1985; Stoneman and Cliffe, 1989; Campbell, D.J. *et al.*, 1989), many rural families in low rainfall areas with unpredictable production environments continue to be vulnerable to recurrent food deficits. It is therefore pertinent to examine and understand, as a prelude to formulating development policies and intervention strategies, how rural households cope with food shortages.

RESEARCH METHODOLOGY AND STUDY AREAS

The present study is based upon a questionnaire survey of 194 households from five villages in Mudzi, Buhera and Gokwe districts and two in the Dewure resettlement area. Mudzi district is situated in the northeast of the country, Gokwe lies in the northwest while Buhera and the Dewure resettlement area are in the southeast (Figure 1). The purpose of the survey was to examine the ways in which rural Zimbabweans in low rainfall regions which are susceptible to recurrent droughts cope with food shortages. In as many households as possible both the husband and wife were interviewed in order to assess gender differences in the use of such strategies. A total of 275 respondents in 194 households were interviewed, 131 men and 144 women². Of these, 94 percent stated that they had experienced a severe food shortage at some stage. The number of house-

2. Not all responses to all questions were valid. Therefore, the number of valid responses reported will differ accordingly.

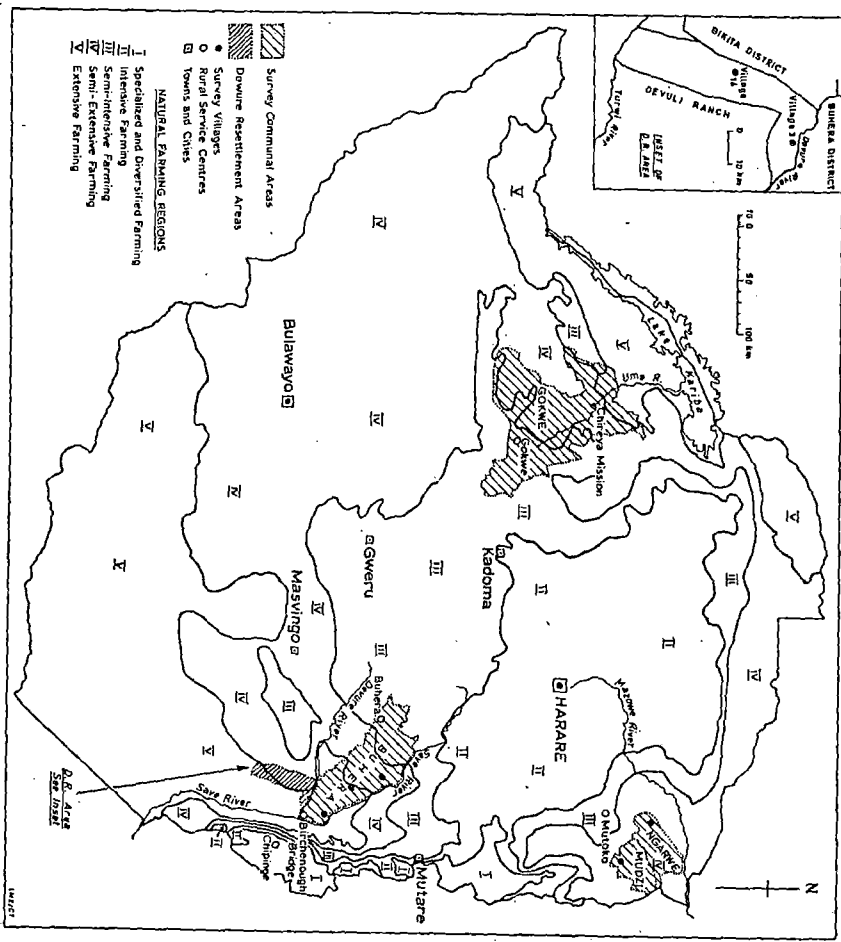


Figure 1: Location of the Seven Study Villages in Natural Farming Regions IV and V

holds surveyed in each village, as shown in Table 3, ranged from 23 in northern Buhera and eastern Mudzi to 44 in Gokwe.

