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**Socioeconomic Stress, Health and Child
Nutritional Status in Zimbabwe at a Time
of Economic Structural Adjustment**

A three-year longitudinal study

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Preface

This report presents the findings of the first three years of a research project which is entitled *Health and Structural Adjustment in Rural and Urban Settings in Zimbabwe*. The project officially started in May 1993 and is currently in its fourth year of operation. It is funded by the Nordic Africa Institute in Uppsala, Sweden as an integral part of a research programme on *The Political and Social Context of Structural Adjustment in Sub-Saharan Africa* which was launched in October 1990.

The results of the first year of project operations were published by the Nordic Africa Institute in 1995, along with two other research papers related to structural adjustment in Zimbabwe. A year later, another publication came out, comprising the results of the first two years of the project (Bijlmakers, Bassett and Sanders, 1996).

The current report is mainly based on the results of three years of follow-up among households in one urban and one rural area. The introductory chapter gives an overview of structural adjustment in Zimbabwe and reviews the country's performance in the economic and social sectors before and in the early stages of adjustment (up to 1993). Chapter 2 explains the methodology employed to study socioeconomic changes, as well as changes in health and health-seeking behaviour at the household level. Chapter 3 describes the changes in households' social and economic situation observed during the three years of follow-up (1993 to 1995). Chapter 4 describes the changes in illness patterns and health-seeking behaviour of these households over the same three years. Changes in the nutritional status of the children belonging to the same households are presented and analysed in Chapter 5. Chapter 6 describes trends in the utilisation of health services over the period 1991 to 1995. The data for this analysis come from the regular health information system of the hospitals and clinics in the two areas where the household surveys were conducted. Chapter 7 discusses the findings and puts them in the context of the macroeconomic and social changes that have taken place since 1993. The findings are also related to other literature, and finally some conclusions are drawn.





Tribute

Ms. Engena Muzivi, who worked for three-and-half years on the project as a research assistant, died under tragic circumstances in November 1996. She died of complications of a condition that required medical attention that she did not receive.

Long-standing grievances of health workers over their conditions of service led nurses and junior doctors to go on strike. The government dismissed all those involved in the strike and closed down two of the major referral hospitals in the country.

Engena's death could have been avoided if she had received the medical care that she needed.

We feel very sad for her and her family and would like to take this opportunity to pay tribute to her for all the work she did on this project.



Map of Zimbabwe



Abbreviations

AIDS	Acquired immuno-deficiency syndrome
ANC	Antenatal care
ARI	Acute respiratory infection
CPI	Consumer price index
CSFP	Child Supplementary Feeding Programme
CSO	Central Statistical Office
DHS	Demographic and Health Survey
EPI	Expanded Programme on Immunization
ESAP	Economic Structural Adjustment Programme
ETP	Employment and Training Programme
GDP	Gross domestic product
GOZ	Government of Zimbabwe
HIV	Human immuno-deficiency virus
IMF	International Monetary Fund
MMB	Medicus Mundi Belgium
MOHCW	Ministry of Health and Child Welfare
MRCZ	Medical Research Council of Zimbabwe
NGO	Non-governmental organisation
PAAP	Poverty Alleviation Action Programme
RHC	Rural health centre
SAP	Structural Adjustment Programme
s.d.	standard deviation
SDA	Social Dimensions of Adjustment programme
SDF	Social Development Fund
STD	Sexually transmitted disease
SWP	Social Welfare Programme
TB	Tuberculosis
WB	World Bank
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USD	United States Dollar
UZ	University of Zimbabwe
ZWD	Zimbabwe Dollar

1. Introduction

1.1 Background

Structural adjustment in Zimbabwe

The Economic Structural Adjustment Programme (ESAP) was formally introduced in Zimbabwe in October 1990, but started in earnest in March 1991 after a meeting with foreign aid agencies and the World Bank in Paris. The framework of ESAP was spelled out in the January 1991 document, *Zimbabwe: A Framework for Economic Reform (1991–95)*. The ESAP package, as outlined in this document, contains the standard features of IMF/World Bank economic reform strategies, including, (GOZ, 1991a): a reduction of the budget deficit through a combination of cuts in public enterprise deficits and rationalisation of public sector employment; trade liberalisation, including price decontrol and deregulation of foreign trade, investment and production; phased removal of subsidies; devaluation of the local currency; enforcement of cost recovery in the health sector and introduction of cost recovery for education.

Economic indicators

Between independence in 1980 and 1991, the performance of the national economy fluctuated considerably. In the immediate postindependence period, Zimbabwe's real income as measured by the gross domestic product (GDP) per capita rose to a peak of ZWD 484 in 1981, fell slightly to ZWD 477 in 1982 and then declined further to fluctuate around ZWD 453 until 1990. Average real earnings in the formal sector (excluding agriculture) rose from ZWD 2213 per annum in 1979 to a peak of ZWD 2758 in 1982. After that, they declined to ZWD 2091 in 1987 (Loewenson *et al.*, 1991). The boom in the first two to three years after independence was clearly followed by a stabilisation period that lasted until 1990, when the real per capita income was about the same as that in 1980. Some of the economic indicators for Zimbabwe for the period 1988 to 1993 are summarised in Table 1.1.

It was unfortunate that a severe drought, the worst this century, hit the country in 1991/92. The maize harvest was reduced by over 80 per cent compared with previous years. As a result, Zimbabwe was forced to resort to imports and food aid for its grain requirements. The reduced agricultural output also caused shortages in agro-industrial sectors. Combined with water and electricity shortages, reduced consumer demand and high interest



rates, this resulted in a 7.7 per cent fall in real GDP for the year 1992 and a 10.5 per cent decline in real GDP per capita (GOZ, 1993b). Following the drought, the World Bank estimated that it would take three to four years before Zimbabwe would regain to its 1990 per capita income levels, even if the rains continued to be good. During 1993, a partial economic recovery occurred. Real GDP officially rose by 1.7 per cent, but this still implied a net economic contraction since the start of the ESAP (Gibbon, 1995).

In accordance with the aims of the ESAP, the Zimbabwe dollar was devalued against all major foreign currencies. The biggest devaluation came in early 1993, when the local currency was allowed to depreciate by 35 per cent over less than three months. In August 1992, subsidies on super-refined maize meal were completely removed while those on roller meal and bread were reduced. In June 1993, maize marketing regulations were liberalised and the last subsidies on maize meal and bread were removed, after which bread riots broke out in some urban areas.

Table 1.1 shows that the official inflation rate had increased to 46.3 per cent in 1992, whereas the inflation rate for food was estimated at 72.6 per cent. For 1993, the figures were estimated at 20.0 per cent and 24.5 per cent respectively (GOZ, 1993b).

Table 1.1: *Economic indicators for Zimbabwe (1988–93)*¹

	1988	1989	1990	1991	1992	1993
Domestic product:						
Real GDP (1990, in million ZWD)	4,143	4,332	4,426	4,641	4,284	4,357
Real GDP per capita (in ZWD)	453	459	455	462	413	407
Prices (1980=100):						
CPI (December) ²	281.8	321.9	377.8	489.6	716.4	834.2
Inflation rate	302.0	14.2%	17.3%	29.0%	46.3%	20.0%
Food CPI		364.7	435.4	572.2	984.5	1,182
Food inflation rate		17.3%	19.4%	31.4%	72.6%	24.5%

¹ adapted from GOZ, 1993b

² Consumer Price Index

Social indicators

Government commitment to maintaining mass access to health services in Zimbabwe was beyond question in the 1980s. This policy of consistent real increases in public financing of health services could not, however, be sustained under conditions of the ESAP. Although the share of government expenditure allocated to the health sector was kept at around the level main-

tained during the 1980s (about 6 per cent, 5.9 per cent for the 1993/94 fiscal year; GOZ, 1993b), the pressure to reduce expenditure led to a significant decrease in real per capita expenditure in the early 1990s (Table 1.2). Real per capita expenditure on health had risen from ZWD 10.25 in 1980/81 to a peak of ZWD 14.78 in the 1990/91 fiscal year, despite the relatively low average annual GDP growth rate of 3.1 per cent over that period. It fell by 17.9 per cent in 1991/92 and by a further 11.5 per cent in 1992/93 (Chisvo and Munro, 1994).

Public financing of the education sector shows similar trends. Per capita real recurrent expenditure, which stood at around ZWD 38 in the late 1980s up until the 1990/91 fiscal year, fell to around ZWD 32 in the next two years. Primary education was affected more than higher education (Chisvo and Munro, 1994).

Table 1.2: *Government expenditure on health (1988/89-1992/93)*¹

GOZ Health Budget	88/89	89/90	90/91	91/92	92/93
Nominal expenditure (million ZWD)	329.0	421.4	566.8	631.4	802.5
Share of total budget	6.0%	6.5%	6.8%	5.7%	6.0%
Real expenditure (1990, million ZWD)	403.1	453.0	513.4	433.9	396.3
Real per capita expenditure (ZWD)	12.39	13.50	14.78	12.14	10.74
Change (%)	+1.9%	+9.0%	+9.5%	-17.9%	-11.5%

¹ adapted from GOZ (1993b) and Chisvo and Munro (1994)

Health status

During the 1980s, infant mortality (children under one year of age) in Zimbabwe declined from pre-independence levels of 120 to 150 per thousand live-births to 61 by 1990. Child mortality (children one to four years) declined from 40 per thousand in 1980 to 22 in 1990 (UNICEF, 1994). However, mortality figures started to rise in the late 1980s and into the 1990s, reversing the gains made in the previous decade. This trend is attributed to several factors that reinforce each other: the declining per capita expenditure on health and the declining quality of health services, the drought, the HIV/AIDS epidemic and the general deterioration in living conditions for large segments of the population.

No negative trend has been observed with respect to child nutritional status. UNICEF (1994) reports that several sources indicate that overall malnutrition levels remained remarkably consistent during the period 1989–92. The proportion of children who have a low weight for their age remained relatively high at 15 to 20 per cent in all age groups. The





proportion of *stunted*¹ children in a national random sample survey conducted in 1992 was nearly 30 per cent during the first and second years of life and between 20 and 25 per cent during the third and fourth years of life. Malnutrition is not evenly distributed throughout the country, though. It is more prevalent in the drought-prone provinces of Matabeleland North and South and Masvingo. Also, a rural child is almost twice as likely to be malnourished (as measured by mid-upper arm circumference) as a child from an urban high density area (UNICEF, 1994).

Health-service user fees

In 1991, the Zimbabwean government began to enforce the collection of user fees for health services that it had introduced in 1985. The World Bank clearly had an important bearing on this decision. In an influential report by the World Bank in 1990, it was argued that poor user-fee collection was costing the government between 2 and 4 per cent of the Ministry of Health budget. In addition, it was suggested that the share of the health budget generated by user fees could be increased from 3 per cent to as much as 33 per cent (World Bank, 1990). There is little doubt that these assessments have been far too optimistic. The system of exemptions for low-income groups was rightly criticised as too complex. Those earning more than ZWD 150 per month were made to pay for health services. Unemployed people and those earning less than ZWD 150 were officially entitled to free treatment. A letter from a local councillor or from a social welfare officer could serve as proof of eligibility for free treatment. A new regulation announced in November 1992 raised the income level for free treatment from ZWD 150 to ZWD 400 per month. Shortly afterwards, in January 1993, the government abolished fees at rural health centres and most rural hospitals in order to alleviate the effects on rural populations of the 1991/92 drought. It should be noted, though, that most council and mission clinics continued to charge fees. In June 1993, user fees were reintroduced at government rural health facilities.

Several other policy changes with regard to user fees were introduced during the course of 1994 and 1995. The most dramatic changes occurred in January 1994 when a huge increase in charges for all services was effected, and in March 1995 when fees at rural health centres were abolished. These will be described in more detail in Chapter 6, where the impact of these changes will also be discussed.

¹ A child is called stunted if it is short for its age (as indicated by low height-for-age compared to an international standard).



The government of Zimbabwe recognised that "... during the period of transition, certain population groups would be adversely affected by the changes in the economic environment ..." and it, therefore "... resolved to protect and support the vulnerable, particularly during the hardships associated with the initial phase of the ESAP ...". In this spirit, a Social Dimensions of Adjustment programme was designed. A detailed outline of the activities to be undertaken within this programme was provided in a document published in November 1991, entitled *Social Dimensions of Adjustment (SDA), A programme of actions to mitigate the social costs of adjustment*. The objectives of SDA were (GOZ, 1991b) to effectively target and design programmes for disadvantaged groups over the economic reform period, while minimising costs to the treasury by maximising participation and support from third parties, notably NGOs, employee organisations, employer organisations and local authorities.

The major areas targeted for action were employment and training; food subsidies; cost recovery and social services; and monitoring and evaluation. To coordinate the first three activities, a Social Development Fund (SDF) was established to operate two main programmes, the Employment and Training Programme (ETP) and the Social Welfare Programme (SWP). Both programmes were to be coordinated by the Social Welfare Department of the Ministry of Labour, Public Service and Social Welfare. The SWP mainly involved the targeting of subsidies for food, health and education.

While the SDF measures were intended to work as a safety net to protect the vulnerable, their implementation was hampered by a number of factors. These will be discussed in Chapter 7. Recognising that the impact of the SDF was minimal, especially in non-urban areas, the government launched a new *Poverty Alleviation Action Plan* in October 1993. The details of this plan and the implementation status to date will also be discussed in Chapter 7.

It should be emphasised here that prior to the ESAP and the social safety nets that were designed along with it, there were other measures in place that aimed at protecting people from starvation, especially those in drought-stricken areas. The biggest drought mitigation operations were the nationwide 1983/84 *Drought Relief Programme* and the *Child Supplementary Feeding Programme* (CSFP). After the severe drought in 1991/92, these programmes became operational again. In early 1993, drought-relief maize rations were distributed to 5.5 million out of the 10.4 million people living in Zimbabwe and almost 1.1 million children received supplementary feeding. Also, drought-recovery packages of maize seed and fertiliser were distributed to communal and resettlement farmers in 1993 and into 1994 (UNICEF, 1994).





1.2 Rationale for the study and methodological considerations

The relationship between macroeconomic change, including economic structural adjustment, and health has been studied in a large number of countries in sub-Saharan Africa. Evidence from many of these studies shows the negative effects that structural adjustment can have on both the health sector and on people's health status. The current project was designed with a view to monitoring and documenting the changes that took place during the structural adjustment process in Zimbabwe. Through the project, started in 1993 about two years after inception of the ESAP, an attempt has been made to collect as much data as possible that reflects the changes that have occurred since 1990/91.

The serious drought that hit Zimbabwe, as well as most other parts of Southern Africa, in 1991/92 has definitely had an impact on the government's ability to implement the ESAP. It has also complicated attempts at pinpointing the specific impact that structural adjustment has had on the population's health status and on the people's ability to cope with the ESAP. These developments raise some methodological questions. Some of the issues that must be taken into consideration in conducting research related to structural adjustment and its impact have been highlighted in an earlier publication (Bijlmakers *et al.*, 1996). While the economic reform programme in Zimbabwe was expected to have a major impact on almost every economic and social sector, it is extremely difficult to separate and attribute causality to the effects of such a programme. Therefore, the focus of research has, more feasibly, been directed at monitoring the extent and nature of change in the health sector during the period of economic reform as well as at monitoring change at the household level. The selection of indicators to be used for monitoring purposes has been based on the understanding that the economic reforms are likely to have an influence both on factors *within* the health sector (health budget, staffing levels, accessibility of services, availability of drugs, quality of services, etc.) as well as on factors *outside* the health sector (education, environment, government subsidies, food prices, etc.). In addition, changes in health services and health status were to be assessed by both *process* and *outcome* indicators. Indicators have ultimately been chosen on the basis of the criteria that they were likely to be easy to measure meaningfully and that they were likely to be indicative of immediate (although not necessarily immutable) change, particularly at the household level.



1.3 Objectives

The general objective of the research was to measure the changes occurring in health and health services during the implementation of the structural adjustment programme through the monitoring of selected indicators.

The specific objectives of the research were:

- a. To determine whether any changes occurred in employment status, sources of income, total household income, households' ability to save and indebtedness.
- b. To determine whether any changes occurred in people's health-seeking behaviour in terms of utilisation of health services and other forms of care in cases of illness, and to assess the role of factors such as cost and perceived quality of services in making choices.
- c. To determine households' food production, purchasing and consumption patterns.
- d. To identify and describe the strategies used by people to cover major expenses, specifically for healthcare.
- e. To determine the extent to which households benefited from external assistance, specifically free health services and other social welfare assistance under the Social Development Fund.
- f. To monitor the nutritional status of under-five-year-old children and, if change is observed, to identify the possible causes.
- g. At health facility level, to determine whether any changes occurred in utilisation of specific health services and to explore the possible reasons for these changes.
- h. To determine whether any changes occurred in the pattern of illnesses which patients presented at health institutions and whether any changes could be detected in mortality rates.
- i. To uncover perceptions of both the general public and professional health workers on issues related to professionalism of health workers and quality of care.
- j. To promote the utilisation of the findings of the study in policy-making at the national level, as well as in planning and management of health services at the provincial and district levels.

1.4 Study sites

To address the objectives, time series comparisons needed to be made between equivalent seasons in successive years. The research period was initially limited to two years (1993 and 1994) but was later extended to a third year (1995). The research was conducted in one urban and one rural





area. Chitungwiza was chosen as the urban site and Murehwa district was selected as the rural area.

Chitungwiza is a large conurbation situated about 30 km south of central Harare, the capital of Zimbabwe. The city was established in the mid-1970s to accommodate the rapid urbanisation resulting from the changing nature of the economy and the escalating war of national liberation. Few economic opportunities exist in Chitungwiza and many of the employed people commute to and from Harare on a daily basis. The official population of Chitungwiza, according to the 1992 census, was 274,912, of which 49.8 per cent were female (CSO, 1994). Thirty-nine per cent of the population was below 15 years of age, while only 2 per cent was 60 years or older. The activity rate, which is the rate of economically active persons among those who are 15 years or older, was calculated at 63 per cent. Of these, less than one-third were females (32 per cent). Sixty-one per cent of the economically active persons were paid employees, 13 per cent worked on their own account and 24 per cent were reported to be unemployed (the remaining 2 per cent fell into other categories). Households had 4.4 members on average and 19 per cent of households were headed by females. With respect to tenure status, it is worth mentioning that not less than 56 per cent of households in Chitungwiza were lodgers, 5 per cent were tenants and 37 per cent were owners or purchasers of the house they were occupying at the time of the census (CSO, 1994).

Murehwa district is located in Mashonaland East province, with Murehwa growth point situated about 70 km north of the provincial capital Marondera and about 80 km east of Harare. The district comprises mainly communal farming areas and a small commercial farming area (Chitowa) that are administered by a rural district council. According to the 1992 census, the population of Murehwa district was 152,505, of which 52.2 per cent were female (CSO, 1993). Forty-eight per cent of the population was below 15 years of age and 7 per cent was 60 years or older. The activity rate was calculated at 62.4 per cent. While the average household size in the district was 4.8 members, not less than 40 per cent of the households in Mashonaland East province were female-headed (CSO, 1993). This is mainly because a large group of male migrant workers stays in Harare away from their families for most of the year. Agricultural production is fairly good compared to other parts of the country but has varied much in the past few years. The estimated production of white maize in the entire district was 800,000 bags (of 91 kg) in the 1990/91 season, a mere 156,000 bags in 1991/92, when there was the severe drought, and over 1.4 million bags in 1992/93 (Agritex, personal communication). Other important crops are sunflower, rapoko, groundnuts and cotton.



Chitungwiza is served by one hospital, which is administered directly by the MOHCW, and four municipal clinics, administered by the Chitungwiza town council. Murehwa district has two hospitals, one of which is run by the Catholic mission (St Paul's hospital at Musami mission), and 12 rural health centres, of which five are run by the government, six by the rural district council and one by the mission. The district receives long-term technical and financial health-sector support from Medicus Mundi Belgium (MMB), a non-governmental organisation.





2. Methods

2.1 Research components

In terms of data sources, the research project relied on households as well as the hospitals and clinics in each of the two study areas. A baseline household survey was conducted in May-June 1993 by means of interviews in more than 300 households in Chitungwiza and another 300 households in Murehwa district. The survey was repeated in May-June 1994 and in May-June-July 1995 among the same households. The methods used are described in Section 2.2. From the hospitals and clinics, data were collected on a variety of indicators covering the period January 1991 to June 1995. Section 2.3 specifies the indicators and describes the methods used. Focus-group discussions with community members in both Chitungwiza and Murehwa district were held in 1993–94, to discover their perceptions of standards of health services, observations on any recent changes in these, ideas about the possible causes of these changes, and suggestions about what might be done at the local level in response to the situation. In addition, another series of focus-group discussions was held with the nursing staff of the clinics and hospitals in the two areas to investigate their experiences with service delivery to patients and generate ideas about possible strategies in response to negative influences on clinic and hospital functioning. The results of both series of focus-group discussions have been described and discussed in an earlier publication (Bijlmakers *et al.*, 1995). The final chapter of the current report will refer to some of the results.

2.2 Household-based study

Definition of study population

In the 1993 baseline household surveys in Chitungwiza and Murehwa district, the study population was defined as *households with one or more children aged 12 to 59 months*. Households were defined as comprising all those people who lived together for most of the week and who usually shared their meals. The restriction of the study population to households with children in the age range of one to four years was based on the assumption that under-fives are most vulnerable to adverse socioeconomic conditions in terms of their health and nutritional status. Those under one year of



age were excluded because of the technical difficulties of height measurements.

In May-June 1994, one year after the initial baseline household survey, repeat interviews were held in the same households. Households that had changed residence since the first interview and whose new addresses could be located were included in the repeat survey. The same procedures were applied in May-June-July 1995, when the survey was conducted for the third time. All interviews were conducted with adults only, i.e., those 18 years of age or older. Research assistants were instructed to encourage participation by more than one adult if possible, provided they formed part of the household. For all households involved in the study, the first, second and third interviews were conducted by the same research assistant.

Sampling

In order to draw conclusions that would be valid for the entire population of households in Chitungwiza and Murehwa district respectively, the two samples needed to be representative. The sampling methods that were applied have been extensively described in a previous report (Bijlmakers *et al.*, 1996). For both areas, sampling was of a multistage nature, combining cluster sampling and systematic sampling procedures. In Chitungwiza, wards were used as clusters, whereas in Murehwa district primary schools served as clusters. Ten wards were selected out of the total of 24 wards in Chitungwiza, and 20 schools were selected out of the total of 63 primary schools in Murehwa district. This represents cluster selection rates of 42 per cent and 32 per cent respectively. The total number of households with completed interviews in the 1993 baseline survey was 327 in Chitungwiza and 300 in Murehwa district.

Research instruments

Interviews of household members were the main research technique used to collect information in the three consecutive rounds of household surveys. Questionnaires were very comprehensive and covered the following areas: household composition and housing situation; employment status and sources of income; rural holdings; household expenditure, ability to save and indebtedness; illness episodes and health-seeking behaviour; expenses incurred in seeking treatment; satisfaction with treatment; deliveries and antenatal clinic attendance; and nutritional status of children. All interviews were administered in vernacular language (Shona), into which the questionnaires had been translated.

Apart from interviews, children's heights and weights were measured. In the 1993 baseline survey, this was done for all children aged one to four





years (12 to 59 months) who formed part of the household. In the 1994 repeat survey, measurements were taken for all children aged one to five years (12 to 71 months), thereby including those children who were too young at the time of the baseline survey, and retaining those who had had their fifth birthday. Children who would have been eligible but who were absent in 1993 were included in 1994, provided they belonged to the household. In the 1995 survey round, the same procedures were applied, extending eligibility for taking anthropometric measurements to one to six years (12 to 83 months).

