

Making the invisible visible: how was famine averted in Southern Africa?

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Background

The 1992 Southern African drought was the region's worst drought in living memory. It affected around 86 million people in the region. In 1985, famine had followed a severe drought in the Horn of Africa. It seemed that famine might also follow the current 1992 Southern African drought. This was the mental map¹ I took with me when I moved to Zimbabwe in 1988 from Sudan, where I had worked during the 1985 famine, and initially, I was the 'prisoner of my experience'.²

In 1992, I was country director in Zimbabwe for Save the Children UK (SC-UK). We were already providing relief aid in two districts in Zimbabwe which were badly affected by the 1992 drought, Binga and Kariba. But while travelling in these

districts as the drought took hold, it became clear to me that villagers were already responding to the drought in various ways, long before significant quantities of relief food began to arrive. However, their activities seemed to be overshadowed by our relief operation, one of the largest ever mounted.

By the time the drought ended, famine had been averted – but how? To answer this question I organised a study on the drought (Eldridge, 2002).³

Making the invisible visible

What does not happen is often as important as what happens. But it is not so often investigated. Moreover, when research is carried out, or when major policies and programmes are being drawn up, people

¹ Mental maps are explained by Koger and Winter (2010). Mental models in the context of climate change are discussed by Tschakert and Sagoe (2009) in *PLA 60 Community-based adaptation to climate change* (Reed *et al.*, 2009). See: pubs.iied.org/14573IIED.html.

² We tend to make decisions based on information that is easily available, such as from personal experience, rather than seeking facts and figures that are really relevant. As personal experience is generally much more 'available' than e.g. research or news reports, this has been termed the 'prisoner of experience' principle (Gardner and Stern, 2002).

³ I carried out the original study after the drought, while head of Save the Children UK's regional office for southern Africa (1995–98). It involved 936 households in 72 villages in Malawi, Zambia and Zimbabwe.

and organisations without communicative power or political and economic power tend to be overlooked.

The study addressed both these issues. I aimed to answer the question: why was there no famine in southern Africa following the 1992 drought? I also aimed to understand the impacts of the drought on those whom it most affected – small farmers – and to investigate their responses to it from their perspective. These aims were linked, and I discuss the connection between them in the conclusion.

A livelihoods framework

I carried out the study within a livelihoods framework. The study focused on the 'activities' element of livelihoods, because its main purpose was to investigate the responses of low-income rural people to the drought. I designed the study, in mid-1995, with the late Saiti Makuku.⁴ Together with three research assistants, we field-tested various participatory rural appraisal (PRA) methods in a Zimbabwean village. We found that a modified form of proportional piling (Chambers, 2002; Sharp, 2007) was best able to capture both the effects of drought on rural livelihoods, and villagers' responses to drought (see Box 1). It was our

principal method, though other PRA methods were also used.

We used community mapping to obtain a household listing, and to identify the main features of each village studied. We asked key informants to group the households into three wealth categories: rich, poor and middle. Within each category five poor, five middle and three rich households were randomly chosen. We discussed the effects of the drought and their responses to it, using the modified scoring method described below. This method was used to develop a visual framework for the discussion. The approach was repeated with separate groups of men, women, children and older people in the rich and poor wealth categories.

Additional research assistants with previous experience of rural work were recruited and attended a 10-day training course, led by Saiti Makuku. Twenty-four villages were selected in each of three countries: Malawi, Zimbabwe and Zambia.⁵

The investigation was carried out in each village by a pair of research assistants: one to guide villagers through participatory scoring, the other to record the accompanying discussion. They were supervised by Saiti Makuku in the first village they visited.

Box 1: Proportional piling

Proportional piling is a semi-quantitative method for determining community priorities. Circles drawn on the ground or pictures drawn on cards represent problems. Participants are then asked to pile pebbles or beans in proportion to the importance of the problem. Using a fixed number of beans makes the technique more reproducible. Proportional piling is more quantitative than simple ranking because it allows for greater gradation of emphasis, e.g. a significant problem may receive almost all the beans, while the second most important may receive only two or three. This type of drastic difference would not be evident in a simple ranking exercise. Adapted from: tinyurl.com/fao-proportional-piling

Developing and discussing score-tables

General approach

By the end of the pilot phase, we settled on the following general approach. We grouped rural livelihoods into six main categories: obtaining water, obtaining food, generating income, expenditure, livestock and crop production.