Theoretical discussion of the structure of coping (Watts, 1983; Jodha, 1975; Torry, 1984, 1986) suggests that differences exist between localities depending upon their physical environment and settlement history as well as within societies depending on gender, economic status and age. The seven survey villages are located in different parts of similar agro-ecological zones, in Natural Farming Regions IV and V. The two zones are characterised by low and unreliable rainfall and people within these areas are vulnerable to recurrent droughts and food shortages. Buhera and the southern parts of Mudzi district have a long history of settlement, although northern Mudzi has experienced recent in-migration in the wake of the retreating tsetse fly belt (Mudimu *et al.*, 1988). Settlement in Gokwe has occurred during the past three decades and the survey area is still experiencing considerable in-migration from other, overcrowded, communal areas (Zinyama and Whitlow, 1986). The Dewure resettlement scheme is a result of the post-independence government's programme of land redistribution from large-scale commercial white farmers to small-scale black peasant farmers (Campbell, D.J., *et al.*, 1989). Gokwe and Dewure are therefore similar in that they are areas of recent settlement, unlike the other two districts.

The survey villages are discussed in detail in Matiza *et al.* (1989) and Campbell, D.J., *et al.* (1989) for Dewure and Gokwe and in Mudimu *et al.* (1988) for Mudzi and Buhera. Three villages were selected in the areas of recent settlement, two (Villages 3 and 14) in the Dewure resettlement scheme and the third near Chireya Mission in Gokwe district (Figure 1). Four villages were selected in the long settled areas, two in Mudzi district³ and another two in Buhera. Today, the two districts of Buhera and Mudzi are characterized by above average population densities (Zinyama and Whitlow, 1986; Republic of Zimbabwe, 1984), severe land shortage and environmental degradation (Whitlow, 1980a, 1988). Thus, 30% of survey respondents in these areas reported a scarcity of arable land, compared with only 4% in Gokwe and Dewure.

Other aspects of the physical environment differ between areas. Domestic water supplies are closer to the homesteads in the long settled communal areas than in areas of recent settlement. In the wet season the average time taken to obtain water in the former areas is 22 minutes, rising

3. In Mudzi district, one village is located in Ngarwe communal land and the other in Mudzi communal land. In this paper, the two villages are referred to as western Mudzi and eastern Mudzi respectively (see Figure 1). An administrative district may comprise one or more communal lands.

to 28 minutes in the dry season. Comparable figures for the latter areas are 42 and 95 minutes respectively. Other significant aspects of the environment are soil erosion and the supply of fuelwood. The latter is a severe problem in the long settled densely populated communal areas where trees have been cut to make way for cultivation and building as well as firewood (Whitlow, 1980b; Zinyama, 1988b; Munzwa, 1979). Deforestation and the expansion of cultivation onto marginal lands have, in many cases, given rise to accelerated soil erosion and extensive gullyng in both grazing and arable areas.

The related issues of hunger, drought, lack of drinking water and poor health were identified in both old and newly settled areas as the most serious problems in the study areas (Table 2). Additional problems in Buhera and Mudzi relate to livestock diseases, inadequate transport, land shortage and the lack of schools while wildlife damage to crops (mainly by elephants in Gokwe and baboons in Dewure), poor access to shops and lack of transport services were of concern to the people in the newly settled areas of Gokwe and Dewure.

The villages selected for the study of strategies for coping with food deficits were therefore appropriate ones. Hunger, drought and associated concerns with water supply and health confront the population. The survey was conducted during the 1987-88 growing season. Crop production during the past few years including the previous 1986-87 season had been low and thus it was an opportune time to assess people's reactions to food shortage. During the 1986-87 season, over 90% of the households in Gokwe, Dewure Village 3 and southern Buhera and two-thirds of those in Dewure Village 14 and northern Buhera had harvested less than 5 bags of maize each. Only in eastern Mudzi did average maize production reach 10 bags per household, with 29% getting more than 10 bags. Output of small grains (bulrush millet, sorghum and finger millet), which are more drought resistant than maize, provided little respite for the farmers (Table 3). It was therefore not surprising that the majority of respondents reported experiencing food shortages during the previous year though most saw the period 1983-85, and some 1947, the mid-1960s and early 1970s as having been equally or more difficult.