Height was measured with the child standing upright on a flat surface against a wall or doorframe, using a tape measure and a wooden headpiece to make a right angle with the head held straight. Heights were read to the nearest 0.5 cm. In the 1995 survey round, the tape measure was replaced by wooden boards with fixed measures. Although the boards were more difficult to carry in the field, they were expected to increase the reliability of the height measurements. Weight was measured using a hanging scale with a pair of weighing pants. The scale had a capacity of 25 kg. Weights were read to the nearest 0.1 kg. All research assistants were provided with their own sets of measuring equipment.

Organisation of fieldwork

Five research assistants were contracted to conduct the household interviews. All five were women and had considerable prior experience in conducting household interviews for various organisations. Prior to the 1993 baseline survey, they were given a four-day training, which included pre-testing the questionnaires in the field and translating them into Shona, and practical sessions on measurement of height and weight in under-five-year-old children. In Chitungwiza, each research assistant was assigned to two wards, while in Murehwa district each was assigned to four areas. In each household, the follow-up interviews in 1994 and 1995 were done by the same interviewer who conducted the first interview in 1993.

Household follow-up and drop-out rates

The 1993 baseline survey involved 327 households in Chitungwiza and 300 households in Murehwa district. Table 2.1 shows that in Chitungwiza, 80 per cent of the original sample of 327 households were interviewed in each of the three consecutive years. For Murehwa district not less than 89 per cent of the original sample of 300 households were interviewed in all three survey rounds.



Table 2.1: *Follow-up of households in the three consecutive survey years in Chitungwiza and Murehwa district*

	Chitungwiza	Murehwa district
1993	327	300
1994	281	278 (1 household split up)
1995	266 (1 household split up)	289 (6 households split up)
all 3 years	258 (80% of original sample)	266 (89% of original sample)
1993 only	39 (12%)	7 (2%)
1993 and 1994	23 (7%)	11 (4%)
1993 and 1995	8 (2%)	22 (7%)
1994 and 1995	0	1
Total ¹	328	307

¹ Totals are more than the original samples at baseline, because some households split into two, as indicated in the table

Among Chitungwiza households, the drop-out rate was highest between 1993 and 1994: 39 households or 12 per cent of the original sample of 327. Most of this loss was due to change of residence of the households, so that very few (only eight households) were found again in 1995. In Murehwa district, a relatively large number of households were missed during the second round (in 1994): 22 households or 7 per cent of the original sample of 300. However, the third survey round in 1995 had a better follow-up, with 289 completed interviews. This was achieved through extra incentives for the research assistants who conducted the interviews.

In the majority of households, the interviews were held with one female adult, usually the mother of the children whose height and weight measurements were taken. In other interviews, men or other women were involved. Table 2.2 shows the average number of adults per household that participated in the interviews, as well as the share of women among the interviewees.

Table 2.2: *Number of adult participants in household interviews by year and by area*

	1993	1994	1995
Chitungwiza			
Average no. of people interviewed per household	1.3	1.2	1.2
Proportion of females among interviewees	78%	83%	83%
Murehwa district			
Average no. of people interviewed per household	1.4	1.3	1.5
Proportion of females among interviewees	85%	81%	83%





Follow-up and drop-out of children

Table 2.3 gives an overview of the number of children whose height and weight measurements were taken in the three consecutive survey years. The criterion for selection during the baseline survey in 1993 was that the children had to be between 12 and 59 months at the time of measurement. In the two subsequent years *new children* were taken, involving those who had become old enough to be included, as well as those who had joined the household since the first interview and the ones who had been absent in 1993 and/or 1994. Once children were included in the sample, they continued to be included. Thus, the age criteria for inclusion in the sample were as follows:

- 1993: age 12 to 59 months (one to four years)
- 1994: age 12 to 71 months (one to five years)
- 1995: age 12 to 83 months (one to six years)

Of the initial 368 children in Chitungwiza who were included in the baseline, 52 per cent had their measurements taken in each of the three survey years. In Murehwa district, this was 59 per cent.

Table 2.3: *Follow-up of children for anthropometric measurements in the three survey years in Chitungwiza and Murehwa district*

	Chitungwiza	Murehwa district
1993	368	365
1994	273	299
1995	302	378
all 3 years	190	216
% of 1993 sample	52%	59%

Follow-up rates of children were much lower than those of households. This was because many children moved to other households in the course of the study period, either permanently or temporarily. This movement was from their parents to their grandparents or uncles and aunts and vice versa.

2.3 Clinic-based study

Apart from the longitudinal study among households, the research project included an analysis of data on specific parameters at clinics and hospitals in Chitungwiza and Murehwa district with a view to highlighting changes or trends over time and exploring the reasons for these changes or trends. Two sets of indicators based on clinic data were considered important for the



study. First, the utilisation of specific services by both outpatients and inpatients was considered important, because changes in utilisation of services may either indicate that the need for these services changes over time or that certain factors influence people's choice to use the services. Health-service utilisation is reported by each health institution on a routine basis. It is measured in terms of the number of patients per month who visited the clinics and hospitals for specific services. The data that were collected and analysed covered a period of four-and-a-half years, from January 1991 to June 1995. For outpatients the following services were included:

- general outpatient clinic attendance;
- antenatal clinic attendance by pregnant women, and
- deliveries.

For inpatient services, data were collected on:

- hospital admissions, and
- the average length of stay of patients (in days).

A second set of indicators based on clinic data that was included in the study concerns mortality. Three indicators were used:

- maternal mortality
- stillbirths, and
- neonatal mortality.

Initially, the intention was also to analyse data on reported morbidity or the number of specific diseases for which treatment was sought from the clinic or hospital. However, this did not prove to be feasible, mainly because the clinic-based data were considered not reliable enough (due to differences in diagnostic skills among health staff and differences in reporting styles), but also because the reporting system does not include any indication of the seriousness of disease. An exception was made for malnutrition, as it was considered feasible and useful to try to detect changes in this indicator and compare the trends with the results of the household-based anthropometric measurements.

Data on the above indicators were collected directly from the officers responsible for the health information system in Chitungwiza and Murehwa district respectively. This was done on a yearly basis, using formats in which the data were reported by month. The results of the analysis of clinic-based service utilisation and mortality are presented in Chapter 6. The clinic-based malnutrition data are presented in Section 5.3.



3. Changes in households' social and economic situation (1993–95)

3.1 House ownership and household mobility

House ownership, which was investigated in the 1993 baseline survey, was reported by 25 per cent of the households in Chitungwiza and 84 per cent in Murehwa district. About two-thirds of the Chitungwiza households in 1994 were paying rent, compared to just 1 per cent of the Murehwa district households.

The 1993 survey also showed that 55 per cent of the households in Chitungwiza and 81 per cent of those in Murehwa district had not changed residence since 1990. Not less than one-third of the households in Chitungwiza (34 per cent) and 10 per cent in Murehwa district had changed residence in the 18 months prior to the survey (since 1 January 1992). This shows that household mobility is much higher in Chitungwiza than in the rural area. Table 3.1 shows the mobility of households during the 12 months prior to the three survey rounds. The figures for 1994 and 1995 could be underestimated, especially for Chitungwiza, as some of the households that were not followed up in the second and/or third rounds could have moved to another residence.

Table 3.1: *Households changing residence in the 12 months prior to survey by year and by area*

	1993 ¹	1994	1995
Chitungwiza	(N=327) ±24%	(N=281) 23%	(N=266) 13%
Murehwa district	(N=300) ±6%	(N=278) 3%	(N=289) 4%

¹ Data for 1993 are estimates derived from households' reported length of stay at their addresses at the time of the interviews

About one-third of those who changed residence in Chitungwiza between 1993 and 1995, said they had been able to move to a place which was larger or had better facilities than their former residence. Another third indicated their housing situation had become worse, in most cases because they could no longer afford the rent. For the remaining third, the reason for changing

residence did not become clear, nor was it revealed what the change meant in terms of living conditions.

3.2 Household demographic characteristics

Household composition in the three consecutive survey years is given in Table 3.2. It shows that the Chitungwiza households became slightly bigger, whereas the Murehwa district households first grew and then became smaller. The child/adult ratio of around 1.2 in Chitungwiza is much smaller than in Murehwa district, which was calculated at nearly 1.7.

Table 3.2: Mean household composition in Chitungwiza and Murehwa district by year

	1993	1994	1995
Chitungwiza	(N=327)	(N=281)	(N=266)
members per household	5.84	5.93	6.06
adult women	1.45	1.48	1.52
adult men	1.25	1.24	1.25
children below 18 yrs	3.14	3.21	3.31
child/adult ratio	1.16	1.18	1.20
Murehwa district	(N=300)	(N=278)	(N=289)
members per household	5.97	6.08	5.80
adult women	1.44	1.42	1.36
adult men	0.81	0.87	0.81
children below 18 yrs	3.72	3.78	3.63
child/adult ratio	1.65	1.65	1.67

Inter-household mobility is in fact larger than the table suggests. Between 10 and 20 per cent of the households in both areas had members leaving as well as new members joining, with the total number remaining unchanged.

From the 1995 survey data, it was calculated that 5 per cent of the adults in Chitungwiza were 60 years or older, compared to 12 per cent in Murehwa district.

More than one-half of the households in Murehwa district were headed by females, as shown in Table 3.3. De facto female-headed households, where the husband is not a regular member of the household, were more common (62 per cent) than *de jure* ones (38 per cent), where there simply is no husband because the women are either widowed or divorced. In Chitungwiza, only about one-sixth of households were headed by females, but unlike the rural area, the *de jure* female-headed households outnumbered the de facto ones (70 versus 30 per cent).



Table 3.3: Male -and female-headed households in Chitungwiza and Murehwa district (1995)

	Chitungwiza	Murehwa district
Head of household	(N=266)	(N=289)
male	222 (83.5%)	141 (48.8%)
female	44 (16.5%)	147 (50.9%)
child	0	1 (0.3%)
Female-headed households		
<i>de jure</i>	31 (70%)	56 (38%)
<i>de facto</i>	13 (30%)	91 (62%)
Female-headed households		
with one or more male adults	18 (41%)	36 (24%)
with no male adults	26 (59%)	111 (76%)

Of the female-headed households in Chitungwiza, 41 per cent did have one or more male adults, whereas in Murehwa district this was only 24 per cent. This situation did not change after the baseline survey in 1993.

One household in Murehwa district no longer had any adults in 1995. Since the first interview in 1993 the parents had divorced. The father had sent away his wife and their youngest child and he had found employment in Harare. Four children, between seven and 14 years, were staying on their own. For their survival they depended on money sent by their father.

De facto and *de jure* female-headed households and male-headed households differed as regards the age of the head of the household, as shown in Table 3.4. *De facto* female heads of households were by far the youngest, both in Chitungwiza (Kruskal-Wallis $H=8.4$, $d.f.=2$, $p=0.015$) and in Murehwa district (Kruskal-Wallis $H=39.9$, $d.f.=2$, $p=0.0000$). *De jure* female heads of household in Murehwa district tended to be somewhat older than their male counterparts, but the difference is not statistically significant.

Birth and death

The number of reported births and deaths in the households between the first and the second survey and between the second and the third survey are given in Table 3.5.

The calculated crude birthrates (between 21 and 26 per thousand population) are lower than those found in the 1992 national census, which were 34.6 and 32.6 per thousand for Chitungwiza and Murehwa district respectively. The calculated crude death rates are similar to those found in the census, which were 7.9 per thousand for Chitungwiza and 11.1 per thousand for Murehwa district.

Table 3.4: Age of male and female heads of household in Chitungwiza and Murehwa district (1995)

	Head of household		
	Male	Female, <i>de jure</i>	Female, <i>de facto</i>
Chitungwiza (N=266)	(n=222)	(n=31)	(n=13)
less than 20 years	0	1 (3%)	1 (8%)
20 to 39 years	115 (52%)	13 (42%)	9 (69%)
40 to 59 years	97 (44%)	13 (42%)	3 (23%)
60 years and above	11 (5%)	4 (13%)	0
mean age (years)	41.0	41.5	32.6
median (years)	38.5	39.0	31.0
Murehwa district (N=289)	(n=141)	(n=56)	(n=91)
less than 20 years	1 (1%)	0	0
20 to 39 years	56 (40%)	17 (30%)	69 (76%)
40 to 59 years	52 (37%)	23 (41%)	20 (22%)
60 years and above	33 (23%)	16 (29%)	2 (2%)
mean age (years)	46.8	50.4	35.1
median (years)	43.0	54.0	33.0

Table 3.5: Births and deaths in households during the 12 months prior to 1994 and 1995 surveys by area

	1994	1995
Chitungwiza		
Number of births	42	34
Number of deaths	14	13
Crude birthrate	25.2 per 1000	21.1 per 1000
Crude death rate	8.4 per 1000	8.1 per 1000
Murehwa district		
Number of births	42	43
Number of deaths	19	17
Crude birthrate	24.9 per 1000	25.6 per 1000
Crude death rate	11.2 per 1000	10.1 per 1000

A total of 11 children under the age of five years were reported to have died in the two years between the first and the third survey. Of these, four died before they were one year old, and no anthropometric measurements were taken. For six children, such measurements were taken at baseline. One of the children, who had a twin sister, was severely wasted in 1993, whereas



two children had severe growth retardation (stunting). Two other children died of suspected AIDS or AIDS-related disease.

Five of the total of 29 deaths reported in 1995 were of people between 20 and 30 years. They all died of suspected AIDS, although only in one case was this confirmed by the family member who was interviewed (the wife of the deceased).

3.3 Education

Questions about the educational background of household members were asked only in the third survey round in 1995.

Table 3.6: *Educational level of male and female adults by area (1995)*
(mean number of years of schooling \pm one standard deviation)

	Chitungwiza	Murehwa district	Significance of difference
Male heads of household	8.1 \pm 2.9	6.7 \pm 3.2	p<0.001
Female heads of household	6.7 \pm 3.1	5.9 \pm 3.2	not significant
Wives of male heads of household	7.0 \pm 3.1	6.0 \pm 3.0	p<0.01
All adults	8.1 \pm 2.3	6.9 \pm 2.7	p<0.0001

Adults in Chitungwiza had generally higher levels of education than those in Murehwa district (statistically significant for all categories of adults, except for female heads of households). Male heads of household had higher levels of education than female heads of household (p<0.01 for Chitungwiza; p<0.05 for Murehwa district). Females who are heads of household tended to have lower levels of education than wives of male heads of household, but this difference is not statistically significant. The relatively high level of education of the category 'all adults' is due to the high educational background of young adults who are not heads of household, and who are not shown as a separate category in the above table.

Data on out-of-school youth are presented in Section 3.5.

3.4 Economic activities

Questions about sources of income and new employment taken up by household members and loss of employment between survey rounds revealed some interesting trends.

Table 3.7 shows a frequency distribution of the sources of income reported by each household in 1994 and 1995 as “the *major* source of income”. Wages form the major source of income for about two-thirds of the Chitungwiza households. For Murehwa district, the decrease in sale of crops as the major source of household income is striking: from more than one-half of the household to less than one-quarter. This is due to the poor harvests in 1995, which were caused by poor rainfall. As a result, remittances became the most frequently cited major source of income. The share of “other income sources” and wages was also higher than in 1994. Not less than 15 per cent of the household in Murehwa district cited brick moulding or building as their major source of income in 1995. This activity appeared to have become even more important than wages.

In Chitungwiza, the decline in vending and trading as the major source of income can also be explained, at least in part, by the effects of the drought. Among the “other sources”, rents were cited by 5.2 per cent of the households as their major source of income in 1995.

Table 3.8 shows a steady diversification in reported sources of income in Chitungwiza households since 1991. The proportion of households that rely on one source of income has fallen from about two-thirds in 1991 to about one-quarter in 1995. In Murehwa district, the number of sources of income was highest in 1994 when harvests were good. This shows the dependency on rainfall of the rural area. Figures 3.1 and 3.2 (see annex) are graphical representations of the data contained in Table 3.8.

Table 3.7: *Major sources of income for Chitungwiza and Murehwa district households in 1994 and 1995*

	1994	1995
Chitungwiza	(N=281)	(N=266)
Wages	67.6%	65.8%
Vending and trading	17.1%	9.0%
Remittances	6.0%	4.9%
Other sources ¹	9.3%	20.3%
Murehwa district	(N=278)	(N=289)
Sale of crops or garden produce	51.1%	23.2%
Remittances	27.0%	38.8%
Wages	6.8%	14.5%
Other sources ¹	15.1%	23.5%

¹ Other sources of income include: small-scale manufacturing, crocheting and knitting, maintenance work, brick moulding and construction work, motor mechanics, shop-keeping, house rents, pensions, etc.



Table 3.8: Number of sources of income per household by year in Chitungwiza and Murehwa district

	1991 ¹	1993	1994	1995
Chitungwiza	(N=327)	(N=327)	(N=281)	(N=266)
1 source	67.0%	53.5%	40.9%	26.3%
2 sources	30.6%	40.7%	48.8%	54.9%
3 sources	2.4%	5.8%	8.9%	14.3%
4 sources or more	0.0%	0.0%	1.4%	4.5%
Average no. per household	1.34	1.52	1.70	1.97
(% change)		(+13%)	(+12%)	(+16%)
Murehwa district	(N=300)	(N=300)	(N=278)	(N=289)
1 source	53.4%	53.7%	20.9%	31.8%
2 sources	42.3%	41.7%	47.8%	43.6%
3 sources	4.0%	4.3%	25.5%	21.8%
4 sources or more	0.3%	0.3%	5.8%	2.8%
Average no. per household	1.50	1.51	2.17	1.96
(% change)		(+1%)	(+44%)	(-10%)

¹ Sources of income in 1991 were those as reported in the 1993 survey

Table 3.9 shows how many households were getting their incomes from formal employment as opposed to informal employment. Around 40 per cent of the Chitungwiza households gained income from both formal and informal employment. In Murehwa district, this was less than ten per cent. Formal employment only and informal employment scored equally in Chitungwiza (27 to 28 per cent). In Murehwa district, very few households live from formal sector employment (only 3 to 4 per cent). The vast majority (85 to 86 per cent) gain income from the informal sector of the economy.

It was further calculated that 31 per cent of the adult (18 years and above) members of households in Chitungwiza in 1995 were earning an income from formal employment. In Murehwa district, this was 5 per cent. The proportion of adults not involved in any income-generating activities was 34 per cent in Chitungwiza and 12 per cent in Murehwa district.

Data about new employment and loss of employment by households in each of the 12-month periods between the survey rounds are given in Table 3.10. They show a fairly high job turnover, suggesting that labour security is not good. It is remarkable that not less than 9 per cent of the households in Murehwa district managed to secure a new job in 1995, the year when harvests were poor. Other households, however, lost employment without finding alternative jobs (almost 4 per cent).

Table 3.9: Household sources of income in Chitungwiza and Murehwa district (1994 and 1995)

	1994	1995
Chitungwiza	(N=281)	(N=266)
Income from both formal and informal employment	39.3%	41.7%
Income from formal employment only	35.0%	27.4%
Income from work in informal sector only	23.2%	27.8%
Not working, depending on remittances and/or rents	2.5%	3.0%
Murehwa district	(N=278)	N=289)
Income from both formal and informal employment	9.7%	9.0%
Income from formal employment only	4.0%	3.1%
Income from work in informal sector only	85.3%	86.2%
Not working, depending on remittances and/or rents	1.1%	1.7%

Most of the reported new and lost employment positions derived from formal employment in the industrial sector, while a few were positions as housekeepers or child-minders. In many cases, those who found employment left the household. Finding new employment, therefore, does not necessarily imply that the household has a steady new source of income. As a matter of fact, of the 31 households in Murehwa district that had found employment (27 plus four), only six households reported a formal income. The remaining 25 reported no formal income, but of these, 18 reported that they received remittances versus seven that did not report remittances.

Table 3.10: New employment and loss of employment over the 12 months prior to survey in Chitungwiza and Murehwa district households (1994 and 1995)

	1994	1995
Chitungwiza	(N=281)	(N=266)
Lost and found employment	10 (3.6%)	8 (3.0%)
Lost employment	10 (3.6%)	19 (7.1%)
Found new employment	19 (6.8%)	18 (6.8%) ¹
Net change in employment	+9 jobs	no change
Murehwa district	(N=278)	(N=289)
Lost and found employment	4 (1.4%)	4 (1.4%)
Lost employment	16 (5.8%)	11 (3.8%)
Found new employment	12 (4.3%)	27 (9.3%)
Net change in employment	-4 jobs	+16 jobs

¹ In one Chitungwiza household two members found new employment





Table 3.11 shows the extent to which households that had no formal employment relied on remittances from relatives in each of the three survey years. Around 80 per cent of such households in Chitungwiza did not receive remittances. In Murehwa district this was the case for 44 to 51 per cent of the households, whereas close to 40 per cent received remittances regularly. The latter group mostly comprises de facto female-headed households that are financially supported by the husband or father who is living and working in town.

Table 3.12 gives an indication of the importance in 1995 of remittances in female-headed households. More than one-third of the Chitungwiza households headed by females did not have formal employment and did not receive any remittances either (36 per cent). In Murehwa district this was the case for only 18 per cent of such households.

Table 3.11: *Reliance on remittances among households without formal employment in Chitungwiza and Murehwa district by year*

	1993 ¹	1994	1995
Chitungwiza	(n=109)	(n=72)	(n=82)
Receiving regular remittances	10%	17%	18%
Receiving irregular remittances	6%	1%	4%
Not receiving any remittances	83%	82%	78%
Murehwa district	(n=279)	(n=240)	(n=254)
Receiving regular remittances	38%	37%	39%
Receiving irregular remittances	13%	12%	18%
Not receiving any remittances	49%	51%	44%

¹ 1993 data have a greater margin of error

3.5 Socioeconomic status

Several indicators were used to measure the socioeconomic status of the households involved in the study. They relate to the following main categories: income; rural holdings; food production; food consumption; food aid and social welfare assistance; financial support of relatives; household expenditure; savings and debts; sale of assets; and school enrolment and drop-out.

Income



In the 1995 survey round, efforts were made to estimate total monthly household income from the cash income reported by the interviewees. Previously this was not considered feasible when estimating household income,

Table 3.12: *Remittances reported by female-headed households by area (1995)*

	Chitungwiza	Murehwa district
Female-headed households	(n=44)	(n=147)
with formal employment	36%	3%
without formal employment,		
receiving regular remittances	27%	55%
without formal employment,		
receiving irregular remittances	0%	24%
without formal employment,		
not receiving any remittances	36%	18%
De facto female-headed households	(n=9)	(n=91)
without formal employment receiving		
<i>from the husband/father</i>		
regular remittances	100%	77%
irregular remittances	0%	23%

no monetary value was imputed to food grown for the household's own consumption. Therefore, the household income levels in Chitungwiza and Murehwa district are difficult to compare.

Four hundred dollars is the official income level below which a household qualifies for social welfare assistance. Table 3.13 indicates that 10 per cent of the households in Chitungwiza and 46 per cent of the households in Murehwa district would qualify for such assistance. Table 3.14 has been derived from Table 3.13 by dividing the estimated monthly income of each household by the number of household members, which then gives the monthly income per person.

Table 3.15 shows the distribution of households with regard to the reported change in 1995 income compared to the previous year. Whereas about one-third of the Chitungwiza households reported a decrease in income, a slightly smaller proportion reported an increase (27 per cent). In Murehwa district, not less than 42 per cent reported a decrease in income, against only 17 per cent that reported an increase. The difference between Chitungwiza and Murehwa district is statistically significant ($\chi^2=10.20$, d.f.=2, $p<0.01$).

A disaggregation of these figures to income levels results in the picture presented in Table 3.16. Decrease in income was reported relatively more frequently among the low income categories, whereas increase in income



was reported more among the high income categories (for Chitungwiza: $X^2=28.52$, d.f.=6, $p<0.0001$; for Murehwa district: $X^2=30.20$, d.f.=6, $p<0.0001$). This suggests that the income gap has grown.

Table 3.13: *Estimated monthly household income in Chitungwiza and Murehwa district (1995)*

Monthly income	Households
Chitungwiza	(N=256) ¹
less than ZWD 400 per month	10.2%
ZWD 400 to 999	35.2%
ZWD 1000 to 1999	34.8%
ZWD 2000 to 3999	15.2%
ZWD 4000 or more	4.7%
Mean income (± 1 s.d.)	ZWD 1463 \pm 1656
25th per centile	ZWD 600
50th per centile (median)	ZWD 1040
75th per centile	ZWD 1658
Murehwa district	(N=258) ²
less than ZWD 400 per month	46.1%
ZWD 400 to 999	35.3%
ZWD 1000 to 1999	12.8%
ZWD 2000 to 3999	5.0%
ZWD 4000 or more	0.8%
Mean income (± 1 s.d.)	ZWD 680 \pm 980
25th per centile	ZWD 220
50th per centile (median)	ZWD 420
75th per centile	ZWD 775

¹ For ten households in Chitungwiza estimates could not be obtained

² In Murehwa district estimates could not be obtained for 31 households

Table 3.17 shows the household income level of households with formal and informal sources of income. Median values rather than mean values should be compared, as the data are not normally distributed. It is not surprising that in both areas households with no formal sources of employment have the lowest incomes. Those with income from formal employment only have much lower incomes than those that supplement formal with informal income.

Table 3.18 shows the income distribution of male- and female-headed households. Statistical tests could not be carried out as the distributions were

not normal. In addition, the Chitungwiza data have a large margin of error due to the small number of female-headed households in that area. They should, therefore, be interpreted with care. Comparison of median values suggests that male-headed households have the highest incomes, followed by de facto female-headed households. *De jure* female-headed households

Table 3.14: *Estimated monthly household income per person (1995)*

	Households
Chitungwiza	(N=256)
less than ZWD 100	21.1%
ZWD 100 to 199	32.0%
ZWD 200 to 399	31.6%
ZWD 400 or more	15.2%
Mean income (± 1 s.d.)	ZWD 255 \pm 244
25th per centile	ZWD 110
50th per centile (median)	ZWD 177
75th per centile	ZWD 305
Murehwa district	(N=258)
less than ZWD 100	57.0%
ZWD 100 to 199	26.7%
ZWD 200 to 399	11.2%
ZWD 400 or more	5.0%
Mean income (± 1 s.d.)	ZWD 129 \pm 164
25th per centile	ZWD 40
50th per centile (median)	ZWD 85
75th per centile	ZWD 159

Table 3.15: *Reported change in 1995 household income compared to 1994 by area*

	Chitungwiza	Murehwa district
Change in income	(N=262) ¹	(N=283) ²
Increase	27%	17%
No change	41%	40%
Decrease	32%	42%
Don't know	1%	2%

¹ Data missing for four Chitungwiza households

² Data missing for six Murehwa district households



have by far the lowest income levels in both areas. In Murehwa district not less than 63 per cent of them had a monthly income of less than ZWD 400, with the median in this category at ZWD 320.

However, if household size is taken into account the picture looks slightly different, as shown in Table 3.19. The differences are not statistically significant, but this may be due to the small numbers (Chitungwiza: $F=1.479$, $p=0.23$; Murehwa district: $F=2.267$, $p=0.10$). De facto female-headed house-

Table 3.16: *Reported change in household income by income category in Chitungwiza and Murehwa district (1995)*

	Decrease	No change	Increase
Chitungwiza (N=251)			
less than ZWD 400	48%	32%	20%
ZWD 400 to 999	45%	42%	13%
ZWD 1000 to 1999	26%	42%	33%
ZWD 2000 or more	12%	43%	45%
Murehwa district (N=252)			
less than ZWD 400	54%	39%	8%
ZWD 400 to 999	40%	41%	18%
ZWD 1000 to 1999	31%	34%	34%
ZWD 2000 or more	13%	38%	50%

Table 3.17: *Monthly household income by income source (in ZWD, 1995)*

	Less than \$ 400	\$ 400 to \$ 999	\$ 1000 to \$ 1999	\$ 2000 or more	mean/median
Chitungwiza (N=249)					
Formal and informal sources	4%	25%	47%	24%	1682/1237
Formal employment only	7%	45%	27%	21%	1419/900
Non-formal sources only	24%	35%	25%	16%	1252/740
Murehwa district (N=253)					
Formal and informal sources	9%	27%	36%	27%	1453/1375
Formal employment only	44%	11%	44%	0%	843/600
Non-formal sources only	50%	36%	10%	4%	608/400

holds now have higher incomes per person than the male-headed households, rather than lower. This is due to the smaller size of the former type of

households. It is clear, however, that *de jure* female-headed households remain the poorest of all households in both the urban and the rural area.

De jure female-headed households in Murehwa district also reported significantly more frequent reductions in income compared to the previous year than the other households (see Table 3.20: $X^2=18.19$, d.f.=4, $p=0.001$). This is further evidence that the poorest households have become poorer.



Table 3.18: *Monthly household income by type of household (1995)*

	Less than \$ 400	\$ 400 to \$ 999	\$ 1000 to \$ 1999	\$ 2000 or more	mean/ median
Chitungwiza (N=256)					
Male-headed households	10%	33%	37%	20%	1501/1100
<i>De jure</i> female-headed hh.	18%	46%	21%	14%	1222/625
De facto female-headed hh.	0%	46%	27%	27%	1336/1033
Murehwa district (N=258)					
Male-headed households	39%	34%	18%	9%	873/525
<i>De jure</i> female-headed hh.	63%	29%	6%	2%	412/320
De facto female-headed hh.	46%	42%	9%	4%	556/410

Table 3.19: *Household income per person by type of household (1995)*

	Less than \$ 100	\$ 100 to \$ 199	\$ 200 to \$ 399	\$ 400 or more	mean/ median
Chitungwiza (N=256)					
Male headed households	22%	31%	32%	15%	255/176
<i>De jure</i> female-headed hh.	21%	39%	29%	11%	215/144
De facto female-headed hh.	0%	27%	36%	36%	364/265
Murehwa district (N=258)					
Male headed households	58%	20%	15%	6%	149/83
<i>De jure</i> female-headed hh.	61%	31%	6%	2%	92/60
De facto female-headed hh.	52%	34%	9%	5%	123/93

Table 3.20: *Reported change in income by type of household in Murehwa district (1995)*

	Change in income		
	Decrease	No change	Increase
Male headed households (n=136)	42%	37%	21%
<i>De jure</i> female-headed households (n=54)	63%	28%	9%
De facto female-headed households (n=87)	31%	54%	15%



Rural holdings

Land-use rights were claimed in the 1993 baseline survey by 22 per cent of households in Chitungwiza and by 93 per cent of households in Murehwa district. Two years later (in 1995), this was 41 per cent and 98 per cent respectively. This increase could be due to a difference in the phrasing of the questions. Most of the Chitungwiza households claiming land-use rights were referring to land in their rural home area. Few households allowed others to use their land for any period of time: five households in Chitungwiza and three in Murehwa district did so in 1995, in most cases without charge. Use of someone else's land was reported by 11 households in Chitungwiza and ten in Murehwa district, with only one household stating it paid some money in return.

Rural households in Zimbabwe often regard cattle as a form of savings rather than as a productive investment. No substantial change was found with regard to cattle ownership over the three years. In Chitungwiza, less than 20 per cent of the households had cattle compared to almost 60 per cent in Murehwa district (see Table 3.21).

Table 3.21: *Cattle ownership by Chitungwiza and Murehwa district households by year*

	1993	1994	1995
Chitungwiza	(N=327)	(N=281)	(N=266)
Households owning cattle	14%	18%	18%
Mean number ¹	6.8	7.6	4.4
Median ¹	4.0	4.0	3.0
Murehwa district	(N=300)	(N=278)	(N=289)
Households owning cattle	52%	60%	56%
Mean number ¹	6.4	6.2	7.3
Median ¹	5.0	5.0	5.0

¹ Mean and median values are calculated for households that had cattle, rather than all households

Nine households in Chitungwiza and 19 in Murehwa district reported buying cattle between the second and the third survey round, at prices ranging from ZWD 800 to ZWD 2100. Sales of cattle were reported by seven households in Murehwa district at prices between ZWD 700 and ZWD 1200. No households in Chitungwiza reported selling cattle.



Food production

Table 3.22 summarises the situation with regard to the production and sale of maize and other crops in the three survey years. One of the striking findings for Chitungwiza is that the proportion of households that grew their own maize more than doubled from 12 per cent in 1993 to around one-quarter in 1995.

Table 3.22: *Maize production and self-sufficiency and sale of crops by Chitungwiza and Murehwa district households by year*

	1993	1994	1995	Significance of difference
Chitungwiza	(N=327)	(N=281)	(N=266)	
Harvested maize	12%	21%	26%	p<0.0001
Self-sufficient in maize	9%	16%	6%	p<0.001
Harvested other crops	6%	13%	12%	p<0.01
Sold (or would sell) crops	7%	8%	3%	p<0.05
Murehwa district	(N=300)	(N=278)	(N=289)	
Harvested maize	93%	95%	95%	Not sign.
Self-sufficient in maize	76%	80%	30%	p<0.0001
Harvested other crops	50%	73%	61%	p<0.0001
Sold (or would sell) crops	56%	60%	26%	p<0.0001

In Murehwa district, the vast majority of households produced maize (around 95 per cent), but maize self-sufficiency fell from 76 to 80 per cent of households in the first two years to a mere 30 per cent in 1995. This is clearly a consequence of the drought during the 1994/95 agricultural season. In line with this, the proportion of households that sold or intended to sell crops decreased by one-half (from 56–60 per cent to 26 per cent). With regard to types of agricultural produce in Murehwa district, a shift was observed from rapoko, sunflower and sorghum, which were the main crops in 1993, to groundnuts in 1994 and 1995.

Gardening and the sale of garden produce was a new item in the 1995 interviews. It was found that 36 per cent of households in Chitungwiza grew vegetables, of which 12 per cent reported selling them (or some of them). In Murehwa district, 87 per cent of the households grew vegetables, of which 61 per cent brought them to the market.

Food consumption

The 1993 baseline survey found that the majority of households in both study areas (79 per cent in Chitungwiza and 73 per cent in Murehwa district) were no longer buying certain food items because they had become too expensive. Meat, bread, rice and cooking oil were the most frequently mentioned items in this regard. Ninety-one and 73 per cent of the households in the two respective areas reported they had reduced the consumption of certain food items. Here the main items mentioned were bread, cooking oil, meat, maize meal and sugar. Remarkable was the high proportion of urban households (31 per cent) that had reduced the amount of *sadza*¹ they consumed. In Murehwa district, this was the case in 5 per cent of all households.

Table 3.23 shows the proportion of households that claimed not to have had enough food in the two 12-month periods between the three survey rounds. For Chitungwiza, there is a slight indication that the situation got worse, but none of the differences between the two periods is statistically significant. It is especially worrying that in 1995, 6 per cent claimed they had experienced a shortage of maize meal. In Murehwa district both the proportion of households that experienced food shortages and those that had a shortage of maize meal more than doubled between 1994 and 1995. Not less than 13 per cent of the households claimed they did not have enough maize meal for part of the year. This again can be attributed to the poor harvests because of drought.

Table 3.23: *Households claiming food shortages during the 12-month period prior to survey (1994 and 1995)*

	1994	1995	Significance of difference
Chitungwiza	(N=281)	(N=266)	
Periodic food shortage	23%	25%	Not significant
Food shortage during whole year	14%	16%	Not significant
Shortage of maize meal	3%	6%	Not significant
Murehwa district	(N=278)	(N=289)	
Periodic food shortage	8%	18%	p<0.001
Food shortage during whole year	2%	1%	Not significant
Shortage of maize meal	6%	13%	p<0.01

¹ *Sadza* is the staple food in Zimbabwe, and is made of maize meal.





Information about the number of daily meals, the frequency of meat consumption and the availability of basic grocery items was obtained for Murehwa district households only in the 1995 round of interviews. Twenty-seven per cent reported they did not always have three meals per day. This includes 3 per cent of the households that usually had two meals. Forty per cent of households said they had meat less than once a week; 30 per cent had meat once a week; 14 per cent had it twice a week; and 16 per cent had it three times a week or more. Of a list of six basic commodities, which included cooking oil, body soap and soap for washing clothes, 5 per cent of the households had none of these items available at the time of interview and 25 per cent had only one or two items available. This further illustrates the precarious financial situation of a large proportion of the households in the rural area.

Food aid and social welfare assistance

At the time of the baseline survey in 1993, a Child Supplementary Feeding Programme (CSFP) was operational in rural areas, including Murehwa district. The programme was started in mid-1992 to alleviate the effects of the severe 1991/92 drought, and continued in most places in Murehwa district for about one-and-a-half years until late 1993. A Food-for-Work (FFW) programme, which was also started in 1992, was discontinued between April and December 1993, depending on the area. The 1993 baseline survey showed that between January and June 1993, 44 per cent of the households had received aid through the CSFP, whereas 41 per cent had participated in the FFW programme. At the time of the second round of interviews in 1994, the CSFP and FFW programme were no longer operational.

Very few households reported having received aid from the government social welfare department. In Chitungwiza, the number of households that had received food, food money, money for school fees or blankets in the three consecutive survey years was 15, seven and nine, which is 2 to five per cent of the total number of households. In Murehwa district, reports of free distribution of fertiliser and/or seeds or of assistance with school fees were given by 6 per cent of the households in 1994 (13 households) and 4 per cent a year later (ten households).

Letters for free treatment at clinics and hospitals are another form of social welfare, although the task of issuing these letters has gradually shifted from the social welfare department to local councillors and, in Chitungwiza, to health staff. Seven to 8 per cent of the Chitungwiza households reported that they possessed such letters in 1994 and 1995 (no data available for 1993). In Murehwa district, 12 per cent possessed letters for free treatment (1994



and 1995). Section 3.7 provides further details on the healthcare paying-status of households.

Assistance from relatives or friends was reported by 4 per cent of the Chitungwiza households in 1995 and 7 per cent of those in Murehwa district. Items that were received were mostly clothes, and in some cases money or groceries.

Financial support of relatives

About one-quarter of the households in Chitungwiza support relatives staying elsewhere. In most cases, these are children in rural areas or in boarding schools, parents or grandparents. About two persons on average are supported per household, as shown in Table 3.24. For Murehwa district, it was found that the proportion of households that gave financial support to relatives had decreased significantly over the study period: from 14 per cent in 1993 to 7 per cent in 1995 ($p < 0.05$). This could well be due to decreased financial capability. The number of people supported per household had not decreased.

Table 3.24: *Financial support of relatives staying elsewhere by year*

	1993	1994	1995	Significance of difference
Chitungwiza	(N=327)	(N=281)	(N=266)	
Households supporting relatives	28%	22%	28%	Not significant
Average no. of relatives supported	1.9	2.1	2.1	
Murehwa district	(N=300)	(N=278)	(N=289)	
Households supporting relatives	14%	10%	7%	$p < 0.05$
Average no. of relatives supported	1.7	1.5	1.8	

Household expenditure

Major expenditures were reported by around 40 per cent of the Chitungwiza households in each of the three survey years (see Table 3.25). In Murehwa district, almost the same percentage reported major expenditures in 1994, when harvests were good, but in 1993 and 1995 the percentage was lower ($p < 0.01$).

Respondents were free to mention any type of expenditure and they were also allowed to determine for themselves what they considered "major expenditures". The results are summarised in Table 3.26. There is obviously a difference between expenditure on luxury items, such as furniture and electrical appliances, and expenditure on basic necessities such as school fees, medical care and seeds and fertiliser.



Table 3.25: Households reporting major expenditures in the 12-month period prior to survey by year

	1993	1994	1995	Significance of difference
Chitungwiza	(N=327) 43.1%	(N=281) 42.3%	(N=266) 39.1%	Not significant
Murehwa district	(N=300) 25.8%	(N=278) 38.5%	(N=289) 32.2%	

Table 3.26: Types of reported major expenditure by year ¹

	1993	1994	1995
Chitungwiza	(n=141)	(n=119)	(n=104)
furniture/electrical appliances	58%	25%	24%
building materials	17%	12%	17%
school fees	30%	21%	16%
funerals	2%	8%	13%
medical care	-	26%	17%
other expenditure	3%	24%	30%
Murehwa district	(n=77)	(n=107)	(n=93)
furniture/electrical appliances	27%	4%	10%
building materials	47%	21%	27%
school fees	25%	21%	11%
medical care	2%	6%	6%
funerals	-	28%	11%
seeds/fertiliser	-	20%	24%
other expenditure	-	16%	28%

¹ Totals exceed 100 per cent as some households reported more than one item

Expenditure on funerals was not reported at all in 1993, which was probably due to the way the question was phrased in the Shona language. In 1994, more than one-quarter of the households in each of the two study areas said they had incurred major expenditures on funerals. Therefore, in the 1995 survey some explicit questions on funeral expenditures were asked. Table 3.27 shows that 42 per cent of the households in Chitungwiza and 49 per cent in Murehwa district reported they had incurred such expenditure over the 12-month period since the previous interview.

Table 3.27: Household expenditure on funerals in 1995 (in ZWD)

	Chitungwiza (N=266)	Murehwa district (N=289)
Funeral expenditure:	41%	49%
for members	12 households	15 households ¹
for relatives	98 households	123 households
Money involved:		
range	\$ 15 to \$ 4000	\$ 5 to \$ 3000
median	\$ 400	\$ 150

¹ Two households in Murehwa district reported two deaths among their members

The amount of money contributed to funerals varied hugely: between ZWD 15 and ZWD 4,000 in Chitungwiza, and between ZWD 5 and ZWD 3,000 in Murehwa district. The respective median amounts were ZWD 400 and ZWD 150. These are considerable sums given the levels of household income. It is estimated that annual expenditure on funerals forms 36 to 38 per cent of one month's income.

Savings and debts

The ability of households to save money from their income increased significantly between 1993 and 1994, both in Chitungwiza and in Murehwa district, from about one-quarter to over 40 per cent of all households (see Table 3.28). In the rural area in the year thereafter, however, the figure fell back almost to its 1993 level. The proportion of households with savings in the bank or at home was consistently higher in Chitungwiza than in Murehwa district, by approximately 20 percentage points.

In the third survey round in 1995, further questions were asked about savings. The amounts of money that were saved by households in Murehwa district varied from less than ZWD 100 (4 per cent) to more than ZWD 1000 (40 per cent). More than half the households (56 per cent) had put aside between ZWD 100 and ZWD 1000.

A question about what they were saving for revealed that 34 per cent of the Chitungwiza households kept their savings for emergencies; 30 per cent saved money to pay for school-related expenses, such as fees and uniforms; and 17 per cent put money aside to buy building materials for their house. In Murehwa district, school-related costs were a more important reason for saving than emergencies (47 per cent compared with 36 per cent).



Table 3.28: Household saving patterns by year

	1993	1994	1995	Signif. of difference
Chitungwiza	(N=327)	(N=281)	(N=266)	
Able to save money from income))	42.6%	p<0.0001
Having savings at home or in the bank	28.4%	44.6%	44.7%	p<0.001
	35.8%	52.9%		
Murehwa district	(N=300)	(N=278)	(N=289)	
Able to save money from income))	28.4%	p<0.0001
Having savings at home or in the bank	24.3%	40.3%	26.7%	p<0.001
	19.0%	33.1%		

Saving money from household income was not that easy for many households. Forty-seven per cent of the Chitungwiza households claimed they were reducing household expenditure in order to save. Items for which expenditure was reduced included food (57 per cent), clothing (30 per cent), furniture (26 per cent) and drinks (21 per cent); the figures exceed 100 per cent because several respondents mentioned more than one item. In Murehwa district, 36 per cent of the households claimed they had reduced household expenditure in order to save money. Clothing (43 per cent), food (36 per cent) and furniture were the main items on which expenditure was reduced.

A popular way of gaining some degree of future security is by contributing money to local funeral societies. This was done by more than one-quarter of the households in Chitungwiza (see Table 3.29). In Murehwa district, participation in funeral societies appeared to have almost doubled between 1994 and 1995 (from 10 to 20 per cent), despite the economic hardship after the 1994/95 drought. Local savings clubs allow participants to spend a relatively large amount of money when it is their turn to receive the contributions of all other participants. This form of saving is practised by approximately one-quarter of the households in Chitungwiza and 15 per cent of those in Murehwa district. The popularity of funeral societies and local savings clubs increased significantly between 1993 and 1995. It is possible, though, that the lower figures obtained from the 1993 baseline survey were somewhat underreported owing to the phrasing of the relevant question, which made no distinction between funeral societies and local savings clubs.

Financial indebtedness among Chitungwiza households decreased between 1993 and 1994, but then rose sharply to more than 40 per cent in 1995 (see Table 3.30). The debts reported in 1995, however, were much lower than those reported in the previous two years. Among the households in

Murehwa district, financial indebtedness grew steadily over the three years (from 14 per cent in 1993 to 35 per cent in 1995), but here also the size of the debts decreased.

Table 3.29: *Households participating in funeral societies or local savings clubs by year*

	1993	1994	1995	Significance of difference
Chitungwiza	(N=327)	(N=281)	(N=266)	
funeral society		26.0%	30.5%	
savings club		22.9%	29.1%	
either of two	17.7%	36.0%	45.1%	p<0.0001
Murehwa district	(N=300)	(N=278)	(N=289)	
funeral society		10.4%	19.7%	
savings club		14.0%	16.6%	
either of two	4.0%	21.2%	28.7%	p<0.0001

Sale of assets

The sale of assets to sustain household expenditure on basic commodities and services is a sensitive indicator of economic difficulty. The issue was only included in the interview schedule in 1995. Eight households in Chitungwiza, representing 3 per cent of the total, reported no alternative but to sell assets in order to buy food or settle debts. Seven of them sold some of their household furniture. One household made ZWD 40 from the sale of some of their clothes, which enabled them to buy food.

Table 3.30: *Households with financial debts by year*

	1993	1994	1995	Significance of difference
Chitungwiza	(N=327)	(N=281)	(N=266)	
households with debts	29.4%	18.6%	41.7%	p<0.0001
mean value of debt (ZWD)	1,183	970	598	
median value of debt (ZWD)	300	300	250	
Murehwa district	(N=300)	(N=278)	(N=289)	
households with debts	14.3%	19.8%	34.6%	p<0.0001
mean value of debt (ZWD)	1,904	1,978	885	
median value of debt (ZWD)	300	200	100	





In Murehwa district, the usual response to financial crisis is the sale of livestock or crops. Twenty-four households, or 8 per cent of the total sample, reported sales of livestock or crops in 1995. This was mainly to pay school fees (10 households) or for funerals (five households). The amounts of money involved varied between ZWD 24 and ZWD 2,500. One woman in Murehwa district decided to sell some of her kitchen utensils for ZWD 20 so that she could take the bus to visit her ill child at the hospital.

School drop-out and delayed school enrolment

School drop-out and delayed school enrolment are two other sensitive indicators of the economic difficulties experienced by households. Table 3.31 shows how many households had children who abandoned school or who delayed school enrolment, and the numbers of children involved. In most cases, inability to pay school fees was given as the main reason for no longer sending children to school. Although the numbers seem small, it is worrying to see that there are children who do not complete primary school.

In the 1995 survey round, households were asked whether any child had changed school. Ten per cent of the households in Chitungwiza and 6 per cent of those in Murehwa district had children who changed schools between 1994 and 1995. In Chitungwiza, 16 children from 11 different households went to a cheaper school because their parents could no longer afford the fees.