RESULTS AND DISCUSSION

The data from the seven villages confirm the findings from other research in Africa that coping strategies are diverse, vary from locality to locality and draw upon a variety of economic, social, political and environmental resources. These resources are deliberately built up by rural families

TABLE 2:
MAJOR PROBLEMS CONFRONTING THE POPULATION IN
THE SURVEY VILLAGES AS IDENTIFIED BY THE
RESPONDENTS

Problem	Buhera-Mudzi		Gokwe-Dewure	
	No. of respond- ents	% (N=113)	No. of respond- ents	% (N=160)
Hunger - lack of food	68	60	125	78
Drought	80	71	96	60
Lack of water - domestic and livestock use	83	74	73	46
Poor health conditions	25	22	54	34
Lack of arable land	34	30	6	4
Livestock diseases	32	28	10	6
Lack of schools	28	25	15	9
Poor transport	26	23	24	15
Lack of livestock and draught power	22	20	8	5
Shops too far	0	0	21	13
Wildlife damage to crops	0	0	23	14
Inadequate pastures	11	10	1	0.6
Lack of toilet facilities	0	0	14	9

during better years and their liquidation during periods of food shortage follows a sequence in which people first turn to readily available and relatively less costly activities. Only later do they adopt strategies which are more disruptive of the production system.

The study villages were classified for purposes of analysis into two groups depending on their history of settlement, namely the long settled Buhera and Mudzi areas on one hand and the more recently settled Gokwe and Dewure areas on the other. Such a classification is justified on at least three grounds. Firstly, research elsewhere suggests that the generosity of the physical environment in times of food shortage depends on the length or history of settlement in an area, the density of population and the extent of resource depletion. Secondly, people in newly settled areas are likely to have greater difficulty in relying on local social networks in times of deficit than those in long settled areas where well established networks exist. The two groups of people may therefore adopt somewhat different coping

TABLE 3:
HOUSEHOLD CROPPING PATTERNS AND AVERAGE YIELDS FOR PRINCIPAL CROPS IN THE
SURVEY VILLAGES, 1986-87 SEASON

Crop	Chireya, Gokwe		Village 3, Dewure		Village 14, Dewure		Northern Buhera		Southern Buhera		Eastern Mudzi (Mudzi C.L.)		Western Mudzi (Ngarve C.L.)	
	% of survey house- holds (N=44)	Yield per house- hold (bags)	% of survey house- holds (N=24)	Yield per house- hold (bags)	% of survey house- holds (N=26)	Yield per house- hold (bags)	% of survey house- holds (N=23)	Yield per house- hold (bags)	% of survey house- holds (N=28)	Yield per house- hold (bags)	% of survey house- holds (N=23)	Yield per house- hold (bags)	% of survey house- holds (N=26)	Yield per house- hold (bags)
Maize	95	2.4	92	1.2	100	8.1	78	4.8	43	1.4	100	10	100	3.6
Bullrush millet	2	1.2	92	1.7	77	3.7	87	4.9	64	3.6	30	2.2	85	2.9
Sorghum	18		25		31		17		71		13		35	
Finger millet	0	0	38	0.2	77	2.2	26	2.2	4	5 [#]	17	0.6	8	0.7
Groundnuts	5	0	58	0.3	85	6.3	74	3.3	7	0.5	57	1.6	50	2.1
Sunflowers	5	0	38	0.2	62	3.7	4	1 [#]	4	2 [#]	87	11.8	38	2.9
Cotton *	91	3.1	17	0.6	4	1.5 [#]	0	0	0	0	9	8.3	12	2.7

* Cotton output is measured in bales

[#] Only one household grew the crop

C.L. = Communal Land

strategies. Thirdly, areas of sparse population within the communal farming sector in Zimbabwe today are generally located in remote parts of the country, away from the major urban centres or other sources of formal off-farm employment. Remoteness and inaccessibility are therefore likely to limit prospects for out-migration and off-farm employment in times of food shortage, unlike in those communal areas that are more accessible to the national development corridor. However, even though similarities may be expected in the kinds of coping activity within each of the two categories of areas, differences are also likely to occur in the detailed structure of coping strategies because of their different physical and socio-economic characteristics.