Of the eight-to-14-years-old children in 1995, 12 in each of the two study areas were not in school, representing 3 to four 4 cent of all children in that age category (see Table 3.32). There was no clear difference between the two sexes. In the category of 15 to 17 years, one-fifth to one-quarter of the children were not in school. Here, girls were affected twice as often as boys.

Table 3.31: *Households with children who dropped out of school and children who delayed school enrolment (in brackets) by year*¹

	1993	1994	1995
Chitungwiza	(N=327)	(N=281)	(N=266)
Drop-out before completion of primary school	7 (12)	3 (4)	5 (6)
Drop-out upon completion of primary school	10 (11)	2 (3)	2 (2)
Drop-out from secondary school before Form 4	16 (17)	4 (5)	6 (6)
Delayed school enrolment	7 (11)	no record	2 (2)



Murehwa district	(N=300)	(N=278)	(N=289)
Drop-out before completion of primary school	4 (4)	3 (3)	0
Drop-out upon completion of primary school	11 (11)	4 (4)	11 (11)
Drop-out from secondary school before Form 4	19 (22)	5 (5)	7 (8)
Delayed school enrolment	2 (2)	no record	2 (2)

¹ Data from 1993 cover two-and-a-half years (from January 1991 to mid-1993), data from 1994 and 1995 each cover 12 months periods (the 12 months between the surveys).

Table 3.32: *Out-of-school youth by age category and by area (1995)*

	Chitungwiza	Murehwa district
Children 8 to 14 years:	(n=330)	(n=430)
never been to school	5	3
stopped before Grade 7	7	7
completed Grade 7 or higher	0	2
total (boys, girls)	12 (6, 6)	12 (5, 7)
% of all children	3.6%	2.8%
Children 15 to 17 years:	(n=102)	(n=109)
never been to school	1	1
stopped before Grade 7	2	4
completed Grade 7 or higher	23	18
total (boys, girls)	26 (8, 18)	23 (9, 14)
% of all children	25.5%	21.1%



4. Changes in illness patterns and health-seeking behaviour (1993–95)

4.1 Healthcare utilisation and paying status

Usual source of healthcare

In the first two survey rounds in 1993 and 1994, 83 to 86 per cent of the households in Chitungwiza and 96 to 97 per cent in Murehwa district claimed that it was usual for them to obtain their healthcare from clinics or hospitals (see Table 4.1). Use of private practitioners was quite popular in Chitungwiza (11 to 13 per cent) but almost nonexistent in Murehwa district. 2 per cent of the households in both areas in 1993 said they would go to spiritual healers in cases where someone was ill, but in the 1994 survey this was 4 per cent in Murehwa district.

Table 4.1: *Usual source of healthcare in Chitungwiza and Murehwa district (1993 and 1994)*

	1993	1994
Chitungwiza (N=327)		(N=281)
Clinic or hospital	86%	83%
Private doctor	11%	13%
Church or spiritual healer	2%	2%
Other sources	1% ¹	1%
Murehwa district (N=300)		(N=278)
Clinic or hospital	97%	96%
Private doctor	1%	0%
Church or spiritual healer	2%	4%

¹ Other sources include army and industrial health facilities

Of those in Chitungwiza who usually went to the nearest health facility, the majority (98 per cent) went on foot, which took them less than one hour. Few people went to a clinic or hospital other than the nearest facility. Those who did thought they would receive better care (two cases) or because waiting times were shorter (two cases) or because they knew someone at the other facility (two cases).

In Murehwa district, 88 per cent of those who usually went to the nearest health facility went on foot, whereas 10 per cent travelled by bus. Only one-third (33 per cent) needed less than one hour to reach the nearest health facility, 30 per cent needed one to two hours, 28 per cent needed two to three hours and 9 per cent claimed they needed more than three hours for a one-way journey to the clinic. For about one-third of the households (34 per cent), the nearest health facility was either the district hospital or the mission hospital rather than a rural health centre.

Paying status

In the 1994 survey, the majority of households in both study areas claimed they were paying for healthcare. Surprisingly, in Murehwa district more households were paying for healthcare than in Chitungwiza, as shown in Table 4.2.

Table 4.2: *Household paying status by area (1994)*

	Chitungwiza (N=281)	Murehwa district (N=278)
Always paying	62%	79%
Some members paying	13%	4%
Sometimes paying	1%	1%
Never paying	24%	16%

Those not paying or not always paying for healthcare either had medical aid or received employer-sponsored treatment or held letters which exempted them from paying health fees. Medical aid was the most common reason for not paying directly for medical care among Chitungwiza households (17 per cent of all households; see Table 4.3). About one-half of those who received employer-sponsored healthcare (10 per cent of all households in Chitungwiza), were employed by the Zimbabwe National Army (ZNA). Valid letters for free medical care from non-private health facilities were held by 8 per cent of the households in Chitungwiza (7 per cent in 1995). In Murehwa district, 12 per cent of the households held such letters.

Employer-sponsored healthcare provided the best coverage in terms of number of household members: 70 per cent of the households with this form of health insurance had all members covered, whereas 18 per cent had the employee covered but no other members of the household (the remaining 12 per cent had some but not all household members covered). Almost half the households that had medical aid (49 per cent) had all members of the household covered by the insurance policy, whereas 22 per cent had only one



Table 4.3: *Households with medical aid, employer-sponsored healthcare and government-sponsored care in Chitungwiza and Murehwa district (1994, 1995)*

	1994	1995
Chitungwiza	(N=281)	(N=266)
Holding valid letters for free healthcare	8%	7%
Having medical aid	17%	No record
Entitled to employer-sponsored healthcare	10%	No record
Murehwa district	(N=278)	(N=289)
Holding valid letters for free healthcare	12%	12%
Having medical aid	3%	No record
Entitled to employer-sponsored healthcare	1%	No record

member covered. Of the households that held letters for free treatment, 60 per cent had all members covered whereas 13 per cent had just one person covered.

In 1994, most of the letters for free treatment had been issued by the Department of Social Welfare (83 per cent in both areas combined). Only 9 per cent of the letters had been obtained from a health facility and 6 per cent from a local councillor. In 1995, however, local councillors had become the main agents in Chitungwiza who issued letters for free treatment. Fifty per cent of the households claimed they had obtained their letter from a local councillor, 41 per cent from the Social Welfare Department and 9 per cent from one of the hospitals. All letters issued in Chitungwiza in 1994 or 1995 had expiry dates, except in one case. In Murehwa district, about one-quarter of the letters did not have expiry dates, which is against government policy.

The 1994 survey revealed constraints both in the community and on service providers. Few people interviewed knew that to qualify for free treatment the households' monthly income had to be less than ZWD 400. Therefore, of those who applied for a letter but were not given one (7 per cent of the households in both areas in 1994), some may not have qualified but they were not always properly informed. 38 per cent of the applicants who failed to get a letter were told by the Social Welfare officers that they were considered "fit enough to work". Several applicants testified to the slowness and malfunctioning of the application system, as a result of which they gave up their efforts in frustration. Several respondents in 1995 complained that Chitungwiza General Hospital refused to accept letters for free treatment. Related to this, several people who usually paid for their healthcare complained that they had to pay twice: first at the municipal clinic where they went for a consultation and again at Chitungwiza General Hospi-

tal after being referred. This is a violation of government policy, which stipulates that referred patients do not pay for consultation fees at the hospital if they have already paid at the clinic.

4.2 Illness and treatment-seeking behaviour

Hospital admission

About one-fifth of the households involved in the third survey in 1995 reported that they had had one or more persons admitted to hospital during the 12-month period since the previous interview (20 per cent in Chitungwiza, 18 per cent in Murehwa district). In about one-half of the cases, there were no payments involved for hospitalisation or treatment (50 per cent of the cases in Chitungwiza, 58 per cent of the cases in Murehwa district).

Reported illness

In each of the three survey rounds, questions were asked about illness episodes among members of the household during the four-week period prior to the interview. Those who reported illness were asked further questions about the treatment they received. Table 4.4 shows a significant decrease in reported illness between 1993 and 1994, both in Chitungwiza and in Murehwa district.

It is not very likely that the observed decrease represents a real reduction in illness. There is no reason why there would be such a reduction in just one year. Therefore, there must be other explanations for the observed decrease in reported illness. On the one hand, there may have been some overreporting of illness episodes in 1993 by respondents who did not limit themselves to the four-week period. They may have done this because they expected to receive some personal benefit from the interview. On the other hand, it can be assumed that people are only inclined to report illnesses for which treatment was sought. Therefore, the observed decrease in reported illness could indicate that some people abstained from seeking treatment when they were ill.

Table 4.4: *Households reporting illness among their members by year*

	1993	1994	1995	Significance of difference
Chitungwiza	(N=327) 45.6%	(N=281) 34.5%	(N=266) 34.6%	p<0.01



Murehwa district	(N=300)	(N=278)	(N=289)	
	54.0%	35.3%	39.4%	p<0.0001

Table 4.5 shows that in 1993, 9 to 12 per cent of adults and children were reported to have been ill. The reduction in reported illness between 1993 and 1994 affected both adults and children. In Murehwa district the reduction was particularly strong (by about 5 percentage points). In 1995, illness reports went up somewhat, except for adults in Chitungwiza. If it is true that utilisation of healthcare declined in 1994, this may be a strong reaction to some influence or combination of influences in society which may take several years to reverse.

Table 4.5: *Reported illness episodes among the total number of adults and children by year*¹

	1993	1994	1995	Significance of difference
Chitungwiza				
adults	9.0%	8.3%	5.8%	p = 0.055
children	8.8%	5.0%	7.3%	p < 0.01
Murehwa district				
adults	12.3%	7.4%	10.3%	p < 0.05
children	10.8%	5.5%	6.6%	p < 0.00001

¹ Children are below 18 years

A comparison of the types of self-reported illnesses in the three years did not yield any clear trend over time (see Table 4.6). No attempt was made to assess the seriousness of disease and it is, therefore, not possible to conclude that people were rationing their medical care for specific diseases.

Treatment-seeking

Around 80 per cent of those who reported ill in Chitungwiza received treatment from the formal sector, which includes public hospitals and clinics as well as private doctors. In Murehwa district, this was around 70 per cent (see Table 4.7). Treatment from the informal sector (drugs bought from shops or pharmacies, home treatment, traditional healing) was received by 2 to 6 per cent in both areas. Spiritual healing, which involves praying only without the administration of any drugs or other substances, was used by 5 per cent or less in the two areas. In 1995, nobody reported spiritual healing as the sole form of treatment.

The proportion of reported illnesses for which no treatment was sought tends to have increased over time, although statistically the difference is not significant. In 1993 and 1994, it was more than twice as high in Murehwa



Table 4.6: *Self-reported illness by year*¹

	1993	1994	1995
Chitungwiza	(n=149)	(n=97)	(n=92)
Respiratory infection, flu, cough	13%	9%	16%
Diarrhoea	9%	8%	11%
Malaria	10%	10%	7%
Chronic diseases ²	11%	7%	5%
Pneumonia	3%	6%	8%
Childhood diseases	6%	4%	7%
Pregnancy-related illness	3%	2%	4%
Soar throat/ tonsils/ ear	9%	4%	15%
Tooth problems	2%	2%	1%
Scabies, body rash	3%	2%	4%
Abscess, septic wounds, ulcers	4%	6%	4%
Injuries, burns, fractures	2%	3%	0%
Aches and pains	11%	21%	11%
Other illnesses	10%	10%	3%
General malaise	1%	4%	3%
Murehwa district	(n=162)	(n=98)	(n=114)
Respiratory infection, flu, cough	17%	8%	22%
Diarrhoea	9%	20%	11%
Malaria	6%	8%	12%
Chronic diseases ²	4%	7%	2%
Pneumonia	3%	5%	2%
Childhood diseases	2%	2%	2%
Pregnancy-related illness	0%	1%	3%
Soar throat/ tonsils/ ear	7%	4%	6%
Tooth problems	0%	1%	2%
Scabies, body rash	8%	2%	4%
Abscess, septic wounds, ulcers	7%	6%	3%
Injuries, burns, fractures	4%	3%	3%
Aches and pains	17%	16%	20%
Other illnesses	6%	10%	6%
General malaise	9%	5%	4%

¹ Sexually transmitted diseases and AIDS are likely to have occurred but they were not reported, except for three cases of pelvic inflammation in Chitungwiza in 1993; they may have been vaguely described and, therefore, categorised under body rash, general malaise or other illnesses

² Chronic diseases include TB, diabetes and chronic heart problems

Table 4.7: Treatment received by those who reported ill in Chitungwiza and Murehwa district by year ¹

	1993	1994	1995
Chitungwiza	(n=149)	(n=97)	(n=92)
Formal sector medical treatment	79%	89%	80%
Informal sector medical treatment	6%	2%	2%
Spiritual healing	5%	1%	0%
No treatment at all	10%	8%	17%
Murehwa district	(n=162)	(n=98)	(n=114)
Formal sector medical treatment	71%	67%	71%
Informal sector medical treatment	6%	6%	2%
Spiritual healing	2%	4%	0%
No treatment at all	21%	22%	27%

¹ Figures in this table relate to the first place of treatment

district as in Chitungwiza. In 1995, more than one-quarter of the Murehwa district residents who were ill went without treatment, whereas for Chitungwiza residents this was the case for about one person in six (17 per cent).

Not having money for treatment was cited as the main reason for not seeking treatment in most cases (5, 6 and 8 cases respectively in the three survey years in Chitungwiza, and 18, 14 and 7 cases in Murehwa district). Not having enough money to pay for transport was the second most common reason given by households in Murehwa district. Others considered their illness not serious enough to seek treatment, whereas a few households said they never went to clinics or hospitals because of their religion.

Table 4.8 shows that less than two-thirds (62 to 64 per cent) of those who sought their first treatment from the formal sector in Chitungwiza went to their nearest clinic or hospital. Almost one-quarter (23 to 24 per cent) visited a private doctor. In Murehwa district, 81 to 91 per cent used their nearest health facility and not more than 5 per cent went to a private doctor.

Of those seeking treatment from the public sector (as opposed to the private sector) in Murehwa district, the proportion of patients who went to their nearest health facility rather than some other clinic or hospital increased in the first year and remained stable in the second year ($p < 0.05$). The increase between 1993 and 1994 could well be the result of changes in the health fee structure, by which the government wanted to encourage patients to use their nearest facility so as to strengthen the referral system. In Chitungwiza, however, this does not seem to have happened.





Table 4.8: *First place of treatment of those seeking treatment from the formal sector by year*

	1993	1994	1995
Chitungwiza	(n=118)	(n=86)	(n=74)
Nearest clinic or hospital	64%	63%	62%
Other clinic or hospital	13%	14%	14%
Private doctor	23%	23%	24%
Murehwa district	(n=115)	(n=66)	(n=81)
Nearest clinic or hospital	81%	91%	91%
Other clinic or hospital	17%	9%	4%
Private doctor	3%	0%	5%

4.3 Cost of medical care

Cost of treatment

Among those who went to a public health facility in Chitungwiza, the proportion of patients who paid for the services declined over the years, although not significantly in statistical terms. In 1995, still more than one-half of the patients were paying (see Table 4.9). In Murehwa district there was a huge decline in paying patients between 1994 and 1995. This is attributed to the abolition of fees at the rural health centre level in early 1995. The 19 per cent who still paid a fee in 1995 did so at one of the hospitals.

Table 4.9: *Proportion of paying patients among those who sought treatment from a public health facility by year*

	1993	1994	1995	Significance of difference
Chitungwiza	(n=91)	(n=66)	(n=56)	Not significant
	71%	62%	55%	
Murehwa district	(n=112)	(n=66)	(n=77)	p<0.0000
	59%	68%	19%	

Table 4.10 then shows the actual amount of money that was paid on average by patients visiting a public health facility. The average cost of treatment in Chitungwiza almost doubled between 1993 and 1994. Whereas the fees at the



Chitungwiza municipal clinics in 1993 were ZWD 1.50 and ZWD 3.60 for children and adults respectively, the actual cost of treatment that was incurred was more than ZWD 6 on average. There are three reasons for this: first, some patients incurred higher costs as they went to the hospital rather than one of the clinics; second, drugs were usually not included in the consultation fee, so they were charged for separately; and third, some patients were referred from the clinic to a private pharmacy, and incurred extra costs for drugs.

In Murehwa district, the average cost of treatment also increased considerably over the three years, rising to almost ZWD 13 in 1995 or almost twice the fee charged at rural health centres. This is mainly because most of those who paid went to one of the two hospitals in the district, which charge consultation fees of ZWD 17 for adults and ZWD 8.50 for children.

Table 4.10: Consultation fees ¹ and actual average cost of treatment incurred by those going to public health facilities, by year (in ZWD)

	1993	1994	1995
Chitungwiza			
Children's consultation fee	\$ 1.50	\$ 8.00	\$ 8.00
Adults' consultation fee	\$ 3.60	\$ 16.00	\$ 16.00
Average cost of treatment	\$ 6.20	\$ 12.00	\$ 10.59
Murehwa district			
Children's consultation fee	\$ 1.00	\$ 3.00	nil
Adults' consultation fee	\$ 1.50	\$ 6.50	nil
Average cost of treatment	\$ 6.67	\$ 8.26	\$ 12.68

¹ Consultation fees are those charged at municipal clinics (Chitungwiza) and rural health centres (Murehwa district)

In 1994 and in 1995 there were five cases in Chitungwiza that paid twice: first they paid for their initial treatment at one of the municipal clinics and, after being referred, they paid the outpatients consultation fee at Chitungwiza General Hospital. As stated in section 3.7, this is against the rules laid out by the government, but it happens because municipal clinics and the general hospital come under different authorities and have different sources of funding.

Non-medical aid patients visiting private doctors in 1994 (all from Chitungwiza) paid ZWD 66 on average for consultation and medication. In 1995 this rose to ZWD 81 (including two cases from Murehwa district, the rest from Chitungwiza). Thus, the cost of medical treatment from the private sector is five to eight times higher than that of treatment from the public





sector. Spiritual healers do not charge for their services, but those who consulted traditional healers paid between ZWD 10 and ZWD 30.

Travel time and cost

Eighty-five per cent of those seeking treatment in Chitungwiza in 1993 reached the first place of treatment in less than one hour. In Murehwa district, where many people live at greater distances from health facilities, this was only 42 per cent.

In Chitungwiza, the proportion of patients who incurred costs in reaching the first place of treatment declined from 23 per cent in 1993 and 21 per cent in 1994 to 14 per cent in 1995. In 1993, 60 per cent paid less than ZWD 2 for a single trip. In 1994 this fell to 26 per cent, and in 1995 nobody paid less than ZWD 2, with an average cost of ZWD 6.90. In Murehwa district, 21 per cent incurred costs in reaching the first place of treatment in 1993, compared to 32 per cent in 1994 and 22 per cent in 1995. While 42 per cent paid less than two dollars for a single trip in 1993, a year later this was 38 per cent; in 1995 it fell to 28 per cent, with an average cost of ZWD 4.74. These figures indicate that the cost of transport for people seeking medical treatment increased significantly over the three years that the study was conducted.

4.4 Utilisation and cost of maternal health services

Institutional delivery of babies is generally considered much safer than home deliveries, but requires a deliberate choice by the mother, or in many cases a joint decision by the mother and her husband (or some other household member with authority). The majority of women who had a baby between mid-1994 and mid-1995 claimed they booked for delivery and paid the maternity fee when going for antenatal care (93 per cent in Chitungwiza, 90 per cent in Murehwa district). However, there is strong evidence that home deliveries in Murehwa district are on the increase. Table 4.11 shows that the proportion of home deliveries has increased steadily from an estimated 18 per cent in the period 1988–91 to 38 per cent in 1995 ($X^2=7.41$, d.f.=3, $p=0.06$). In Chitungwiza, there is no such trend, although a record 10 per cent of the reported deliveries in 1994 did not take place at a health institution.

Of the 14 home deliveries reported in 1994, three were from families who were members of the Apostolic Faith who generally refuse modern medical care. In 1995, five out of 16 women who had home deliveries were Apostolic Faith members. This suggests that the majority of women who have home deliveries (70 to 80 per cent) have reasons other than religious ones for not having their babies at a health institution. Distance from home to the clinic



Table 4.11: *Home deliveries as a proportion of total reported deliveries in Chitungwiza and Murehwa district by period*

	1988–1991 ¹	1992–mid 93	mid 93–mid 94	mid 94–mid 95 ²	Significance of difference
Chitungwiza	(n=259) 4%	(n=72) 4%	(n=42) 10%	(n=34) 3%	Not significant
Murehwa district	(n=217) 18%	(n=100) 21%	(n=42) 24%	(n=43) 38%	p=0.06

¹ Data for 1988–91 were obtained in the 1993 baseline survey

² Place of delivery was not reported in 1995 for four Chitungwiza households and three Murehwa district households

(especially in rural areas) and financial constraints seem the most plausible reasons.

Table 4.12 gives an overview of the maternity fees that were paid in four different periods. In Chitungwiza, the proportion of women paying maternity fees has decreased over the years to about two-thirds in 1995. In the rural area, this has not been the case and in the 1995 survey 97 per cent of the women who delivered at health facilities reported having paid maternity fees.

Table 4.12: *Maternity fees paid at health facilities by period (in ZWD)* ^{1, 2}

	1988–1991	1992–mid 93	mid 93–mid 94	mid 94–mid 95
Chitungwiza	(n=243)	(n=69)	(n=39)	(n=33)
women paying fees	87%	87%	74%	66%
mean fee paid	\$ 51	\$ 64	\$ 126	\$ 119
mode	\$ 15	\$ 65	\$ 120	\$ 120
Murehwa district	(n=202)	(n=98)	(n=39)	(n=39)
women paying fees	89%	91%	82%	97%
mean fee paid	\$ 22	\$ 21	\$ 28	\$ 42
mode	\$ 7	\$ 7	\$ 12	\$ 10

¹ n = number of women who booked and/or delivered at health institutions

² Fees do not include ward fees levied for staying overnight in the hospital or clinic

Those who paid in Chitungwiza saw the increase in fees almost double between 1993 and 1994 to ZWD 120. Compared to what most women paid





five years earlier, the increase was up to eightfold. The fee increase in Murehwa district was much more modest: most women paid ZWD 10 or ZWD 12 but those who delivered in one of the hospitals paid ZWD 60.

It is concluded that in Chitungwiza, the huge increase in maternity fees has *not* led to a corresponding increase in home deliveries. But in Murehwa district, home deliveries have increased *despite* a much more modest increase in maternity fees.



5. Changes in child nutritional status (1993–95)

Two indicators of child nutritional status are considered in the study: height-for-age and weight-for-height. If a child's height-for-age is below a certain level (-2 standard deviations from the median of the reference height-for-age curve), the child is considered stunted. This indicates chronic malnutrition due to long-term food deficiencies and/or disease. A child is considered wasted if its weight-for-height is low (below -2 standard deviations from the median of the reference weight-for-height curve), indicating acute malnutrition. Anthropometric measurements—height and weight—were taken as described in Section 2.2. Analysis of anthropometric data was done in two different ways. First, the 1993, 1994 and 1995 data sets were compared with each other in an unpaired way. For this, the three samples were considered cross-sections, involving all children who met the respective age criteria (12 to 59 months in 1993; 12 to 71 months in 1994; and 12 to 83 months in 1995) and for whom complete and valid measurements were obtained. Second, a paired analysis was done involving those children for whom complete measurements were obtained in at least two of the three survey years.

5.1 Unpaired analysis

Table 5.1 provides a description of the samples of children in each of the three survey years. It shows the sex and age distribution of children with complete and valid measurements that were included in the unpaired analysis of the 1993, 1994 and 1995 data sets for both the urban and the rural areas. It shows that in Chitungwiza, the proportion of boys in the samples increased over the three years, from 50.8 per cent to 56.6 per cent. This is due to a lower follow-up rate for girls, because they appear to be moved to other households more often than boys, often to rural areas.