(a) Economic strategies

Rural people recognise the need to accumulate economic assets such as food, livestock and cash savings which may be liquidated in times of difficulty. Both the local production system and interaction with the broader regional or national economy offer opportunities for acquisition of such resources.

The agricultural production system in all survey areas is characterized by a diversity of activity. A variety of crops is grown for consumption as well as for sale in good years. The dominant crops are maize, bulrush millet, sorghum and groundnuts, supplemented by finger millet and cash crops of sunflowers and cotton in some areas (Table 3). Livestock are an integral component of the production system. Oxen furnish draught power while all cattle, sheep and goats provide meat and milk. Animal manure is an important input in the maintenance of soil fertility and raising crop yields. Livestock are held in all villages but average herd sizes are generally small and vary both between and within villages (Table 4). The role of livestock in food production can be illustrated by the correlations between household grain production and the numbers of oxen and cattle owned ($r = 0.55$ and 0.51 respectively). The average amount of land owned, cultivated and left fallow varies considerably from village to village, with more land being available in Gokwe and Dewure than in the long settled and overcrowded areas of Buhera and Mudzi. The proportion of households having some land under fallow ranged from 77% in eastern Mudzi to only 18% in southern Buhera. The large proportion of households with some of their land under fallow in eastern Mudzi is partly due to the farmers' inability to cultivate all their arable land because of a shortage of draught power. This problem arises from the presence, until recently, of tsetse fly, especially in the northern parts of the district (Mudimu *et al.*, 1988). In Chireya, Gokwe,

nearly one-third of the arable land was fallow during the 1987-88 season for similar reasons, namely the shortage of draught cattle due to the presence of tsetse fly until recently, coupled with landholdings that are too large to be cultivated by hand. Not surprisingly, average cattle herds were lowest and the proportions of families without draught animals or cattle generally were highest in Gokwe and eastern Mudzi.

TABLE 4:
AVERAGE NUMBER OF LIVESTOCK OWNED AT THE TIME
OF THE SURVEY, 1988

Crop	Vil.3		Vil.14		N.	S.	E.	W.
	Gokwe	Dewure	Dewure	Buhera	Buhera	Mudzi	Mudzi	
Draught oxen	1.3	2.0	3.7	1.9	2.5	1.3	1.8	
All cattle	3.6	6.7	11.2	5.7	11.4	3.9	4.3	
Goats	8.3	3.3	3.1	5.6	11.4	2.5	2.5	
Donkeys	0.8	nil	nil	(a)	(a)	(a)	1.2	
% of households without oxen	63.6	20.8	0	34.8	35.7	59.1	34.6	
% of households without cattle	63.6	16.7	0	34.8	28.6	50.0	23.1	

(a) only one household had donkeys.

On-farm production is a major contributor to food security during periods of shortage. Fifty-eight percent of families reported having some food in storage at the onset of the prevailing shortage and this, together with whatever was purchased, provided the bulk of their food during the initial phases of the shortage. As the situation worsened, the stored food was depleted and recourse to purchased maize or maize-meal and government drought relief programmes in the form of either free food distribution or food-for-work took place. Respondents reported a wide variety of means of raising cash to purchase food. The sale of livestock, use of cash savings and local off-farm employment on contract work were important in all areas. In Buhera and Mudzi the sale of traditional beer was widespread as was that of crafts (mainly reed mats and wooden household utensils) based on the exploitation of locally available forest resources in Gokwe and Dewure (Matiza *et al.*, 1989).

In western Mudzi, illegal panning for alluvial gold along the banks of the nearby Mazowe River to the north is another important source of cash for rural households. This is usually carried out during the dry season when

there is less work on the lands and the river is low, but it assumes greater significance in drought years. Thus, 33% of the resident population without formal wage employment who reported being engaged in some other income generating activity outside agriculture during 1987 were involved in gold panning. It was the most common source of cash for them, followed by local contract work (32%) and beer brewing for sale (10%).

While many coping strategies are based upon resources available within the village, other villagers access opportunities for raising cash beyond the village. Labour migration is an important source of revenue. There are two categories of migration. The first is long-term migration not necessarily stimulated by food shortage and the second is that undertaken as a direct consequence of a food crisis.