Table 5.2 shows the mean height-for-age and weight-for-height Z-scores in the three consecutive years, as well as the proportion of children found stunted and the proportion of children found wasted.

None of the changes in parameters for Chitungwiza was found statistically significant, indicating that there was no overall change in chronic or acute malnutrition among children. For Murehwa district, though, significant differences were found in two parameters. First, weight-for-height deteriorated between 1993 and 1994 ($p < 0.001$). Between 1994 and 1995, there was a slight improvement, but over the two-year period (1993 to 1995) the differ





Table 5.1: Sex and age distribution of children with complete and valid anthropometric measurements (unpaired data)

	1993	1994	1995
Chitungwiza	(N=368)	(N=273)	(N=302)
Girls	181 (49.2%)	124 (45.4%)	131 (43.4%)
Boys	187 (50.8%)	149 (54.6%)	171 (56.6%)
12–23 months	96 (26.1%)	25 (9.2%)	35 (11.6%)
24–35 months	92 (25.0%)	59 (21.6%)	33 (10.9%)
36–47 months	101 (27.4%)	59 (21.6%)	59 (19.5%)
48–59 months	79 (21.5%)	75 (27.5%)	53 (17.5%)
60–71 months	-	55 (20.1%)	66 (21.9%)
72–83 months	-	-	56 (18.5%)
mean age (in months, ± 1 s.d.)	35.4 \pm 13.6	45.3 \pm 15.1	51.9 \pm 19.6
Murehwa district	(N=365)	(N=299)	(N=378)
Girls	168 (46.0%)	133 (44.5%)	177 (46.8%)
Boys	197 (54.0%)	166 (55.5%)	201 (53.2%)
12–23 months	109 (29.9%)	35 (11.7%)	45 (11.9%)
24–35 months	93 (25.5%)	77 (25.8%)	44 (11.6%)
36–47 months	92 (25.2%)	74 (24.7%)	77 (20.4%)
48–59 months	71 (19.5%)	67 (22.4%)	78 (20.6%)
60–71 months	-	46 (15.4%)	77 (20.4%)
72–83 months	-	-	57 (15.1%)
mean age (in months, ± 1 s.d.)	34.0 \pm 13.6	42.2 \pm 15.3	50.3 \pm 19.1

Table 5.2: Child nutritional status in 1993, 1994 and 1995 (unpaired data)¹

	1993	1994	1995
Chitungwiza	(N=368)	(N=273)	(N=302)
Mean height/age Z-score	-1.058	-0.888	-0.919
% Children stunted	19.8%	17.2%	19.5%
Mean weight/height Z-score	+0.063	+0.009	+0.142
% Children wasted	2.2%	2.2%	1.3%
Murehwa district	(N=365)	(N=299)	(N=378)
Mean height/age Z-score	-1.387	-1.339	-0.918
% Children stunted	29.3%	25.4%	18.5%
Mean weight/height Z-score	+0.157	-0.219	-0.135
% Children wasted	1.9%	3.7%	4.0%

¹ Stunted children are those whose height-for-age is more than two standard deviations below the reference curve; those wasted are the ones with weight-for-height more than two standard deviations below the reference curve.



ence was still significant ($p < 0.001$). In line with this, the proportion of children found wasted increased from 1.9 per cent in 1993 to 3.7 per cent in 1994 and further to 4.0 per cent in 1995, but these differences were not statistically significant. Second, height-for-age improved between 1994 and 1995 ($p < 0.001$), and in line with this, the proportion of children found stunted decreased from 25.4 per cent to 18.5 per cent ($X^2 = 4.70$; $p = 0.03$). Height-for-age was worst at baseline in 1993, with 29.3 per cent of the children stunted, but the difference from the 1994 figures was minor. A tentative conclusion from this would be that in Murehwa district a period of short-term food deprivation between 1993 and 1994 was followed by a year during which long-term food deficiencies were reduced.

However, some of the above changes may be due to ageing of the sampled children, whereas other differences may be masked for the same reason. Therefore, a further analysis is required that takes into account the differences in age composition of the samples in the respective survey years. Tables 5.3a and 5.3b respectively show the nutritional status by age category for Chitungwiza and Murehwa district. (It should be noted that most of the children between 12 and 23 months of age in 1993 are in the 24 to 35 month age category in 1994 and in the 36 to 47 month category in 1995. The children aged 12 to 23 months in 1994 were newly recruited into the study as they were too young to be measured in 1993. Similarly, those aged 12 to 23 months in 1995 were newly recruited into the study.)

Figures 5.1 and 5.2 (see annex) give graphic representations of the Chitungwiza data contained in Table 5.3a. The mean height-for-age Z-score of the one-year-old children in 1993 was much lower than that of the older children. Also, the proportion of children stunted in 1993 among the one-year-old children (31 per cent) was much higher than among the three- and four-year-olds (11 and 14 per cent respectively). In 1994, the levels of stunting were above average in *both* the one- and two-year-old children, whereas in 1995 the one-, two- *and* three-year-old children were relatively more affected. In other words, the three-year-old children in 1995 were much worse off than children who were at that age in 1993. This will be discussed below. The mean weight-for-height Z-scores also differ according to age. The younger children, especially the one-year-olds, have the best scores, although this is not reflected in differential percentages of malnourished children. It appears that the three- to five-year-old children are relatively the most vulnerable to acute food deprivation. The overall score for the 12- to 59-month-old children was much better in 1995 than in the first two years, suggesting a recovery from short-term household food deficiencies.

For Murehwa district, the trends are different as shown in Table 5.3b and Figures 5.3 and 5.4 (see annex). Height-for-age was worst among the one-year-old children in 1993 (43 per cent stunting) and the one- and two-year-



Table 5.3a: *Child nutritional status by age category in the three survey years in Chitungwiza: mean Z-scores and percentage malnourished*

	1993		1994		1995	
	Mean Z-score	% Maln.	Mean Z-score	% Maln.	Mean Z-score	% Maln.
	(N=368)		(N=273)		(N=302)	
Height-for-age:						
12-23 months	-1.308	31%	-1.088	24%	-1.117	31%
24-35 months	-0.981	23%	-1.076	36%	-1.027	24%
36-47 months	-0.940	11%	-1.007	19%	-1.310	31%
48-59 months	-0.995	14%	-0.728	7%	-1.004	21%
60-71 months			-0.687	7%	-0.788	12%
72-83 months					-0.395	5%
Overall 12-59 months	-1.058	20%	-0.939	20%	-1.131	27%
Overall 12-83 months	-1.058		-0.888		-0.919	
Weight-for-height:						
12-23 months	+0.297	4%	+0.792	0%	+0.251	3%
24-35 months	+0.134	1%	+0.019	2%	+0.527	3%
36-47 months	-0.091	2%	+0.217	0%	+0.185	0%
48-59 months	-0.105	1%	-0.235	0%	+0.126	2%
60-71 months			-0.247	9%	-0.106	2%
72-83 months					+0.111	0%
Overall 12-59 months	+0.063	2%	+0.074	1%	+0.243	2%
Overall 12-83 months	+0.063		+0.009		+0.142	

old children in 1994 (43 and 38 per cent stunting). The overall height-for-age Z-score for 12- to 59-month-old children improved between 1994 and 1995. Weight-for-height differences among age categories are small but the mean Z-scores for 1994 are consistently lower than those for 1993, suggesting more widespread acute food deprivation in 1994.

It is interesting to compare the two study areas, Chitungwiza and Murehwa district, with regard to child nutritional status. This is done in Table 5.4. In terms of the mean height-for-age Z-score, the difference between the two areas was significant in 1993 ($p < 0.001$) and in 1994 ($p < 0.0001$), but in 1995 there was no longer a difference. In terms of the mean weight-for-height Z-score, there was no difference between the two areas in 1993, but in the two subsequent years, Chitungwiza children had better scores than children in Murehwa district ($p < 0.01$ in both 1994 and 1995).

It is concluded that children in Chitungwiza are generally better off in terms of their nutritional status than children in Murehwa district. The difference was especially prominent in 1994, when both the mean height-for-



Table 5.3b: Child nutritional status by age category in the three survey years in Murehwa district: mean Z-scores and percentage malnourished

	1993		1994		1995	
	Mean Z-score	% Maln.	Mean Z-score	% Maln.	Mean Z-score	% Maln.
	(N=365)		(N=299)		(N=378)	
Height-for-age:						
12-23 months	-1.749	43%	-1.917	43%	-0.749	20%
24-35 months	-1.219	28%	-1.613	38%	-1.107	30%
36-47 months	-1.141	20%	-1.192	20%	-1.108	18%
48-59 months	-1.374	23%	-1.064	12%	-0.956	15%
60-71 months			-1.078	20%	-0.808	19%
72-83 months					-0.747	12%
Overall 12-59 months	-1.387	29%	-1.387	26%	-0.993	20%
Overall 12-83 months	-1.387		-1.339		-0.918	
Weight-for-height:						
12-23 months	+0.159	2%	-0.211	9%	-0.102	9%
24-35 months	+0.217	3%	-0.096	1%	-0.234	5%
36-47 months	+0.105	1%	-0.216	5%	-0.081	4%
48-59 months	+0.142	1%	-0.260	1%	-0.165	1%
60-71 months			-0.374	4%	-0.147	4%
72-83 months					-0.098	4%
Overall 12-59 months	+0.157	2%	-0.191	4%	-0.139	4%
Overall 12-83 months	+0.157		-0.219		-0.135	

Table 5.4: Comparison of Chitungwiza and Murehwa district with respect to child nutritional status in 1993, 1994 and 1995 by indicator

	Chitungwiza versus Murehwa district		
	1993	1994	1995
Height-for-Age mean Z-score	-1.058 vs -1.387 p<0.001	-0.888 vs -1.339 p<0.0001	-0.919 vs -0.918 no difference
Weight-for-Height mean Z-score	+0.063 vs +0.157 not significant	+0.009 vs -0.219 p<0.01	+0.142 vs -0.135 p<0.01

age and the mean weight-for-height were better in the urban area than in the rural area. However, a shift has occurred: in the first two years (1993 and 1994), Chitungwiza children suffered less from *chronic* food deprivation than

their counterparts in Murehwa district, whereas in the last two years (1994 and 1995) they suffered less from *acute* food deprivation.

Bivariate analysis revealed that there is no difference in the mean height-for-age or weight-for-height between boys and girls in any of the years. Twin children, however, appear to be more often malnourished than single children: wasting was significantly more frequent among twin children in 1994 ($p < 0.0001$) and 1995 ($p < 0.01$) and stunting was also more frequent among twin children in 1994 ($p = 0.05$) and 1995 ($p < 0.0000$). Geographical differences were found for several of the indicators of nutritional status. When comparing the ten different wards in Chitungwiza with each other, it was found that two of six indicators differed significantly (namely the mean height-for-age Z-score in 1993 and the mean weight-for-height Z-score in 1995, as shown below). The wards where child nutritional status was worst are wards 3, 4 and 5, which together form part of St Mary's Unit, and to a lesser extent ward 17, which is popularly known as Unit K.

Similarly, when comparing the 20 geographical wards from which the children in Murehwa district were drawn, four of six indicators were found to be different (the mean height-for-age Z-scores in 1993 and 1995, and the mean weight-for-height Z-scores in 1994 and 1995). Child nutritional status, both in terms of height-for-age and weight-for-height, was consistently poor throughout the three years in three wards: Zengenene, Zorizozo and Mhembere. These three wards are all in the western part of Murehwa district.

Indicator	Statistical test ¹	Significance
Chitungwiza (d.f.=9):		
Height-for-age 1993	F = 3.12	p = 0.002
Height-for-age 1994	F = 1.78	p = 0.087
Height-for-age 1995	H = 5.80	p = 0.760
Weight-for-height 1993	H = 9.84	p = 0.360
Weight-for-height 1994	F = 1.56	p = 0.127
Weight-for-height 1995	H = 23.56	p = 0.005
Murehwa district (d.f.=19):		
Height-for-age 1993	F = 2.01	p = 0.008
Height-for-age 1994	H = 11.67	p = 0.901
Height-for-age 1995	H = 40.56	p = 0.000
Weight-for-height 1993	F = 1.38	p = 0.137
Weight-for-height 1994	F = 1.90	p = 0.014
Weight-for-height 1995	H = 38.81	p = 0.005*

¹ F-test was performed when the variances in the samples were homogeneous. Otherwise the non-parametric Kruskal-Wallis test (with parameter H) was performed





Further bivariate analysis to explore possible associations between nutritional status and various socioeconomic variables is continuing and will be reported later.

Discussion

Results of various national surveys suggest that levels of stunting in the 1980s remained constant and that wasting declined rapidly in the first years after independence, and remained at very low levels at least until 1988. A re-analysis of the data of the Demographic and Health Surveys (DHS) conducted in 1982 and 1986, however, suggested that values for wasting and stunting in 1988 were less than half of those found in 1982 (Tagwireyi and Greiner, 1994). Huge variations in malnutrition rates have been found between geographical areas. Children living in drought-prone Masvingo province and Matabeleland, as well as those in Mashonaland Central province, with its high concentration of seasonal labourers on large-scale commercial farms, are known to have poorer nutritional status than children elsewhere.

Mashonaland East province, of which Murehwa district forms part, was among the provinces with the lowest percentage of stunting in 1985 and 1988 (25 to 26 per cent compared with the national rural average of 34 per cent). For some unknown reason, the nutrition surveillance data for 1989–90 showed that Chitungwiza had a lower percentage of children “below the line” (third percentile of weight-for-age) than any province or other major city (less than 2.5 per cent; Tagwireyi and Greiner, 1994). This is confirmed by an analysis of clinic-based data over the period 1991–95 that was done as part of the current study (see Section 5.3). The 1988 DHS found 14 per cent stunting among urban under-fives compared with 34 per cent in the rural sample. Six years later, the DHS assessed nutritional status in children under three years of age. Stunting among urban children was worse than in 1988 (17.6 per cent), but among rural children the situation had improved (22.8 per cent; CSO and DHS/Macro International Inc., 1995).

The 1994 data for the current study indicates similar figures: 17.2 per cent stunting in Chitungwiza and 25.4 per cent stunting in Murehwa district. Some sources indicate that wasting in urban areas is worse than in rural areas, but the 1994 DHS found no big difference (6.1 per cent urban, 5.3 per cent rural). The current study finds lower figures: 2.2 per cent wasting in Chitungwiza, 3.7 per cent in Murehwa district (1994 data). It is striking that within Chitungwiza there seem to be important differences in child nutritional status between the various wards. In Murehwa district, the differences are even bigger. This will be further discussed after the presentation of the results of the paired analysis in section 5.2.



Variations also occur between age categories. Most studies indicate that stunting begins early among Zimbabwean infants. Tagwireyi and Greiner (1994) suggest that infants may be stunted at birth, due to poor nutritional status of the mother, although this is difficult to prove because reliable community-based data on birth weight are very hard to come by. Most sources indicate that the worst levels of stunting are found in the age range of 18 months (one-and-a-half years) to 42 months (three-and-a-half years), after which there is a gradual recovery. The current study does not entirely confirm this.

As shown above, stunting in 1993 was worst in the age category 12 to 23 months in both areas. In Chitungwiza the higher than average levels of stunting among one-year-old children in 1993 was carried over to the one- to two-year-old children in 1994 and to the one- to three-year-old children in 1995. This means that children who were already stunted in 1993, probably due to a combination of poor maternal nutrition and feeding problems during infancy, have not been able to recover in subsequent years. Therefore, stunting in 1995 was not only high among the one-year-old children but also among the two- and three-year-old children. In 1993, the two- and three-year-old children had low levels of stunting. It is possible that the one-year-old children in 1993 were born underheight due to dietary stress of the mother during pregnancy. They were all born between mid-1991 and mid-1992, implying that their mothers' pregnancies were between late 1990 and mid-1992. There may also have been problems with feeding during the children's infancy, which was between mid-1991 and mid-1993. It can be concluded that these negative influences stem from the period 1991 to mid-93, and that they were absent before 1991. It is not likely that drought was part of the negative influence, as Chitungwiza households generally depend on non-agricultural Adverse economic conditions seem a more likely explanation for the observed increase in stunting. In Murehwa district, the same phenomenon is observed between 1993 and 1994, but the poor stunting levels among one- and two-year-old children in 1994 have not been carried over into 1995. This means that children have to some extent been able to recover from stunting, probably because of relatively good harvests.

Nutritional surveys are usually not repeated in the same community. Tagwireyi and Greiner (1994) mention Kinsey's studies among children living in resettlement areas in Zimbabwe. Kinsey took anthropometric measurements of children aged three to sixty months during three drought seasons (1983–84, 1986–87 and 1991–92) in villages in three resettlement schemes. In 1993, the survey was repeated, but the age range was expanded to increase the sample size and to include children who had been under five years of age in the 1991–92 survey round. Analysis was done in a cross-sectional way, similar to the above analysis. Prospective studies which



measure the growth of individual children are very rare. Moy and others conducted a study of child growth in a sample of 204 infants under one year of age for 22 months in the late 1980s (see Tagwireyi and Greiner, 1992). Unfortunately, the analysis was not done in a paired fashion.

5.2 Paired analysis

The total number of children with valid and complete measurements in all three survey years is 190 for Chitungwiza and 216 for Murehwa district. This corresponds to 52 per cent and 59 per cent of the original samples at baseline in the two respective areas. Table 5.5 shows the number of children for whom paired anthropometric measurements are available.

Table 5.5: *Number of children with paired anthropometric measurements*

	1993 & 1994	1994 & 1995	1993 & 1994	all 3 years
Chitungwiza	241	215	224	190
Murehwa district	256	247	277	216

Loss of follow-up of children between 1993 and 1994 was not related to nutritional status at the 1993 baseline survey for either of the two areas. For children in Chitungwiza, the loss of follow-up between 1994 and 1995 was also not related to either height-for-age or weight-for-height. In Murehwa district, however, there was a relation between loss of follow-up of children between 1994 and 1995 and height-for-age: the children who were measured in 1995 had a better mean height-for-age in 1994 than those who were not followed up ($p < 0.01$). In accordance with this, the proportion of stunting in the two groups was significantly different (42 per cent moderate-to-severe stunting versus 22 per cent; $p < 0.01$). In other words, many of the children who were stunted in 1994 were not measured a year later. The reasons they were not measured varied: six children were from four different households that were not followed-up; one child had died; one had moved to Harare because the family had nothing to eat; several other children were staying elsewhere temporarily for unknown reasons; and others were absent at the time when the research assistants visited their families. The high loss of follow-up of stunted children has implications for the interpretation of the findings resulting from both the unpaired and the paired analysis.

Table 5.6 shows the sex and age distribution of the children with complete measurements in all three survey years. The children in Chitung-

wiza were on average 2.4 months older than those in Murehwa district (p=0.06).



Table 5.6: Sex and age distribution of children with complete and valid anthropometric measurements involved in paired analysis of 1993, 1994 and 1995 data

Sex and age ¹	Chitungwiza (n=190)	Murehwa district (n=216)
Girls	81 (42.6%)	99 (45.8%)
Boys	109 (57.4%)	117 (54.2%)
12-23 months	46 (24.2%)	62 (28.7%)
24-35 months	45 (20.8%)	64 (29.6%)
36-47 months	61 (28.2%)	52 (24.1%)
48-59 months	38 (17.6%)	38 (17.6%)
mean age (in months, \pm 1 s.d.)	35.6 \pm 12.9	33.2 \pm 13.2

¹Ages are calculated as at the 1993 baseline

The paired analysis implied that for each child with at least two sets of anthropometric measurements, the differences in Z-scores were calculated for both the height-for-age and the weight-for height indicators. Thus, the mean change in Z-scores was calculated between 1993 and 1994, as well as between 1994 and 1995. In addition, the mean change over the entire two-year period (1993 to 1995) was calculated. The advantage of calculating the mean change in Z-score through this paired analysis, rather than comparing the mean Z-scores of two or more samples through unpaired analysis (as is done in section 5.1), is that in the paired analysis the samples are identical so that there is no possibility of confounding the variables influencing the data.

Table 5.7 shows that in Chitungwiza, height-for-age improved significantly between 1993 and 1994 ($p < 0.01$) but remained almost unchanged in the year thereafter. Overall, the improvement between 1993 and 1995 is statistically significant ($p < 0.01$). Weight-for-height, on the other hand, deteriorated in the first year ($p < 0.05$), but partly recovered in the second year. A slight improvement was detected over the two years, but this was not statistically significant. In Murehwa district, height-for-age improved significantly in both years, with an overall gain in Z-score of almost one-half a point over the two-year period ($p < 0.0001$). The improvement between 1994 and 1995, however, should be attributed in part to the abovementioned high loss of follow-up of stunted children. The mean weight-for-height severely deteriorated in the first year ($p < 0.0001$). Despite a small recovery in the second year, the overall change over two years is still significantly negative ($p < 0.001$).

Table 5.7: *Absolute change in nutritional status in Chitungwiza and Murehwa district by indicator and by age category (paired data)*¹

	Mean change in Z-scores		
	1994 versus 1993	1995 versus 1994	1995 versus 1993
Chitungwiza	(n=241)	(n=215)	(n=224)
Height-for-age			
24-35 months	+ 0.362	+ 0.155	
36-47 months	+ 0.090	- 0.186	+ 0.164
48-59 months	+ 0.226	+ 0.018	+ 0.124
60-71 months	+ 0.275	- 0.086	+ 0.117
72-83 months		+ 0.215	+ 0.530
Overall	+ 0.236 (p<0.01)	- 0.002 (not significant)	+ 0.219 (p<0.01)
Weight-for-height			
24-35 months	- 0.261	- 0.080	
36-47 months	+ 0.149	+ 0.133	- 0.122
48-59 months	- 0.151	- 0.036	+ 0.147
60-71 months	- 0.348	+ 0.060	- 0.063
72-83 months		+ 0.420	+ 0.152
Overall	- 0.143 (p<0.05)	+ 0.111 (not significant)	+ 0.018 (not significant)
Murehwa district:	(n=256)	(n=247)	(n=277)
Height-for-age			
24-35 months	+ 0.239	+ 0.455	
36-47 months	+ 0.078	+ 0.335	+ 0.550
48-59 months	+ 0.191	+ 0.194	+ 0.356
60-71 months	+ 0.409	+ 0.139	+ 0.287
72-83 months		+ 0.250	+ 0.694
Overall	+ 0.211 (p<0.01)	+ 0.254 (p<0.001)	+ 0.459 (p<0.0001)
Weight-for-height			
24-35 months	- 0.279	- 0.040	
36-47 months	- 0.456	- 0.079	- 0.300
48-59 months	- 0.415	+ 0.143	- 0.432
60-71 months	- 0.335	+ 0.191	- 0.157
72-83 months		+ 0.206	- 0.209
Overall	- 0.372 (p<0.0001)	+ 0.089 (not significant)	- 0.283 (p<0.001)

¹ Ages are as calculated for the year first mentioned in the heading of each column.





Figures 5.5 to 5.8 (see annex) show the mean change in Z-scores over time for these paired measurements by age categories. Although some of the differences between age categories seem quite prominent, none is statistically significant. This could be due to the relatively small number of children per age category.

The above analysis considered change in nutritional status *irrespective* of the nutritional status at baseline. It was also necessary to investigate whether deterioration in height-for-age occurred mainly in children who were already stunted or in those who were not stunted; and similarly, whether deterioration in weight-for-height occurred more frequently in children already wasted at baseline or in those not wasted. Therefore, the sample of children was stratified into three categories according to their height-for-age status in 1993: the well-nourished (above -1 Z-score), the mildly stunted (between -1 and -2 Z-scores) and the moderately or severely stunted children (below -2 Z-scores). With regard to wasting, different cut-off points were used so as to have adequate numbers of children in each stratum (above 0 Z-score, between 0 and -1 Z-score, and below -1 Z-score). Analysis of variance showed that for all differences in the mean Z-scores that were considered (1993 versus 1994, 1993 versus 1995 and 1994 versus 1995) the moderately to severely malnourished children improved most, whereas the well-nourished children deteriorated most, with the mildly malnourished children taking the position in between the two other categories. This means that a deterioration in nutritional status is usually followed by an improvement, while an improvement is in most cases followed by a deterioration. It is generally not the case that children with a poor nutritional status deteriorate further. Only one child was identified who was mildly wasted in 1993 and 1994 and deteriorated by more than one standard deviation to moderately wasted in 1995. Thirteen children who were mildly stunted in 1993, deteriorated by more than one standard deviation between 1993 and 1995 to become moderately or severely stunted (six children in Chitungwiza, seven in Murehwa district).

Bivariate analysis showed that in Chitungwiza geographical differences were statistically highly significant for five of six anthropometric indicators (see the list below). Ward 17 (Unit K) had the largest deteriorations in weight-for-height, followed by Wards 3 and 4, which together form part of St Mary's Unit.

In Murehwa district, geographical variation was found to be statistically significant for the 1994 to 1995 change in both height-for-age and weight-for-height mean Z-scores ($p < 0.001$), but not for the changes that occurred between 1993 and 1994 or between 1993 and 1995. Four wards (Chinhenga, Hokodzi, Kambarami and Murehwa Central), three of which are in the central part of Murehwa district, had a particularly strong deterioration of more



Indicator	Statistical test ¹	Significance
Chitungwiza (d.f.=9):		
Height-for-age 1993 vs 94	H = 15.36	p = 0.081
Height-for-age 1994 vs 95	H = 41.06	p = 0.000 *
Height-for-age 1993 vs 95	H = 18.60	p = 0.029 *
Weight-for-height 1993 vs 94	H = 21.16	p = 0.012 *
Weight-for-height 1994 vs 95	H = 30.24	p = 0.000 *
Weight-for-height 1993 vs 95	H = 26.54	p = 0.002 *
Murehwa district (d.f.=19):		
Height-for-age 1993 vs 94	H = 24.64	p = 0.173
Height-for-age 1994 vs 95	H = 55.82	p = 0.000 *
Height-for-age 1993 vs 95	H = 27.85	p = 0.086
Weight-for-height 1993 vs 94	H = 20.26	p = 0.379
Weight-for-height 1994 vs 95	H = 45.53	p = 0.000 *
Weight-for-height 1993 vs 95	H = 10.50	p = 0.940

¹ The non-parametric Kruskal-Wallis test (parameter H) was used because the variances in the samples were different

than one Z-score for weight-for-height between 1993 and 1994, while one ward (Shamu) deteriorated strongly between 1994 and 1995.

Further bivariate analysis to explore possible associations between change in nutritional status and various socioeconomic variables is continuing and will be reported later.

Discussion

While nutritional surveys are usually not repeated in the same communities, longitudinal studies which investigate individual children's growth are very rare. In a study in Uganda (Vella *et al.*, 1994) the heights of more than a thousand under-five-year-old children were measured in early 1987 and again two years later to determine the factors that explain stunting and recovery from it. By design, such studies are much stronger in demonstrating trends over time and associations between faltering growth and its determinants than cross-sectional surveys, even if the latter are repeated in the same community. This is because the possibility of confounding factors influencing the data is minimised by pairing the indicators of nutritional status obtained at two separate times from the same child.

In their update of the levels and trends in nutritional status in Zimbabwe, Tagwireyi and Greiner (1992) report that children's average height-for-age declines rapidly during the first nine months of life and reaches its lowest point by 20 months. This means that while children aged





two to four years are most likely to be stunted, it is during the earlier period of life that active damage from poor nutrition occurs. Poor infant feeding practices are the main contributory factor and it is believed that the lack of household food security plays an important role in this regard. The current study confirms that stunting is worst among the one-year-old children and that there is a general recovery afterwards. The improvements in height-for-age Z-scores found in the paired analysis are, therefore, to be expected. For Chitungwiza children, however, this improvement did not take place between 1994 and 1995, which could be due to long-term food deficiencies in the households. Levels of wasting deteriorated between 1993 and 1994, both in Chitungwiza and in Murehwa district, where the deterioration was very severe in all age categories. This indicates short-term deficiencies or starvation. In Chitungwiza, there was a slight improvement in weight-for-height levels between 1994 and 1995 (not statistically significant), which meant that the situation in 1995 was very similar to the situation at baseline (1993). In Murehwa district, the severe deterioration between 1993 and 1994 had hardly been reversed in the following year, leading to an overall deterioration in weight-for-height levels over the two years. This means that children in the rural area became more skinny between 1993 and 1994 and remained skinny between 1994 and 1995. This can be attributed to the combined effects of poor harvests due to drought, economic depression and probably AIDS.

It is remarkable that in many children a deterioration in nutritional status is usually followed by an improvement, while an improvement is often followed by a deterioration. This means that when cross-sectional surveys are conducted at two or more times, the children who are found stunted and wasted are not always the same. Apparently there is some natural flexibility, without which the variation in nutritional status within communities would be much bigger and the rates of severe malnutrition would be much higher.

The variation in change in child nutritional status among geographical areas is another important result. This may have some policy implications, as will be discussed in Chapter 7.

5.3 Trends in clinic-based malnutrition rates (1991–95)

Growth monitoring of children under five years of age is one of the regular activities conducted by clinic staff in Zimbabwe. The child's weight is taken and plotted on a chart against his or her age so as to establish the nutritional status and advise the child's caregiver if any problem occurs. A child is considered *underweight* if its weight-for-age falls below the curve drawn on the growth chart which represents the third percentile of the reference



weight-for-age curve.¹ Except for monitoring children's individual growth, the data are also used in an aggregated form for the entire clinic or even for the entire district or province, so as to monitor trends over time. For this purpose each health institution prepares monthly summary reports as part of the country's health information system. The reports from all the hospitals and clinics in Chitungwiza and Murehwa district over the period January 1991 to June 1995 have been used and analysed to establish whether any trends in malnutrition rates can be detected. The results are presented and discussed below.

Murehwa district

Figure 5.9 (see annex) shows the proportion of children found underweight during growth monitoring at health facilities in Murehwa district. The malnutrition rates were highest in 1992 and early 1993, when 9 to 11 per cent of all children who reported for growth monitoring were found to be underweight. This is attributed to the 1991–92 drought. A seasonal trend is visible: in four of the five years, malnutrition rates between the first and second quarter—the post-harvest period—fell by around one percentage point. In the 1992 drought year, however, the rate increased by two percentage points between the first and the second quarter. By late 1994, malnutrition had decreased to around 7 per cent, which is lower than at any time since early 1991.

Chitungwiza

The proportion of children found to be underweight during clinic-based growth monitoring in Chitungwiza showed a steady increase between mid-1991 and mid-1993 (Figure 5.9, see annex). Thereafter, there has been a slight decline. Overall, the percentage of underweight children did not exceed 3.5 per cent at any time, which is much less than what is usually found in community-based surveys. This may indicate that the children who are taken to the clinic for growth monitoring form a select group which is not representative of the total population of under-five-year-old children in Chitungwiza. The seasonal trend that was observed in the data for Murehwa district is also visible in the Chitungwiza data, though it is less prominent: in all five years the proportion of children who were underweight fell by between 0.1 and 0.6 percentage points.

¹ The third percentile is almost identical to a Z-score of -2 (or -2 standard deviations from the mean reference curve).





Discussion

Monitoring nutritional status, especially of children under five years of age, is considered one of the most sensitive methods that can be used to assess the impact of changes in health, household food security and maternal care and childcare. The rates of child malnutrition presented here, however, should be interpreted with great care as they are clinic-based and, therefore, do not necessarily provide an insight into changes in child malnutrition in society as a whole. The malnutrition rate found for Murehwa district—9 to 11 per cent in 1992 and early 1993, 7 per cent in late 1994—compares well with the rate found in the 1993 baseline household survey, which was 8.3 per cent (Bijlmakers *et al.*, 1995). For Chitungwiza, the clinic-based malnutrition rate—1 to 3.5 per cent—compares well with the very low rates reported for Chitungwiza in 1989–90 (also clinic-based; see Tagwireyi and Greiner, 1994), but it is much lower than the 7.7 per cent which was found in the 1993 baseline household survey (Bijlmakers *et al.*, 1995). The main reason for the difference is that the populations are different. In clinic-based growth monitoring a large proportion of the children weighed are due for immunisation, and many of them are infants below one year of age. Infants are usually not malnourished and they were not part of the sample in the 1993 baseline survey. It is also possible that children who are taken to the clinic for growth monitoring form a select group, in which those from well-to-do families are overrepresented. Therefore, clinic-based malnutrition data, at least for Chitungwiza, cannot be used for trend analysis.

What the data do tell us, though, is that seasonal variation in the malnutrition rates occurs, at least in Murehwa district. This has also been reported by Tagwireyi and Greiner (1994), who calculated that post-harvest declines in the proportion of children below the third percentile line on the growth chart were 10 to 30 per cent, compared to pre-harvest levels during the period 1987–89. This was attributed not only to the difficulties that people have obtaining food during the pre-harvest period, but also to increased occurrence of diarrhoeal disease in children during the rainy season as well as heavier work pressure on mothers.

Seasonal variation cannot have influenced the data on community-based child nutritional status presented in Sections 5.1 and 5.2, as the household surveys were conducted between May and July of each year (May–June in Chitungwiza and June–July in Murehwa district). This means that the anthropometric measurements were taken in a season when children's nutritional status is relatively good compared to other seasons of the year.



6. Trends in clinic-based health service utilisation and mortality (1991–95)

6.1 Background

Data on monthly health service utilisation over the period January 1991 to June 1995 from all the hospitals and clinics in Chitungwiza and Murehwa district—the same two areas where households were followed up over three years—were analysed for trends. Mortality figures reported by these institutions were also investigated, as well as child malnutrition rates found during growth monitoring of under-five-year-old children. The latter data were presented and discussed in Section 5.3. The choice of the various indicators used and the method of data collection has been described in Section 2.3. Data for Chitungwiza and Murehwa district were analysed separately. For Chitungwiza, a distinction was made between the four municipal clinics on the one hand and the General Hospital on the other. For Murehwa district, the data from 11 rural health centres were combined¹ and compared with those of the mission hospital and those of the government district hospital.

Changes in clinic-based mortality are real changes, but they may not give a true picture of the real mortality in society. Changes in service utilisation may indicate a change in the need for these services, owing to changes in the incidence of disease or in the availability of alternative forms of treatment. This is not always likely, especially when changes are abrupt. It is possible that the changes in health service utilisation are due to certain factors that influence people's *choice* to use the services. In this regard it is important to summarise the changes in user fees for health services that have taken place since early 1991 (see Table 6.1).

Chapter 1 highlighted the pressure from the World Bank on the Zimbabwean government in the early 1990s to increase revenues from user fees as part of the Economic Structural Adjustment Programme. This led to the enforcement of user fee collection in 1991 and to the increase in the exemption level at the end of 1992. In January 1993, the government instructed health facilities in rural areas not to charge fees. This measure was meant to cushion the effects of the severe drought, but it was revoked in June 1993. Some health facilities, however, were not officially informed and continued

¹ Data from one RHC (out of the total of 12 RHCs in Murehwa district) were not included because they were considered unreliable





Table 6.1: *Changes in user fee policies since 1991*

Date or period	Change
Early 1991	Enforcement of user fee collection at the start of ESAP
Late 1991	Fee increase at mission hospitals
November 1992	User fee exemption level raised from ZWD 150 to ZWD 400
January 1993	Temporary abolition of fees at rural health centres
June 1993	Reinstitution of fees at rural health centres
January 1994	Substantial increase in fees at all health institutions
March 1995	Abolition of fees at rural health centres

to provide free services until later in the year. In January 1994, the system of user fees for health services was revised dramatically, with substantial increases in charges for all services (see Table 6.2). Apart from increasing cost recovery, the new guidelines were intended to rationalise user charges across institutions so as to encourage patients to seek care from their nearest health facility and discourage them from going straight to a referral hospital. It was, therefore, anticipated that the increase in fees at provincial and district hospitals would result in a reduction in their patient load.

For people in rural areas, the changes in user fee policies have been multiple and drastic. For those in urban areas, only two changes were relevant: the elevation in exemption levels in late 1992 and the dramatic fee increases in January 1994. In addition, anecdotal evidence suggests that the procedures to obtain letters for free treatment have become more difficult and user fee collection has gradually been enforced by health staff. This may have affected service utilisation both at urban and rural health facilities, although it cannot be proven through the analysis of clinic-based data.

In order to be able to interpret the trends observed in clinic-based health service utilisation and mortality, it is also important to recall that Zimbabwe was hit by serious droughts in 1991–92 and in 1994–95. The periods during which people, especially those residing in rural areas, felt the impact of the drought most were before and into the next rainy season, that is 1992–early 1993 and 1995–early 1996.

6.2 Health service utilisation

Murehwa district: outpatient statistics

Figure 6.1 (see annex) shows the trends in the number of new patients who respectively visited the outpatient departments (OPD) of Murehwa District Hospital, the mission hospital and the average rural health centre over the four-and-a-half year period. It clearly shows that attendance levels at rural



Table 6.2: *Selected health service user fees before and after January 1994 (in ZWD)*

	Old fee	New fee ¹
Outpatient consultation fees:		
at provincial hospitals	\$ 3	\$ 26
at district hospitals	\$ 1.50	\$ 17
at Harare municipal clinics	\$ 10	\$ 20
at Chitungwiza municipal clinics	\$ 3.60	\$ 16
at rural hospitals and RHCs	\$ 1.50 to \$ 3	\$ 6.50
Booking for delivery:		
at provincial hospitals	varied	\$ 80
at district hospitals	varied	\$ 60
at Harare municipal clinics	\$ 120	\$ 120
at Chitungwiza municipal clinics	\$ 65	\$ 120
at rural hospitals and RHCs	varied	\$ 10
Ward fees (per day):		
at district hospitals	\$ 10	\$ 50
at rural hospitals and RHCs	\$ 4	\$ 10

¹ All outpatient consultation fees are for adults. The new fee schedule stipulates that children up to twelve years of age pay half the adults' fee.

health centres (RHCs) increased in the first half of 1993, when no fees were charged. There were actually more than twice as many patients seen as in late 1992. It is likely that the drought and the free distribution of food and meals for children under five years of age also attracted more patients, but those initiatives covered longer periods than the six months during which there were no fees. The higher level of OPD attendance coincided exactly with this period. Between mid-1993 and early 1995, attendance levels were slightly higher than in 1992. In the second half of 1995, outpatient visits to RHCs rose by more than one-third. This again can be attributed to the abolition of fees in March 1995.

At the district hospital, attendance levels were very high in early 1993, which must be attributed to the combined effects of drought and the free health services at RHCs. During that time, the waiting times for patients at the hospital OPD were excessive. Attendance levels started to fall in late 1993, before the huge fee increase of January 1994. The second half of 1994 showed a slight recovery. At the mission hospital, attendance levels fell during the whole of 1991 and into 1992, when user fees were increased twice. They increased during the 1992 drought year, peaking in early 1993, similar to what happened at the district hospital. After mid-1993, attendance has been falling almost continuously to a level below that of the average RHC.





This is remarkable, because the mission hospital used to receive two to three times more patients than the average RHC.

With the fee increase in January 1994, the MOHCW envisaged a strengthening of the referral system. Figure 6.1 (see annex) shows that OPD attendance at the hospitals, which had already started falling, dropped further. However, the expected increase in RHC attendance did not happen until March 1995, when fees at RHCs were abolished. Figure 6.2 (see annex) shows the total OPD attendance for the entire district. It is clear that there is a strong association between attendance and changes in user fee policies: the enforcement of fee collection in 1991, the temporary abolition of fees at RHCs in 1993, the January 1994 fee increase and the abolition of fees in March 1995.

Figure 6.3 (see annex) clearly depicts that the total number of first visits of pregnant women who reported to RHCs for antenatal care (ANC) has increased over time. At the same time, the two hospitals have seen their numbers of first ANC visits decrease (see Figure 6.4 in annex). Some of the fluctuations in monthly attendance may represent seasonal trends, others may be due to reporting errors, but the trends are clear. The average number of repeat ANC visits for the district as a whole was found to have declined from three to four in the period 1991–93 to 2.5 in 1994–95.

The total number of deliveries reported by RHCs has also increased over time, as shown in Figure 6.5 (see annex). Between 1991 and 1995 the number has more than doubled, from 20 to 30 per month to 50 to 70 per month. For the two hospitals combined, the number of deliveries has remained fairly stable at 60 to 90 per month. The total number of deliveries reported by all health institutions combined has not changed significantly over the years, as shown in Figure 6.6 (see annex). Home deliveries were not reported previously, but since mid-1994 most health facilities have been reporting the home deliveries that they knew of. The data suggest that 15 to 20 per cent of all deliveries do not take place in health institutions, but this is an underestimate as not all home deliveries are reported. In 1993, the number of home deliveries reported by RHCs was more than half the number of deliveries conducted at the RHCs themselves (56 per cent). For the period July 1994 to June 1995, this was no less than 82 per cent. Although it is hard to speak of a trend because of incomplete reports, this suggests that the number of home deliveries may be as high as, or even higher than, the number of deliveries that take place at RHCs.

Murehwa district: inpatient statistics

As far as inpatient care is concerned, Musami Mission Hospital, which has a total capacity of 150 beds, of which 33 are for maternity patients, has traditionally been at least as important as Murehwa District Hospital, which has



only 89 beds, of which 13 are for maternity patients.¹ The number of patients who stayed at the mission hospital per day decreased towards the end of 1991 and into 1992 (see Figure 6.7 in annex), following increases in ward fees and a new policy of levying separate fees for operations, X-rays, plasters, laboratory investigations and physiotherapy, which had previously been included in the outpatient or inpatient fee. The first quarter of 1993 showed a dramatic increase, which lasted for about nine months, after which it dropped back to its earlier the level of around 40 patients per day. The data are for the general wards only and exclude the maternity ward.

Figure 6.8 (see annex) shows that the 1993 increase was due to both an increase in the number of admissions and the longer stay by each patient. This was at a time when the effects of the drought were at its height, but it has not been possible to assess whether the observed increases were indeed drought-related. From the end of 1993, the average length of stay decreased more markedly than the number of patients who were admitted. It is not clear whether the shorter duration of stays was due to a change in disease profile or a deliberate attempt to reduce costs for the hospital or the patient or some other influence. It is interesting to see that for the nearby district hospital the picture was quite different. Here the number of inpatients increased during most of 1994, at a time when the mission hospital saw a decline. The increase was due to a longer average stay (second and third quarter) and an increase in the number of admissions (fourth quarter).

It is not clear what the reasons are for these changes. It appears that during the course of 1994 the district hospital became much more important than the mission hospital as far as inpatient care is concerned. Unfortunately, the inpatient statistics for the district hospital were incomplete until the fourth quarter of 1992 but according to reports by the then acting district medical officer the hospital's bed occupancy rate in 1991–92 was often more than 100 per cent (Bossyns, personal communication).² Data obtained from the maternity wards of the two hospitals were investigated as well. Important fluctuations were found in the number of admissions, but these could be due to several factors, including the temporary absence of doctors.

¹ Officially Murehwa district had only 60 beds, of which eight were maternity beds.

² A bed occupancy rate of more than 100 per cent means that some patients were given a mattress on the floor due to shortage of beds.





Chitungwiza: outpatient statistics

Figure 6.9 (see annex) shows the number of new patients who visited the outpatient department of Chitungwiza general hospital over the four-and-a-half year period. While the level of attendance over the first three years appears to have been fairly stable, there was a sharp drop in January 1994 from 3500–4000 new consultations per month to 2000–2500 per month in the first nine months of 1994. There was a slight recovery thereafter, but the earlier high levels have never been repeated. This provides strong evidence that the fee increase of January 1994 had a strong and long-lasting impact on outpatient attendance at the hospital.

The aim of the steep increase in outpatient consultation fees (from ZWD 3 to ZWD 26 at Chitungwiza General Hospital) was precisely to encourage patients to go to the nearest clinic rather than to the hospital. One would expect to see a corresponding increase in outpatient attendance at the municipal clinics in Chitungwiza. This, however, has not been the case, as is shown in Figure 6.10 (see annex). Some of the abrupt variations between months are probably due to variation in the time of submission of the monthly statistics. But it is justifiable to say that after a gradual increase between late 1992 and late 1993, attendance levels declined rather than increased in the first half of 1994. The January 1994 increase in outpatient consultation fees at the municipal clinics themselves (from ZWD 3.60 to ZWD 16) is most likely responsible for the decline. It is, therefore, tentatively concluded that the fee increases have served as a deterrent to service utilisation rather than as an instrument to rationalise and strengthen the referral system as was originally envisaged.

It has not been possible to investigate whether the decline in outpatient clinic attendance can be attributed to a reduction in attendance for minor illnesses that can be treated at home. However, it was possible to look at the differential share of specific age categories in total clinic attendance. Figure 6.11 (see annex) shows that the share of under-five-year-old children in the total number of new outpatients seen at municipal clinics declined steadily from 45 per cent in the first quarter of 1991 to around 25 per cent in late 1993 and 1994. It is especially noteworthy that even when total outpatient clinic attendance declined so dramatically in the first half of 1994 (see Figure 6.10 in annex), the share of under-five-year-old children did not increase. The second quarter of 1995 showed a rise back to almost 30 per cent, but the overall impression remains that the reduction in treatment-seeking from municipal clinics affected under-five-year-old children more than older children and adults.

Figure 6.12 (see annex) depicts the number of first visits of pregnant women who reported to municipal clinics and to Chitungwiza General



Hospital for antenatal care. For the clinics, no clear trend can be discerned and the outlying values can only be explained by flaws in the clinic statistics. The increase in booking fees for delivery in January 1994 (ZWD 65 to ZWD 120) does not seem to have had an impact. At Chitungwiza General Hospital, there has been a steady increase in initial antenatal consultations from 100 to 150 per month in early 1992 to around 250 per month in 1995. The extremely high figures in late 1991 are probably reporting errors.

The number of deliveries per month reported by Chitungwiza General Hospital initially fluctuated between 320 and 440 per month, then dropped a little in early 1994, possibly because of the fee increase. Since the second half of 1994 the numbers have risen to between 380 and 460 per month. At the municipal clinics, between 360 and 420 deliveries per month were reported in 1991 and most of 1992. Late 1992 and early 1993 showed a decline (to 320 to 340 per month), but from mid-1993 onwards there has been an upward trend. Figure 6.13 (see annex), which depicts the total number of institutional deliveries in Chitungwiza by quarter (for clinics and the hospital combined), shows that between late 1992 and mid-1994, there were relatively few institutional deliveries.

Chitungwiza: inpatient statistics

The number of patients who stayed at Chitungwiza general hospital per day appears to have dropped suddenly between the last quarter of 1993 and the first quarter of 1994 (see Figure 6.14 in annex). The data are for the general wards only (452 beds), meaning that those from the maternity ward (88 beds) are not included. From almost 300 patients per day, the hospital suddenly had only about 200 patients occupying beds every day. Was this due to a decrease in the number of patients admitted or to a decrease in the duration of stay by each patient? The number of patients admitted to Chitungwiza General Hospital by quarter is shown in Figure 6.15 (see annex). Although it is difficult to attribute the fluctuations to specific causes, it is possible that the decrease between 1991 and early 1992 was due to the stricter user fee collection that was ordered in early 1991. The decrease in admissions in the first quarter of 1994, after ward fees were increased, explains part of the decrease in bed occupancy observed in Figure 6.14 (see annex). Between the third quarter of 1994 and the first quarter of 1995, however, admissions increased by about 16 per cent, suggesting the change in user fees did not have a lasting effect. The average length of stay of the patients has fallen almost continuously since the third quarter of 1993, from eight to less than four-and-a-half days in early 1995. The steepest fall was in late 1992 and early 1993. In the first quarter of 1994 alone, the average length of stay fell by about 20 per cent (from 6.2 days to five days). The increase in user fees may have made patients decide to shorten their stay so as to minimise costs. Con-





trary to what happened with the admissions, the average length of stay did not recover in the course of 1994 or 1995.