The first category has been widely documented throughout Africa and is an essential component of the national economy in Zimbabwe (Bush and Cliffe, 1984). Sixty-five (33.5%) of the 194 sample households reported having at least one member who had migrated from the village in search of wage employment. Eight-four percent of migrants were males (52% heads of households and 25% sons) whose average age was 32 years. Nearly all had some education with an average of 5.5 years at school and 47% had completed primary school. In terms of occupation, the most common categories reported were domestic workers (30%) and jobs in mining, building trades and the security forces, with 12% each. Fifty (77%) of the sixty-five families who reported having migrants were in the two long settled areas of Buhera and Mudzi. This reflects two forces. Firstly, the regulations governing the resettlement schemes, including the two villages in Dewure, require the heads of households to be permanently resident on the scheme, thus limiting their prospects for labour migration. Secondly, as regards Chireya, remoteness and distance from the main centres of employment are major factors limiting the propensity of the people to migrate.

Migration is viewed as a means of diversifying the family's income earning opportunities. However, in the study villages only 52% of the families with migrants received remittances in either cash or goods. The impact of cash remittances upon strategies used to cope with food shortage is difficult to assess in detail given the small number of households reporting such remittances. However, some indication of their impact can be provided. Those not receiving remittances resorted to a much wider range of sources to acquire food during the shortage than did those receiving cash from migrants. This is to some extent due to the fact that overall grain production and storage tended to be higher for the latter and also because they had cash from remittances to purchase food. Those not receiving remittances reported using stored grain and purchasing food, but they also

looked to gifts from relatives, government food-for-work programmes, the sale of crafts and beer and the collection of wild foods as means of obtaining food. (This category included households with female heads, i.e. widows and divorcees, as well as those where the husband was away but unemployed).

Those families whose migrants send no remittances, in either cash or goods, tend to cultivate less land than those declaring receipt of remittances and on average they own fewer cattle and oxen. Their grain output is lower than that of households receiving remittances or those without migrants. These families rely on a wider variety of local resources and government assistance for food in times of hardship. Important sources of cash are gifts or loans from relatives, the sale of crafts and local labour away from their own fields and, as the shortage intensifies, greater recourse to the collection of wild foods and a higher dependence on the government for food than other families.

There are also differences between recipients and non-recipients of remittances in the types of food eaten during times of shortages. Early in the shortage their food consumption patterns are similar. Grains, mainly maize, millet and sorghum, are eaten by all and the use of wild foods and meat are reported by only a few households. As the shortage intensifies the consumption of meat from the villagers' own livestock (some of which will be dying from lack of water) increases in both groups and those reporting the use of wild foods nearly doubles to 41% of families among those not receiving remittances while remaining unchanged among those that do (17% of families).

These data suggest that cash remittances assist families in staying out of debt to others, reduce their need for assistance from food-for-work or other public food transfer programmes and enable them to survive without recourse to wild foods. Labour migration is thus an effective economic strategy for those families who receive cash remittances. It also appears that where migration fails to produce remittances, families find themselves in more difficult circumstances than they might otherwise have been if no migration had taken place. The labour taken off the farm is not producing a compensatory cash return and indeed more labour has ultimately to be diverted from own household food production to the collection of wild foods and labour on land or tasks of other households.

(b) Social responses to food shortage

Reciprocal arrangements for the sharing of available resources through the gift or loan of cash, food, labour and so forth between relatives and friends have been documented as an important coping strategy in Africa

(Laughlin, 1974; Cashdan, 1985). The survey data confirmed this finding for Zimbabwe. Out of 271 respondents, 39% reported giving such help to relatives and friends and 34% reported receiving it. While the frequency of reporting of help between members of the community does not differ between survey areas, there is a striking contrast as to who is involved. In the two long settled areas, such exchanges are almost entirely (97%) between relatives while relatives (67%) and friends and neighbours (33%) were reported in the newly settled areas. This difference can be explained in terms of the longevity of settlement in the two areas. In the latter areas, resettlement will have weakened traditional extended family bonds and created a situation where interaction between different families is more common and forms the basis for mutual assistance in times of need. In the former areas, where settlement is long-standing and family networks are well established, supportive relationships involving food exchanges with people outside the extended family are less frequent. The findings of this survey contrast with those of Bratton (1987) in other locations in Zimbabwe. He found family relations as unimportant, being reported by only 9% of his sample, having been replaced by assistance gleaned from membership of local farmer organisations.