6.3 Clinic-based mortality

Murehwa district

The data on monthly mortality as reported by the various health institutions in Murehwa district have been aggregated for periods of one year each and are summarised in Table 6.3. The data do not include deaths that may have occurred outside the health institutions. However, it can be safely concluded that clinic-based maternal mortality was at its highest in 1992 and 1993, when 1.4 to 1.7 maternal deaths per thousand deliveries were reported, compared to 0.3 in 1991, 0.6 in 1994 and none in the first half of 1995.

The rate of stillbirths was high in 1994, but seemed back within its normal range in the first half of 1995. An alarming trend can be detected with regard to neonatal deaths: the neonatal mortality rate¹ increased from 7.1 per thousand in 1991, to around 11 per thousand in 1992 and 1993, and to 17.5 and 20.2 in 1994 and 1995 respectively. By a conservative estimate, clinic-based neonatal mortality has doubled in just three years.

Chitungwiza

The highest number of maternal deaths in Chitungwiza was recorded in 1992: 11 cases compared to three each in 1991 and 1993, six in 1994 and two in the first six months of 1995. This does not suggest any trend, but close monitoring will be useful. Trends were not found in either the rate of stillbirths or the rate of neonatal deaths, although the figures did fluctuate over time. Both rates were higher than those calculated for Murehwa district: the stillbirth rate was between 15 and 35 per thousand births (compared with 13 to 22 in Murehwa district) and the neonatal mortality rate was between 20 and 50 per thousand (compared with seven to 20 in Murehwa district).

6.4 Interpretation and discussion

The purpose of analysing clinic-based data on health service utilisation and mortality was to examine trends and try to explain them in light of the

¹The neonatal mortality rate is the number of deaths of newborn children during their first month of life per one thousand live-births.



Table 6.3: *Mortality as reported by health institutions in Murehwa district by year*

	1991	1992	1993	1994	1995 (six months)
Maternal deaths					
district hospital	1	2	5	1	0
mission hospital	0	1	0	1	0
all RHCs	0	1	0	0	0
total	1	4	5	2	0
mortality rate (per 1000 deliveries)	0.3	1.4	1.7	0.6	0
Stillbirths					
district hospital	39	34	30	61	21
mission hospital	8	16	8	8	4
all RHCs	0	2	0	6	1
total	47	52	38	75	26
mortality rate (per 1000 live-births)	15.9	18.5	13.0	22.3	16.4
Neonatal deaths					
district hospital	14	26	24	49	26
mission hospital	7	4	10	10	4
all RHCs	0	1	0	0	2
total	21	31	34	59	32
mortality rate (per 1000 live-births)	7.1	11.0	11.6	17.5	20.2

changes that have taken place within the health sector as well in society in general. It is technically impossible to prove any causal relationship between economic stress, drought periods, changes in user fee policies and declines in the quality of healthcare on the one hand, and reduced service utilisation and increased mortality and morbidity on the other hand. However, the findings presented in the previous sections do show some strong correlations with changes in user fee policies and these do suggest causality.

One of the most convincing results is that outpatient clinic attendance in both Murehwa district and Chitungwiza responded strongly to changes in user fee policies. This has been found in other studies as well. In another study in Zimbabwe, Hongoro and Chandiwana (1994) suggested that the enforcement of user fees in 1991-92 has led to a decline of 18 per cent in outpatient attendance. In a review of the literature on user charges for health services, McPake (1993) concludes that studies in several countries, including





Ghana, Swaziland and Tunisia, have demonstrated the negative impact of user charges on service utilisation. Costello *et al.* (1994) mention other studies from Kenya, Nigeria, Mozambique and Zaire that show similar results.

User fee increases also seem to have had an effect on the utilisation of hospital beds in Chitungwiza. The resulting shorter duration of hospital stays has been a long-lasting effect, but the admissions were reduced for a period of only about six months, after which they gradually climbed back to a higher level. Utilisation of inpatient care at the mission hospital in Murehwa district responded strongly to the fee increases in 1991. During most of 1993, bed occupation was high, which is attributed to the effects of the 1991–92 drought. After the January 1994 fee increase, the mission hospital saw a huge reduction in the number of inpatients, but at the district hospital the reverse happened. The exact reason for this is not clear.

The total numbers of first antenatal consultations and institution-based deliveries do not appear to have been affected by changes in user fees, but antenatal consultations in Murehwa district have increasingly taken place at rural health centres rather than at hospitals. Also in Murehwa district, the average number of ANC visits per pregnant woman declined in early 1994. Reported home deliveries have increased, but this is partly due to better reporting. The household survey (see Section 4.4), however, indicated that home deliveries in Murehwa district had increased (from 18 per cent in 1988–91 to 38 per cent in the period from mid-1994 to mid-1995). It is estimated that the number of home deliveries may be as high or even higher than the number of deliveries that take place at RHCs. A possible reason for this is that the quality of delivery care provided at RHCs is perceived as inadequate by the users. This was revealed during focus group discussions held with community women in 1993–94 as part of the current research project (Bijlmakers *et al.*, 1995). Iliff *et al.* (1994) found a rather sudden dip in the number of births in Greater Harare in 1993, which prompted speculation that more births were taking place outside the city. There were other reports about pregnant women from urban centres going to rural areas to deliver their babies at hospitals which charged lower fees than the city clinics and hospitals. In late 1993, it was estimated that about 20 per cent of the mothers who delivered at the mission hospital in Murehwa district were from Harare (Renfrew, personal communication).

The initial purpose of the fee-for-service system was to recover at least part of the cost of providing health services so as to alleviate the financial burden on the government in line with the ESAP policies. Some have raised the question whether cost recovery in the health sector has ever been an effective way to raise revenue (Chisvo and Munro, 1994). Gross collections of user fees never exceeded 5 per cent of the recurrent budget of the Ministry of



Health (Hongoro and Chandiwana, 1994). The net collections, that is after deducting the cost of collecting fees and running the exemption system, must have been considerably less (Chisvo and Munro, 1994).

From the international literature there is also ample evidence that success in raising revenues has not been marked, and that the efficiency of fee collection is generally not high (McPake, 1993). It was interesting that when the new user fee structure was put in place in January 1994, the Ministry of Health and Child Welfare advanced a new argument in favour of user fees. The new structure and guidelines were intended to rationalise user charges across institutions so as to encourage patients to seek care from their nearest health facility and discourage them from going straight to a referral hospital. It was anticipated that the increase in fees at provincial and district hospitals would divert part of the patient load from these busy and expensive institutions to health centres and clinics. The data presented above clearly demonstrate that in practice this did not work: total outpatient clinic attendance in both the urban and the rural area fell dramatically after January 1994 (see Figures 6.2, 6.9 and 6.10 in annex), indicating that large numbers of people must have forgone medical treatment.

Although the government was right to rationalise the system of user fees, treatment at the lowest level of the referral system—the health centres and clinics—should never have been made more expensive. It should have been made free or very inexpensive. In this regard, the government's decision, more than a year later (March 1995), to abolish user fees at rural health centres was a step in the right direction. It would have been better to also abolish, or at least lower, the fees at urban clinics, especially those situated in poorer parts of the city. Another important condition which will help strengthen the referral system, and which should not be overlooked, is the quality of services. Only if the lowest levels of the referral system provide sufficiently high quality care will the system as a whole be strengthened.

Clinic-based mortality data in Murehwa district showed that maternal mortality was at its highest in 1992 and 1993, whereas neonatal mortality rates more than doubled between 1991 and the first half of 1995. Naturally one cannot attribute these changes to a single cause, but maternal mortality is generally considered sensitive to changes in both the quality and the accessibility of maternal health services. The Ministry of Health and Child Welfare concluded, on the basis of both routine health information from health facilities and several community-based studies, that the maternal mortality rate "is definitely rising again" after a decline during the 1980s. Also, it had evidence that maternal mortality is higher for rural than for





urban women, and for *unbooked* versus *booked* clients¹ (GOZ, 1996b). The Mother and Child Health Department of the ministry now recommends that the government provides maternity services free of charge to all women, regardless of their earning capacity. Costello *et al.* (1994) mentions two countries—Nigeria and Algeria—where linkages were found between on the one hand, changes in user charges and, on the other hand, changes in antenatal clinic attendance, the proportion of unbooked deliveries that take place at hospitals, the number of unassisted home deliveries and maternal mortality.

The rise in the clinic-based neonatal mortality rate in Murehwa district is probably associated with the increase in HIV infection and AIDS but could also be related to the declining quality of care and to an increase in the proportion of low birthweight babies due to poor maternal nutrition. Other sources confirm that several mortality rates no longer exhibit the downward trends which were observed in the early and mid-1980s. In the 1994 update of its *Situation Analysis of Children and Women in Zimbabwe*, UNICEF (1994c) stated that both the neonatal mortality rate and the rate of stillbirth achieved their lowest historical levels in 1985 and then began to rise. Iliff *et al.* (1994) found that in 1994 the perinatal mortality rate² in Greater Harare had reached a new high of 54.1 per thousand live-births. Stillbirths had contributed more to the rise than neonatal deaths. The AIDS epidemic was held responsible for part of the rise, but overloading the system (because of a shortage of maternity units) and poor quality of service were also blamed.

The clinic-based neonatal mortality rates of 20 to 50 per thousand found for Chitungwiza in the current study are well above the rate of 25 per thousand that was reported by the *1994 Zimbabwe Demographic and Health Survey* (CSO, 1995) and suggest that the increase continues. The UNICEF report (1994c) further stated that evidence was accumulating that the infant mortality rate³ and the child mortality rate⁴ have begun to rise in the late 1980s and into the 1990s, particularly in the country's two largest urban centres. Apart from the economic decline, the deteriorating health services and the

¹ *Booking for delivery* is done at the first antenatal consultation and implies that a booking fee is paid, unless the client holds a letter stating that she is exempt from health fees.

² The perinatal mortality rate is the sum of the number of stillbirths and the number of deaths in the first month of life per one thousand live-births; it is a combination of the stillbirth rate and the neonatal mortality rate.

³ The infant mortality rate is the number of deaths among children below one year of age per thousand live-births.

⁴ The child mortality rate is the number of deaths among children one to four years of age per thousand live-births.



drought, the impact of HIV/AIDS has clearly contributed to the observed change. By 1991, HIV-related deaths had become the single leading cause of death among children one to four years of age, and they were held responsible for over 20 per cent of the mortalities in this group.





7. Discussion and conclusions

7.1 Socioeconomic developments during the period 1993–95

The most important socioeconomic developments in Zimbabwe since the immediate postindependence period (1980–82) centred on the stabilisation effort that was undertaken from 1982–90 and the policies implemented during the early ESAP period (1990–92). These have been described in the introductory chapter of this report. For a fair analysis and interpretation of the information in the previous chapters, it is necessary to describe briefly some of the important changes that took place in Zimbabwe during the intermediate phase of adjustment (1993–95), when the present study was conducted.

Economic and social indicators

While Zimbabwe's real GDP officially fell by 7.7 per cent in 1992, a very modest economic recovery occurred in 1993 when GDP officially rose by 1.7 percent. In per capita terms, however, this still represented a small negative growth (from ZWD 413 to ZWD 411). Data for 1994 and 1995 are still being processed. The recovery in 1993 was almost entirely based on agriculture, mainly maize and tobacco (Gibbon, 1995). Performance in other sectors gave presented less bright picture. The index of manufacturing output, for example, which had started to fall between 1991 and 1992, declined further in 1993 to a level slightly above that of 1987.

Developments in the textile and clothing industries under the ESAP have been described extensively by Sachikonye (1995). Initially, these sectors were believed to have greater potential for expansion and improved export performance than most other industries. Before trade liberalisation, the textile and clothing industries were performing reasonably well, in spite of difficult access to foreign exchange and imported inputs. In 1991–92, the major companies undertook large capital investment programmes to modernise their plants. Among these companies was Cone Textiles in Chitungwiza, which was owned by Lonrho, a multinational company. Cone Textiles incurred loans amounting to ZWD 300 million for investment in new equipment (Sachikonye, 1995). In 1992 and 1993, the textile and clothing industries landed in a deep crisis, which was attributed to three interrelated problems: a liquidity crisis stemming from the new monetary measures



introduced by the government; the domestic recession, which led to declines in real incomes and reduced purchasing power mainly in urban areas; and the drought, which affected domestic cotton production and depressed household incomes mainly in the rural areas. Cone Textiles declared no profits for 1992 and retrenched 1600 workers in October 1992. In December 1994, the company closed down, increasing the total number of workers without to 6000. In June 1995, discussions about a possible takeover of Cone Textiles and the reemployment of some of its former workers by the Industrial Development Corporation were continuing. Meanwhile, former employees had not yet received termination benefits (ZWD 400) to which they were entitled under the Insolvency Act. In the first nine months of 1995, textile manufacturing in Zimbabwe as a whole declined by 62 per cent over the previous year, while manufacturing in general declined by 14 per cent over the previous year (Curtin Knight, 1996).

One of the dramatic effects of structural adjustment policies is the growing indebtedness of the countries involved. Zimbabwe is no exception in this regard, with government debt rising from USD 2.6 billion in 1990 (or 45 per cent of GDP), to USD 4 billion (or 86 per cent of GDP) in 1994 (Gibbon, 1995). In the 1995–96 fiscal year, total debt servicing was USD 722 million in interest payments. Along with USD 600 million in repayment of capital, debt absorbed nearly 50 per cent of total government expenditures (Curtin Knight, 1996).

In September 1995, the IMF suspended the disbursement of a USD 120 million loan, because budgetary measures failed to meet the organisation's expectations. Following an order by the Finance Minister which denied additional funds to ministries spending more than their monthly budget, the Ministry of Health and Child Welfare was cut off by its pharmaceutical suppliers in November because the ministry owed them millions of dollars.

Table 7.1 clearly shows that the inflation rate was highest in 1992. The rates for 1993 and 1994, although lower than for 1992, are still much higher than the average of 13 per cent per annum recorded over the 1980–90 period. Since 1991, the Consumer Price Index has risen steadily by about 50 points per annum. The index for food recorded an even steeper increase, while that for medical care saw its major increase in early 1994. The latter is mainly attributed to the dramatic fee increases for health services at clinics and hospitals in January of that year. Data for 1995 are still being processed.

The fourth round of the Sentinel Surveillance for SDA Monitoring (GOZ, 1994c) found that between March and December 1993, there was a dramatic





shift in maize meal consumption by Zimbabwean households. The proportion of households consuming *roller meal*¹ fell from 75 per cent to less than

¹ Until 1992, almost all the commercially available maize meal in both urban and rural areas was produced by four commercial roller milling firms. Until mid-1993, government subsidies were administered solely through these large-scale firms, which produced the maize meal in two forms: *roller meal*, which is less refined (85 per cent extraction rate), and *super-refined* meal, which is more refined (65 per cent extraction rate) and, therefore, more expensive (Chisvo and Munro, 1994).



Table 7.1: Price indicators for Zimbabwe¹

	1990	1991	1992	1993	1994	1995
Inflation rate	15.5%	23.3%	42.1%	27.6%	22.3%	forth-
Consumer Price Index (CPI)	100.0	123.3	175.2	223.6	273.4	co-
Food CPI	100.0	112.6	192.7	267.4	336.8	ming
Medical Care CPI	100.0	116.3	144.4	169.3	415.9	

¹ Source: CSO (1995b, 1996)

one-quarter. Over the same period, there was a corresponding increase in the consumption of *straight-run* maize meal¹ from 33 per cent to 71 percent. This shift was attributed to the removal of the consumer subsidy on roller meal and the decontrol of the retail price of maize meal in June 1993, which led to an immediate 40 per cent increase in roller meal prices. The fifth round of the Sentinel Surveillance, which was conducted in September 1994, showed that the rates of consumption of the two types of maize meal had remained stable since the time when the fourth round was conducted (GOZ, 1995).

The 1994–95 agricultural season was again hit by severe drought, which affected household food security especially in the rural areas. This has further aggravated the already depressed macroeconomic indicators. Rainfall in the 1995–96 season, however, was abundant, which led to high agricultural outputs. Phase I of ESAP came to an end in 1996 and Phase II was launched in the course of 1997.

Changes in the health sector

The fall in government real per capita recurrent expenditure on health between the financial years 1990–91 and 1992–93 has been described in Chapter 1. In 1993–94, expenditure on health rose by almost 6 per cent, but in 1994–95 it reverted to the level of two years earlier (Bijlmakers and Chihanga, 1996). In fact, the increase in 1993–94 happened because the Ministry of Health and Child Welfare overspent its original budgetary allocation by 13 per cent (Chisvo and Munro, 1994). Figure 7.1 (see annex) clearly shows the downward trend in real recurrent per capita expenditure during the early 1990s. Although the trend has levelled off between 1992–93 and 1994–95, expenditure over the entire five year period is estimated to

¹ *Straight-run* maize meal (which has an extraction rate of about 98 per cent) is produced with hammer-mills by small-scale millers, whose businesses flourished after the removal of the subsidies on super-refined meal (August 1992) and roller meal (June 1993) and the decontrol of the retail price of maize meal (June 1993; Chisvo and Munro, 1994).



have fallen by 40 per cent. Figure 7.2 (see annex) shows that as a proportion of the total government budget, the health budget fell below 5 per cent for the first time in the year 1994–95.

It has been acknowledged by several politicians and top policymakers that the precarious financial position of the MOHCW has made it difficult to attract and retain qualified staff—especially doctors, nurses and pharmacists—and to ensure a steady supply of drugs and medical equipment. The general decline in the quality of health services has been a much-debated issue in the government, the press and among the general public. The issue is sensitive, though, as illustrated by the government's threat in 1995 to eject Oxfam from the country because this organisation had sought to publicise a publication which described and criticised certain recent developments in the health sector. The publication alleged that the health system was in decline, mortality and morbidity were rising and fewer patients were attending clinics. The negative effects of clinic fees on people's health were particularly criticised (Lennock, 1994). The user fee policy in the early 1990s has been described in the introductory chapter of this report and in Chapter 6.

In 1995, the health minister, Timothy Stamps, in a bitter public argument, blamed the World Bank for deteriorating healthcare and education standards in the country (Melly, 1996). The government decided to abolish clinic fees but otherwise showed a strong determination to continue with its austerity drive. Several strikes by nurses and junior doctors in 1995 and 1996, who demanded better working conditions and salaries, further damaged the image of the health sector. The MOHCW did not give in to the demands but, instead, fired those who went on strike and ordered them to reapply if they wanted their jobs back.

The Poverty Alleviation Action Plan

The *Social Dimensions of Adjustment* plan (GOZ, 1991b) was made public in November 1991, almost a year after the main ESAP document was published (GOZ, 1991a). The *Social Development Fund (SDF)*, which was established as part of the SDA plan, encompassed two main programmes, the *Employment and Training Programme (ETP)* and the *Social Welfare Programme (SWP)*. Right from the outset, the implementation of SDF measures was hampered by grossly inadequate funding. Total government expenditure for the SDF at the end of July 1994 stood at ZWD 88.7 million (GOZ, 1994b). Of this, the SWP absorbed ZWD 52.3 million (around 60 per cent) for short-term compensatory and welfare schemes, most of which took the form of assistance with school fees and examination fees. Only ZWD 1.5 million was reported to have gone to assist with health fees and ZWD 0.7 million for food money for households in urban areas. The government recognised that the impact of

the social safety net was minimal, especially in rural areas. Among the problems identified were: cumbersome application procedures for assistance; over-centralisation in the processing of payments; and unclear division of responsibilities between the departments involved in the SDF (GOZ, 1993a).

In the course of 1993, two years after the start of the ESAP, the government began to recognise the need to reform the SDF. A new *Poverty Alleviation Action Plan (PAAP)* was devised (GOZ, 1993a), which tried to address the problems encountered with the SDF. The launching of the plan was far from smooth. The PAAP was approved by the cabinet in October 1993, but when it was presented to donors at the December 1993 Consultative Group meetings in Paris, most donors held that the plan did not specify clearly enough how it would be implemented. PAAP was then launched again in January 1995, this time with an implementation plan. The total financial requirement was estimated at USD 150 million (about ZWD 1.2 billion), of which almost one-third (USD 49 million) was for the targeted *Social Safety Nets Programme*. This programme was based on the old SWP, with its three elements—education fees, health fees and food money—but it promised to streamline, decentralise and simplify the operational systems. Criteria for access to the programme would be reviewed in line with the results of the *Poverty Assessment Study Survey*, which was done in 1995. Its main purpose was to assess the geographical distribution of poverty up to the district level, to assess poor people's access to social and public services, and to gain insight into perceptions about, causes of and solutions for poverty. A preliminary report came out in April 1996 (GOZ, 1996), while the final report was not expected to be published until late 1996, five-and-a-half years after the start of ESAP. Some of the results of the poverty assessment study will be presented in the next section.

7.2 Representativeness of the study

Before discussing the main findings of the current study, it is necessary to compare the two study areas—Chitungwiza and Murehwa district—with other parts of Zimbabwe and to comment on the extent to which the findings reflect developments in the country as a whole.

The poverty assessment study conducted in 1995 defines poverty as the inability to afford a defined *basket* of basic consumer goods (GOZ, 1996a). A food basket was identified which was considered adequate to satisfy people's nutritional requirements, while a non-food basket was defined which would satisfy requirements for consumer goods and other services, such as clothing, housing, education, health and transportation. Two poverty lines are derived from this: the food poverty line is the level of income per



person per year below which one is considered “very poor”, and the total consumption poverty line is the income level below which one is considered “poor”. Different poverty lines were calculated for different areas so as to take into account differences in prices between areas.

For Zimbabwe as a whole, 46 per cent of the population was found to be very poor since they could not meet their basic nutritional requirements, and 16 per cent were found to be poor, indicating they were able to buy enough food but not the other goods and services that are considered basic requirements. Table 7.2 shows that poverty was more prevalent in rural areas, where 72 per cent of the households were poor or very poor, than in urban areas (46 per cent). Huge variations were found in poverty levels among districts: from 14 per cent in Gweru district (poor and very poor combined) to 92 per cent in Buhera and Binga districts. Poverty was more widespread in communal lands (81 per cent) than in resettlement areas (67 per cent), small-scale commercial farming areas (67 per cent) or large-scale commercial farming areas (51 per cent). Female-headed households were poorer than male-headed households (74 per cent versus 57 per cent).

Table 7.2: *Poverty lines and prevalence of poverty among households by area (in ZWD)*¹

	National average	Urban average	Chitungwiza	Rural average	Murehwa district
Poverty lines ²					
Food	\$ 1332	\$ 1512	\$ 1530	\$ 1180	\$ 1351
Total consumption	\$ 2213	\$ 2555	\$ 2586	\$ 1924	\$ 2248
% of households					
Very poor	46%	25%	30%	57%	70%
Poor	16%	21%	24%	15%	16%
Non-poor	38%	54%	46%	28%	14%

¹ Source: GOZ (1996a)

² Poverty lines in ZWD per person per year

The food poverty line and the total consumption poverty line calculated for Chitungwiza was only slightly higher than that calculated for all urban areas combined (by less than 2 per cent; see Table 7.2). The proportion of households in Chitungwiza that were poor (24 per cent) or very poor (30 per cent) was higher than the average for all urban areas combined (21 and 25 per cent respectively). This suggests that poverty is more prevalent in Chitungwiza

than in most other urban areas. However, urban centres are usually very heterogeneous in character, especially in Zimbabwe where *high-density suburbs* stand in stark contrast to the more affluent *low-density* suburbs. Although supporting data are not available, it is believed that Chitungwiza, with its large commuter workforce and high level of informal economic activity, is not very different from some of the high-density suburbs of Zimbabwe's major cities.