The patterns of interaction are illustrated in Table 5 which demonstrates exchanges between relatives. Between one-third and two-thirds of the transactions reported were in the form of gifts or loans of food, with such exchanges being more prevalent in the newly settled areas. When the respondents were asked to identify their three most important sources of food during the recent shortage, 21% identified food from relatives. In many cases the shared food had been held in storage from a previous harvest. Although most of the households with food in storage (ie. 50% of the sample) used it for consumption within their households, 25% reported having given or sold some to relatives.

Other sources of assistance include looking after relatives, including the practice of 'kukwata' (i.e. uninvited guests who come for meals) which was reported by some of the respondents, the sharing of labour, and the gift or loan of cash. Another social adjustment to food shortage reported by 10% of the households was to remove children from school. The most frequent explanation was the lack of school fees, although in one village in Dewure hunger and the lack of food to sustain the children during the long school day were given as the immediate reasons.

(c) Environmental strategies

The collection of 'famine foods' – roots, berries, wildlife – during periods of food shortage is widely documented in Africa (Brokensha and

TABLE 5:
PATTERNS OF RECIPROCITY AMONG RELATIVES DURING
TIMES OF FOOD SHORTAGE
 (as a % of items of assistance given or received)

Items exchanged between relatives	Buhera-Mudzi		Gokwe-Dewure	
	Given to: (N=60)	Received from: (N=59)	Given to: (N=117)	Received from: (N=74)
Gift/loan of food	38	29	51	65
Look after relatives	15	20	20	8
Gift/loan of cash	13	15	12	9
Sharing labour	18	20	9	8
Gift/loan of livestock	7	12	6	7
Gift of clothing	8	3	2	3

and Riley, 1986; Campbell, A., 1986; Campbell, B.M., 1986, 1987; Malaisse and Parent, 1985). In a survey of the use of wild fruits in the Condo area encompassing the extreme northern part of Buhera, the adjacent Zviyambe small-scale commercial and the Romsley resettlement areas conducted in 1983, Bruce Campbell (1986, 1987) reported the widespread use of wild foods. However, he noted that they played a minor role in the diet and were used primarily as a supplementary source of food, despite the fact that the survey was carried out at a time of food shortage. He suggested that the lack of dependence on wild fruits in the area was

not related to a lack of wild fruits in the environment ..., but is more likely a consequence of the extensive drought-relief programme of the Government after the 1982/1983 drought. That programme reached almost every household in the study area (Campbell, B.M., 1986, p.42).

Recourse to famine foods by the respondents in this survey differed markedly from area to area. The collection of wild foods was seldom reported as important in the Buhera and Mudzi areas (26% of respondents) while in Gokwe and Dewure 52% reported their doing so. In the latter areas, wild foods were used throughout the shortage and became the second most important food source after maize as the shortage intensified. The most commonly reported famine foods are fruits and berries which are either eaten raw or cooked. Utilisation of wild foods is related to their availability

in the dense bush and forests of Gokwe and Dewure, coupled with the poor provision of shops where maize-meal and other foodstuffs can be purchased, unlike in areas with a long history of settlement and better commercial service provision.

The data collected in the present survey did not indicate the quantity of wild foods consumed. There is, however, no significant relationship between receipt of government assistance and the use of wild foods. In fact 87% of those collecting wild foods also received government assistance and 57% of those receiving government assistance also collected wild foods. It should also be noted that the ability of people to gain access to certain wild foods has declined over the years because of government restrictions on hunting in order to conserve wildlife. In both the long settled and newly settled areas, over 90% of respondents reported the existence of wild animals within their areas and over 60% reported some damage to crops by wildlife. Despite this, only 15% acknowledged that they personally had hunted small animals such as rodents and rabbits and only three people had hunted larger animals. When asked if they knew people who hunted, 20% knew people who had hunted small animals and 7% large animals. Given the complaints about the damage to crops caused by wildlife and the scarcity of food, it is likely that the reported incidence of hunting is an underestimate, particularly in Dewure and Gokwe where wild animals are still plentiful. Enforcement of the regulations against hunting would lead people to be cautious about admitting to it, although during the fieldwork in one village the authors witnessed the considerable excitement created by the presence of a herd of impala in the bush nearby.

(d) Strategies based within political and community structures

Access to assistance from community organisations is seen as an increasingly important option. While government famine relief activities were instituted early in the colonial period, since independence the government has made major efforts to assist the rural population. Government activities include the distribution of free food and food-for-work programmes designed to relieve acute situations, as well as the provision of agricultural and family nutrition extension services and encouraging participation in local farmer organisations as a means of attaining household food security through increased output.

The most important community organizations active in the survey areas were churches, local farmer organizations as well as membership of the ruling political party ZANU-PF. Both men and women were members of churches and farmer organisations while active participation and leader-

ship positions in ZANU-PF were dominated by men. The benefits from these organizations with regards to the attainment of household food security differ from one to the other. Over 90% of the respondents saw no direct benefits in this regard from membership of ZANU-PF and nearly 50% reported no benefits from church membership. The greatest advantages were seen to derive from membership of farmer organisations which people saw as directly helping them to improve their farming practices, a finding which confirms Bratton's (1987) data.

While in some cases churches did assist families in need, the government's food distribution and food-for-work programmes were seen as the most important sources of external support during a food crisis. Free food distribution at some point during the shortage was reported in all the survey villages and food-for-work activities were available in three. Ninety-six percent of families in Buhera and Mudzi and 82% in Gokwe and Dewure reported some form of government assistance in recent years.

(e) The sequence of responses

A common finding of research on coping strategies is that people resort to them in an identifiable sequence in which those which involve little disturbance of the family's lifestyle are turned to first while more onerous ones are used with increasing food insecurity (Cassanelli, 1982; Watts, 1983a; Colson, 1979). Coping involves two basic phases. The first is the build up of resources and the second is their use. Production strategies involve a variety of measures designed to increase food output. These include mixed cropping, livestock production, manuring of the soil and fallowing. They permit farmers to accumulate assets in good years and to conserve the productive properties of the physical resources to maintain their long-term capacity. A decline in the productivity of these resources signals a potential problem. In the survey areas, evidence of an impending shortage is first seen in factors affecting production, notably late or scanty rains and the stunted growth of plants. With lower production, stored food is used and once stocks diminish people begin to take other actions, or coping strategies, to maintain household food supply.

The survey indicated that there is a sequence of adoption of strategies for coping with food shortages although some, notably the sale of one's labour either locally or through circulatory labour migration, were active throughout the shortage. In the long settled areas, during the early phases of the shortage, people obtain cash or grain from relatives, reduce their daily food consumption, and purchase grain or maize-meal. As circumstances worsen so the sale of small livestock and of beer, and to a lesser extent crafts,

provide income and lastly widespread livestock sales, the sale of belongings and government assistance are resorted to. In the newly settled areas, the early dependence on the sale of labour locally is supplemented by the sale of crafts and small livestock. This pattern is maintained as things get worse until in the most difficult situations livestock sales accelerate, people seek help from friends and relatives and great dependence is placed on government relief programmes.

That the details of the sequence differ both between regions and within villages (the latter due to differences in gender, socio-economic status, etc.) confirms the view that understanding of coping strategies requires very close investigation at the village level. The combination of population density, agricultural practices, physical resources, and political and community involvement creates different opportunities and vulnerabilities from place to place. These are reflected in the variety of environmental, political, social and economic strategies adopted from place to place and in their sequence of adoption.

(f) Changes in response patterns over time

A feature of the responses was the change in agricultural production and coping strategies consequent upon the most recent experience of food shortages during the early and mid-1980s. Many farmers reported that they had already recently altered, or were in the process of altering, their cropping patterns. Both the crops at issue and the reasons for the change varied between survey villages and between men and women. The planting of more land and crops, and greater attention to them in the field, were the most frequently reported responses for guarding against future shortages. This was anticipated to result in greater amounts of food in storage. The most frequent crop mentioned in this context was maize, followed by millet and sorghum and to a lesser extent sunflowers and groundnuts.