The poverty lines calculated for Murehwa district were slightly higher than the national average (by less than 2 per cent), but substantially higher than the poverty lines calculated for all rural areas combined (by 15 to 17 per cent). This indicates that prices for basic consumer goods and services in Murehwa district are higher than in most other rural areas. The proportion of households in Murehwa district that were poor (16 per cent) or very poor (70 per cent) was also higher than the average for all rural areas combined (15 and 57 per cent respectively). This is contrary to what is generally believed. Although Murehwa district consists mainly of communal farming areas, conditions for gardening are relatively good and the district is well situated for bringing garden produce on to the market in Harare. It should be remembered that rainfall in 1995, when the Poverty Assessment Study was implemented, was particularly bad in Murehwa district. This may well have had an impact on the results of the study. On the other hand, the figures for Murehwa district correspond reasonably well with the averages obtained for all communal lands combined, which have 13 per cent of the households categorised as poor and 68 per cent as very poor. It is, therefore, concluded that as far as the distribution of poverty is concerned Murehwa district cannot be seen as representative of the whole of Zimbabwe, nor of Zimbabwe's rural areas, but it appears fairly representative of the communal lands, where 51 per cent of Zimbabwe's population resides (CSO, 1994b).

7.3 Discussion of main findings

The findings that are presented in chapters 3 to 6 can be summarised according to three main areas of interest: changes in household economy, changes in health and health-seeking behaviour and changes in health outcomes, as evidenced by changes in nutritional status and mortality.





Changes in household economy

The third survey round in 1995 was the first in which questions were asked about income. Previously this was not considered feasible. For Chitungwiza households, the median monthly income was calculated at ZWD 1040, with about 10 per cent of the households earning less than ZWD 400. In Murehwa district, the median monthly income was ZWD 420, with 46 per cent of the households earning less than ZWD 400. *De jure* female-headed households had much lower income levels than male-headed or *de facto* female-headed households. A decrease in household income compared to the previous year (1994) was reported by about one-third of the urban households and 42 per cent of the rural households, but these figures were much higher in the lowest income categories, as well as among the *de jure* female-headed households in the rural area.

Comparison of the data from the three survey rounds showed that household income sources had been diversified in Chitungwiza between 1991 and 1995. In Murehwa district, the reported number of household income sources had increased strongly between 1993 and 1994, but showed a slight decrease between 1994 and 1995, which was related to the poor rainfalls in the 1994/95 season. Diversification of income sources was primarily achieved by taking on a wider range of informal activities. Growing maize had become significantly more popular in Chitungwiza, where new food growers produced mainly for their own consumption. Self-sufficiency in maize, however, fell significantly between 1994 and 1995. In Murehwa district it, fell to just 30 per cent of all households, compared to 76 to 80 per cent in the previous two years. The pattern of household expenditure in both rural and urban settings had also changed. Funerals accounted for an increasing proportion of expenditure in Chitungwiza, which corresponded with a decline in expenditure on medical care, school fees and household furniture and electrical appliances. In both areas people were also reported to have reduced expenditure on clothing, use of transportation and consumption of food.

With regard to food consumption, a decline was found in both the quality and the quantity of food. Spells of food shortage within the household in Chitungwiza appeared to be more common and of longer duration than in Murehwa district, although in the rural area the situation in 1995 had become much worse compared with the previous year. About three-quarters of households in both areas reported they no longer bought certain food items because of their expense. Particularly meat, bread, rice and cooking oil had become luxury items. More than one-quarter of the households in Murehwa district in 1995 reported they did not always have three meals a



day, while 40 per cent said they had meat less than once a week. The high proportion of urban households which in 1993 had reduced the amount of *sadza* (the main staple food) that they ate was alarming: 31 per cent. This contradicts the finding of the aforementioned fourth round of the Sentinel Surveillance for SDA monitoring (GOZ, 1994c), which detected the significant shift in maize meal consumption away from roller meal to straight-run meal, but found that total maize consumption between March and December 1993 had remained unchanged. Three other Zimbabwean studies, though, confirmed the deterioration in household food baskets, both in terms of quality and quantity (Brand *et al.*, 1995; Sachikonye, 1995; Kanji and Jazdowska, 1995).

A surprising finding in 1994 was the reported increase in savings in many households compared with the previous year. It was not clear whether this could be seen as a sign of an improving socioeconomic climate, because it could also be an indication that people were becoming apprehensive about the future. In 1995, the urban households still showed a high saving profile while the rural households were saving less than the year before. The popularity of local savings clubs and funeral societies also increased significantly between 1993 and 1995. More than one-third of households in both areas indicated they were saving for emergencies. The other most important reason for households to save was related to schooling. Substantial numbers of households were reducing expenditure—mostly on food and clothing—in order to be able to save. This indicates that for many households, saving money from whatever income they can earn has become a mode of survival. Financial indebtedness, on the other hand, had risen in Murehwa district over the three years, while in Chitungwiza it first declined (between 1993 and 1994) and then rose sharply between 1994 and 1995. In both areas, however, the debts reported in 1995 were much smaller than those reported in the two previous years. This indicates a shortage of money in society. In 1995, the sale of household assets in order to sustain expenditure on basic commodities and services was reported by eight households in the urban area (3 per cent of the total sample) and just one household in the rural area.

While significant proportions of households in Murehwa district benefited from food aid in 1993 through the Child Supplementary Feeding Programme and the Food-for-Work Programme, this was no longer the case in 1994 because these programmes were stopped between the first two survey rounds. Very few households reported having received assistance from social welfare organisations in the urban setting: less than 5 per cent in each of the three survey years received assistance with school fees, food money or blankets. In the rural setting 4 to 6 per cent received assistance in 1994 or 1995, mostly in the form of fertiliser and/or seeds. Other sources give figures that are equally low or even lower. Brand *et al.* (1995) found that less





than 1 per cent of female informal traders in Mbare suburb in Harare received food money, whilst 6.8 per cent received assistance with school fees. Among 57 retrenched workers interviewed by Sachikonye (1995), none had received assistance of any kind from SDF. The fourth and fifth rounds of the Sentinel Surveillance for SDA monitoring, which were conducted in December 1993 (GOZ, 1994c) and September 1994 (GOZ, 1995), found that, in Zimbabwe as a whole, between 1 and 6 per cent had been assured of assistance with school fees, examination fees, food money (in urban areas only) or employment/training opportunities.

The number of households in need of assistance is difficult to estimate. Some government sources estimate that 50 to 60 per cent of Zimbabwean households earn ZWD 400 or less and are, therefore, eligible for social welfare assistance (GOZ, 1995). The poverty assessment study (GOZ, 1996) identified 46 per cent of the population in Zimbabwe as very poor and 16 per cent as poor. The two poverty lines on which these figures were based (see Section 7.2) were respectively calculated at ZWD 1332 and ZWD 2213 per person per year. Taking into account the average household size of 4.6 persons, this implies that an average household in 1995 required a monthly income of ZWD 510 to meet its basic food needs, while ZWD 848 per month was required for general basic needs (both food and non-food). This indicates that the official level of ZWD 400 below which households qualify for social welfare assistance is much too low under present economic conditions.

Gibbon (1995) argues that, in general, social adjustment programmes in Africa suffer from a weak conceptual basis and that the genuinely poor are hardly reached. It is clear that, five years into the ESAP era in Zimbabwe, the "targeted assistance" is still very far from finding its target. There is no evidence that the new Poverty Alleviation Action Programme, which was designed on the same basis as the SDF, has had a significant impact on the living conditions of those hardest hit by the economic decline, since the proposed measures hardly involve any structural changes that might improve the plight of the poor. Even the World Bank, in a review of 12 social action programmes and social funds in Africa (Marc *et al.*, 1993), acknowledges that targeting and monitoring of interventions is one of the weakest aspects in the design of such programmes. Costello *et al.* (1994) state that, although social action programmes and social funds can be beneficial, they cannot by any means be seen as an adequate response to the social impact of economic adjustment. It is clear that one of the main concerns of poverty alleviation is that reform programmes should be equitable and give priority to measures that improve the access of the poor to productive assets and income-generating activities.



Between 1993 and 1994, a significant decrease in reported illness was found in both study areas, while there was little change in the following year. It is not very likely that the observed decrease in the first year represents a real reduction in illness. There is some indication that it was at least partly due to some people not reporting illness for which no treatment was sought, which, in turn, is attributed to the higher health service user fees in 1994 compared to those in 1993. Clinic-based monthly statistics confirmed that outpatient attendance responded strongly to changes in user fee policies, with total outpatient attendance in both the urban and the rural area falling dramatically after the January 1994 fee increases. The reduction of illness reports was for both adults and children, and was stronger in Murehwa district than in Chitungwiza. It was not possible to conclude whether people were rationing their medical care for specific diseases.

In the 1994 survey, most of the households in both study areas stated they were paying for healthcare. A minority of 12 per cent in Murehwa district and 7 to 8 per cent in Chitungwiza (in 1994 and 1995) held valid letters which enabled them to receive free treatment. The fourth and fifth rounds of the Sentinel Surveillance for SDA monitoring, in December 1993 (GOZ, 1994c) and September 1994 (GOZ, 1995), found that, in Zimbabwe as a whole, 24 and 19 per cent of the respondents, respectively had been exempted from paying health fees. These figures may have been overestimated as it was not established for how long or on how many occasions people had been exempt. It is clear from the current study that among those who were eligible for free treatment on the basis of their monthly household income (see above), only a minority actually received free treatment.

Of those reported ill, the proportion of cases for which no treatment was sought had increased between 1994 and 1995. More than one-quarter of the residents in the rural area who were ill in 1995 went without treatment, compared with one person in six in the urban area. This was mostly for financial reasons. Among those who did seek treatment in Murehwa district, the proportion of patients seeking treatment from their nearest clinic rather than from an institution further away had increased in the first year (by 10 per cent) and remained stable in the second year (at 91 per cent). This may be an indication that the government's attempt to strengthen the use of primary care centres and take some of the patient load off the referral hospitals—which was one of the main arguments when the structure of health fees was revised in January 1994—has been successful in the rural area. It does not necessarily mean, though, that patients are getting better services. In the urban area, no change in treatment-seeking was detected over the three years. The private sector was quite popular, with almost one-





quarter of those who were reported ill seeking treatment from a private doctor.

The proportion of patients paying for services at a public health facility in Chitungwiza had decreased between 1993 and 1995. In Murehwa district, it had increased in the first year, indicating stricter collection of user fees or less accessible exemption, but then fell to a level below 20 per cent because of the abolition of user fees at rural health centres. The average amount paid in the urban area had almost doubled in the first year—owing to the fee increases instituted in January 1994—and then fell slightly in the second year. In Murehwa district, a smaller increase was observed in the first year, but the second year again showed an increase to a level higher than the average cost of treatment in the urban area. This is because in 1995 those who paid fees in the rural area did so at a referral hospital, where the charges are relatively high. In Chitungwiza, several instances were reported where patients had to pay twice: first for their initial treatment at one of the municipal clinics and then the outpatient consultation fee at Chitungwiza general hospital after being referred. It is clear that this issue needs to be addressed by the local health authorities.

Strong evidence has been found that home deliveries in the rural area are on the increase. In 1995, a record 38 per cent of the women who gave birth did not deliver at one of the health institutions. In the urban area, there had been a sudden surge in 1994 (to 10 per cent), but this may have been a temporary phenomenon. In 1995, maternity fees were paid by about two-thirds of the urban clients, which was lower than in previous years. In the rural area, surprisingly, almost all clients paid for maternity services. The user fee exemption rules were apparently not applied for maternity care in Murehwa district. While Chitungwiza residents experienced a twofold increase in fees between 1993 and 1994 to ZWD 120, those in Murehwa district saw a much more modest increase. The combined effects of the increase and the strict collection of maternity fees has obviously contributed to the increase in home deliveries in the rural area, which is also confirmed by clinic-based statistics. It was estimated that the number of home deliveries may be as high or even higher than the number of deliveries that take place at rural health centres. One of the reasons for this is that the quality of delivery care at these institutions is perceived to be inadequate. Clinic-based statistics further indicate that the number of antenatal visits per pregnant woman declined in early 1994. On the other hand, there was evidence that since 1993 significant numbers of pregnant women from urban centres had used rural hospitals to deliver their babies, because of lower fees. These trends are worrying, as they may ultimately have a negative impact on morbidity and mortality among mothers and children.



Some highly significant changes were found with regard to child nutritional status. The overall prevalence of stunted growth, which reflects long-term adverse influences, seems not to have changed much in Chitungwiza, while in Murehwa district it seemed to have declined. In both areas, however, this was due to the ageing of the sampled children, while in Murehwa district the relatively high loss of follow-up of stunted children between 1994 and 1995 accounted for part of the improvement. The 1993 baseline survey found that excessive stunting in both areas was limited to children of one to two years of age. This is also known from the literature. In 1994, however, stunting was excessive in the one- to three-years-old category, while in 1995 it was excessive in the one- to four-years-old category in Chitungwiza, but not in Murehwa district. It was suggested that these children were born short because of dietary stress in the mother during pregnancy and that there were problems with the feeding during the children's infancy. It was concluded that the negative influence stemmed from the period 1991 to mid-1993 and that adverse economic conditions were the most likely explanation for the observed increase in stunting. Children in the rural area had to some extent been able to recover from stunting between 1994 and 1995. The prevalence of acute food deprivation, as indicated by higher levels of nutritional wasting, increased between 1993 and 1994 in the rural area and declined between 1994 and 1995 in the urban area.

The analysis of paired observations indicated that the levels of wasting between 1993 and 1994 increased both in Murehwa district and in Chitungwiza. The deterioration in the rural area was very severe in all age categories. This indicates short-term deficiencies or starvation. Unlike in the urban area, the deterioration in the rural area was hardly reversed between 1994 and 1995. In other words, the children in the rural area had become more skinny between 1993 and 1994 and they remained skinny between 1994 and 1995. This was attributed to the combined effects of poor harvests due to drought, economic depression and probably AIDS. Huge variations were found in several indicators of nutritional status as between geographical areas in both Chitungwiza and Murehwa district. This has policy implications.

Clinic-based mortality data in Murehwa district showed that maternal mortality was at its highest in 1992 and 1993 while neonatal mortality rates had more than doubled between 1991 and the first half of 1995. In Chitungwiza, the neonatal mortality rates fluctuated over time but were generally well above the rate found in the 1994 DHS. Other sources confirm that several mortality rates have started to rise in the late 1980s or early 1990s. It is generally believed that the observed trends are due to a combination of





economic decline, deterioration of the quality of healthcare, drought and the HIV/AIDS epidemic.

7.4 Conclusions and policy implications

The issue of the social impact of structural adjustment has attracted much attention since the mid-1980s, notably after the publication of the much-cited work *Adjustment with a Human Face* by Cornia *et al.* (1987). Some have claimed that there is little evidence of the existence of any general rule with respect to “winners” and “losers” in the adjustment process (for example, Azam, 1994). Others are more outspoken, not least the World Bank itself, the most powerful advocate of structural adjustment.

The 1994 World Bank policy research report *Adjustment in Africa—Reforms, results and the road ahead* investigated 29 countries in sub-Saharan Africa that were undergoing structural adjustment between 1987 and 1991 (World Bank, 1994). The report asserts that (p. 7):

In African countries that have undertaken some reforms and achieved some increase in growth, the majority of the poor are probably better off and almost certainly no worse off. The poor are mostly rural [sic], and as producers, they tend to benefit from agricultural, trade and exchange rate reforms and from the demopolization of important commercial activities. As consumers, both the urban and the rural poor tend to be hurt by rising food prices. But adjustment measures have seldom had a major impact on food prices in either the open market or the parallel market, which supplies most of the poor.

This view is clearly much too optimistic and it is not supported at all by the findings of the current research nor by the work done by others. In a very comprehensive review, and probably the best so far of studies on the impact of structural adjustment on the health of mothers and children, Costello *et al.* (1994), in their report *Human Face or Human Facade*, convincingly conclude that “... there is indicative evidence that adjustment has had a negative effect on welfare ...”

... at the same time there is little evidence for the proposition that adjustment promotes sustainable economic growth (at least in low-income countries), which is central to the view that the social costs of adjustment are temporary and off-set by long-term benefits.

The authors find it “... equally questionable that ‘safety net’ programmes have had more than a marginal effect in limiting the impact [of adjustment].”

They state that very few studies have attempted to document the changes undergone by households in sub-Saharan Africa over any length of time during structural adjustment periods. This is because, on the one hand, it is difficult to measure the social impact of structural adjustment and, on



the other hand, the possibilities of doing research were limited because few countries had avoided implementing structural adjustment programmes when social change became a topic of interest. With regard to the latter, Zimbabwe was an exception and, therefore, it offered an almost ideal setting to study the social and health dimensions of change at the household level.

The changes that are documented in this report concern the period when Zimbabwe went through its early and intermediate phases of economic structural adjustment (up to mid-1995). There is strong evidence that there has been a serious economic degradation of the poor in both urban and rural areas in Zimbabwe and there is no sign that this process has come to a halt. It has also been demonstrated that very few households receive assistance from the SDF. It is unfortunate, though it was foreseen, that the delayed effects of the severe droughts of 1991–92 and of 1994–95 cannot be separated from the effects of structural adjustment. Moreover the impact of HIV/AIDS cannot be singled out. Official estimates as of late 1992 were that of a population of 10.4 million, about 800,000 Zimbabweans were HIV-positive, but unofficially the figure was estimated to be close a million. Sero-prevalence estimates among sexually active people ranged from 25 to 30 per cent in urban and certain rural areas that were close to transport arteries, mines or military bases, and from 10 to 15 per cent in the more remote rural areas (UNICEF, 1994). It is clear that this has a bearing on household economies, as HIV/AIDS can reduce household incomes and at the same time bring about additional expenditure.

At the *World Summit for Social Development*, which was held in Copenhagen in March 1995, the issues of poverty, unemployment and social disintegration were discussed by close to 100 heads of state from all over the world. The summit endorsed the so-called 20/20 initiative which had been proposed by several UN agencies and which called for the earmarking of 20 per cent of national budgets and 20 per cent of international aid to priority social needs. If implemented, this initiative will produce USD 30 to 40 billion in additional resources that are needed to provide basic social services up to the year 2015 in developing countries. Some have argued that the declaration to target the causes of poverty does not focus on the structural and institutional causes of poverty, and that the summit should have distanced itself from the ruling orthodoxy of economic structural adjustment that donor institutions—notably the World Bank and the IMF—have imposed on poor countries over the past 15 years. The view that these policies have become “too painful to bear” and that the health gains, especially in maternal and child health, of the 1960s and 1970s have been lost, has been openly expressed in editorials and commentaries in leading medical journals, such as the *Lancet* (Lancet Editorial, 1994; Havard, 1995) and the *British Medical Journal* (Wakhweya, 1995). In the *Copenhagen Alternative Declaration* (1995),





adopted by participants in the NGO Forum which was held at the same time as the World Summit for Social Development, the prevailing global economic model was rejected and a plea was made to innovate and devise "local answers to community needs, promoting the skills and energy of women in full equality with men, and benefiting from valuable traditions, as well as new technologies". A set of conditions was described which must be fulfilled at the household, community, national and international levels to realise this alternative vision of development.

Policy issues

Several main policy issues emerge from the research. First, the traditional gap between the rich and the poor appears to have widened and a substantial part of the population is no longer able to cope with the adverse effects of economic decline. This calls for a revision of the targets and strategies of the economic structural adjustment programme that is being implemented in Zimbabwe.

Second, the government's failure to protect the health sector from budgetary cut-backs and to guarantee high quality and affordable services at the primary level of care since ESAP was introduced in 1991 appears to have had a negative impact on household welfare. It is, therefore, suggested that more resources be made available for primary healthcare facilities. Maternal services (antenatal and delivery care) should be provided free of charge, as well as all other outpatient services at primary care centres in poor urban areas (in rural areas they are now free).

Third, poverty is not restricted to rural areas, although these do suffer more because of repeated drought. A large part of the urban population relies on multiple sources of income, which hardly provide food security let alone social security.

Fourth, the government and the international aid organisations have not been able to design and implement programmes which effectively protect the poor from the adverse effects of economic decline. Both the SDF and its successor, the PAAP, have proved to be mainly paper exercises.

Fifth, both in the rural and in the urban areas, there are strong geographical disparities in the levels of poverty and child malnutrition. This suggests that geographical targeting in poverty alleviation is appropriate.

And last, the bifurcation of the society into male-headed and female-headed households, which has become popular in socioeconomic research (including censuses), is inadequate for developing strategies to reduce poverty. It is clear from the current research that households headed by widowed or divorced women (*de jure* female-headed households; 12 per cent of all households in the Chitungwiza sample, 19 per cent of the sample in



Murehwa district) live in much poorer conditions than households headed by women whose husbands live elsewhere and are, therefore, not regular members of the household (de facto female-headed households; 5 per cent in the urban area, 31 per cent in the rural area). There is an urgent need for development and social welfare programmes to target their assistance towards the *de jure* female-headed households in both urban and rural areas.



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Figure 3.1. *Number of sources of income in Chitungwiza households by year .*

Figure 3.2. *Number of sources of income in Murehwa district households by year .*





Figure 5.1. *Mean height-for-age Z-score by age in Chitungwiza.*

Figure 5.2. *Mean weight-for-height Z-score by age in Chitungwiza.*



Figure 5.3. *Mean height-for-age Z-score by age in Murehwa district.*

Figure 5.4. *Mean weight-for-height Z-score by age in Murehwa district.*





Figure 5.5. *Mean change in height-for-age Z-score by age in Chitungwiza.*

Figure 5.6. *Mean change in weight-for-height Z-score by age in Chitungwiza.*



Figure 5.7. *Mean change in height-for-age Z-score by age in Murehwa district.*

Figure 5.8. *Mean change in weight-for-height Z-score by age in Murehwa district.*





Figure 5.9. *Proportion of children underweight at health facilities by quarter.*

Figure 6.1. *First OPD visits in Murehwa district by quarter .*



Figure 6.2. *Total of first OPD visits for Murehwa district as a whole by quarter .*

Figure 6.3. *First antenatal visits at RHCs in Murehwa district by month .*

Figure 6.4. *First antenatal visits at hospitals in Murehwa district by month .*





Figure 6.5. *Number of deliveries at RHCs and hospitals in Murehwa district .*

Figure 6.6. *Institutional and reported home deliveries in Murehwa district .*



Figure 6.7. *Average number of patients per day in general hospital wards in Murehwa district .*

Figure 6.8. *Admissions and average length of stay at Musami Hospital .*





Figure 6.9. *First OPD visits at Chitungwiza General Hospital by month .*

Figure 6.10. *First OPD visits at Chitungwiza municipal clinics by month .*



Figure 6.11. *Share of under-fives among new OPD patients at Chitungwiza clinics .*

Figure 6.12. *Total number of first antenatal visits in Chitungwiza by month .*





Figure 6.13. *Total number of institutional deliveries in Chitungwiza by quarter .*

Figure 6.14. *Number of patients per day in Chitungwiza General Hospital
general wards .*



Figure 6.15. *Admissions and average length of stay at Chitungwiza general hospital general wards .*

Figure 7.1. *Government real recurrent per capita expenditure on health (1990/91 to 1994/95).*



Figure 7.2. Health budget as a proportion of the total government budget (1990/91 to 1994/95)

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