The primary reasons given for wanting to increase crop production are to increase household food supplies and, when surpluses do occur, to sell them for cash. In selecting crops to meet these objectives farmers are clearly influenced by crop characteristics. Maize is seen as having a high yield, being less vulnerable to bird damage and having a higher cash value. Small grains, on the other hand, are met with mixed views and some caution. Many, primarily men, favour them as quick-growing drought resistant crops. For the women, however, they are labour intensive crops both in the field – weeding, harvesting and threshing, and bird scaring – and at home during food preparation. Nonetheless, many respondents anticipated replacing maize with small grains in the near future.

Other responses included the search for opportunities for creating capital reserves, either in livestock or cash. The dominant activity for achieving this is labour migration. This reflects an ongoing pattern of change. In the past hunting, fishing, the gathering of wild foods, together with labour migration, were very important. The expansion of cultivation, especially in areas with a long history of settlement, has reduced the wild food habitat while legal restrictions on hunting have reduced the availability of meat from the wild. In this context, dependence on off-farm labour and cash-earning agricultural activities have assumed even greater importance.

CONCLUSION

This study has demonstrated that a variety of strategies are used by rural Zimbabweans to offset conditions of food deficit. These are similar in structure to those found elsewhere in Africa. They are based upon the explicit recognition of social, economic political and environmental resources which are then used, in an identifiable sequence, to reduce the impact of food shortages. The specific strategies have changed over time. Some, for example hunting, have declined in importance, while others, such as labour migration and access to food-for-work programmes, have become more important. The survey also revealed differences in the nature of the strategies between areas with a long history of settlement and more recently settled areas. Settlement history, demographic and social conditions and geographical location relative to the modern economic sector are important explanatory factors for these differences.

The findings emphasize that coping strategies are integral components of agricultural production systems. As such they are vulnerable to induced development activity. The evidence is that as Zimbabwe's development context has changed so have the opportunities for relieving food deficits. One of the opportunities available is labour migration. The results question the effectiveness of this strategy in a situation of growing urban unemployment and suggest that rather than being a panacea its success is contingent upon the migrant earning sufficient amounts to be able to send remittances, and also being willing to do so. Those families with migrants who do not, or are unable to, send remittances tend to be among the most vulnerable to food shortage. On the other hand remittances do indeed improve a family's ability to weather a period of difficulty. Government food transfer programmes therefore need to be more carefully designed and sensitised to differentiate between those households receiving remittances and those without.

A finding which confirms that of Bruce Campbell (1986, 1987) in Zimbabwe and work done elsewhere is that while wild foods are still collected

by many, their importance is declining. This reflects a more general trend towards decreasing resort to locally available sources of support and greater dependence upon exogenous means of coping, such as migration and government relief programmes. Hunting in particular has declined in importance as a coping strategy because of government restrictions as well as the reduction in the habitat that is available for wild animals.

This study also has a number of policy implications. Firstly, rural development planners should recognise that a substantial measure of food security in times of hardship is derived from sources other than migration and government-sponsored relief activity. The agricultural system includes risk-averting mechanisms which, if undisturbed, can intervene to prevent a deficit in food production becoming a crisis. To the extent that this occurs, these actions relieve the government of the heavy financial and manpower costs of relief operations. Development planners and relief agencies would, therefore, be advised to note the basis for these coping strategies and to avoid innovations and interventions which would reduce their efficacy without providing alternative means of support. The impact of past interventions has been uneven; in some cases food security has been enhanced while in others it has been eroded. The general trend towards dependence upon exogenous rather than local sources of support should be viewed with concern as it increases both the costs to the national economy and the external dependency, and perhaps even the vulnerability, of local production systems.

A related policy issue concerns the efficacy of seeking off-farm employment as a coping strategy. To be successful a migrant must find a job at an income level which can generate remittances. Such opportunities are not ubiquitous and yet migration continues to be viewed as an appropriate option by rural people. Periods of food deficit, therefore, witness an increase in the flow of migrants to urban areas, exacerbating the conditions of crowding, underemployment and unemployment which characterise Zimbabwe's principal urban areas. In the absence of a vigorous focus upon maintaining and improving the capacity of rural areas to provide food security at the local level, the government is likely to be confronted with the twin problems of perennial demands for rural relief programmes and accelerated growth of impoverished urban populations.

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