Because the main aim of the study was to investigate villagers' responses to the drought, we focused on activities. This activity-focus was achieved partly by framing.⁶

⁴ Saiti Makuku worked with the Southern Alliance for Indigenous Resources (SAFIRE) throughout Southern Africa, particularly in his home of Zimbabwe, but also in Malawi, Mozambique and Namibia. Saiti was one of the first PRA trainers in Southern Africa and was instrumental in promoting participatory approaches within the region.

⁵ Selection was purposive: the villages selected were in low-rainfall areas.

⁶ Framing is discussed in sections 1 and 2 of a discussion paper which accompanies this article (Eldridge, 2013).

How questions are framed (worded and presented) can significantly influence the responses to them. For example, we were interested not only in changes in food sources, but in the activities involved in these changes, so we discussed with villagers changes in how they obtained food. This activity-focus also facilitated a 'causes' and 'consequences' questions discussion (see below).

We broke each livelihoods category down into 5–8 sub-categories. For example, food was broken down into staples (grain, maize-meal and tubers), vegetables and fruit, meat and fish, wild foods and groceries. For a few sub-categories, we did a further breakdown with villagers. For example, 'Obtaining staple food' was broken down into obtaining food from villagers' own production, purchases, food for work and drought relief, exchanges and gifts (see Table 1). This showed how the ways in which villagers obtained food changed during the drought.

Proportional piling: developing a score-table

During the initial introductions in each village, smallholders were asked whether 1992 was in fact a drought year and, if so, which year could be regarded as a baseline: which year was approximately 'normal' in terms of rainfall? All villagers chose 1991 as a reference year.⁷

The items in question (in a category or sub-category) were then listed vertically on flipchart paper, using words and/or symbols. We added three columns for 1991, 1992 and 1993. The following points refer to the ways in which villagers obtained staple food, but they are gener-

ally applicable. They can best be followed by reference to Table 1 and 2 (for staple food sources and for expenditure). For simplicity, the tables do not show the 1993 scores.

- We gave villagers 60 small stones (or seeds).⁸ We asked them to distribute them to show how much of their food came from each source in 1991.
- Once this column was complete, we asked villagers to compare the scores 'vertically', to see if they approximately reflected the relative amounts obtained from each source. They could change the scores if they wanted.⁹
- Once they were satisfied, they wrote the score on the paper. This formed a visual and publicly visible record, which could later be used for cross-checking.¹⁰
- We then drew a second column for 1992 and repeated the process.
- This time, for each item in turn, we asked them if they wanted to change the number of stones to reflect the change in food sources between 1992 and 1991. If the latter was lower, as it usually was, we asked if this approximately reflected reality. If not, they could change the individual scores.
- We then drew a third column for 1993 and repeated the process.

What the resulting score-table illustrated

This method produced a score-table which enabled the villagers, and the research assistants, to see in visual form:

- all the items in each category (or sub-category);
- their 'weighted importance', as perceived by villagers, relative to each other (a verti-

⁷ See section 2.2.2 'Anchoring and adjustment – the use of a memorable reference point' of the discussion paper (Eldridge, 2013).

⁸ We settled on 60, because we usually used 4–6 sub-categories, with an average of 10–12 stones for each. We found that more than 60 tended to be confusing – fewer than 60 did not provide enough sensitivity.

⁹ Comparison by participants is an important feature of participatory methods: it is a powerful means of generating information and insights, largely because it reflects a basic principle of behaviour. See 'Cross-checks' below, and the discussion paper, section 2.2 (Eldridge, 2013).

¹⁰ The visual and publicly visible nature of participatory methods reflects a basic principle of behaviour, and helps account for their effectiveness and popularity. See also the discussion paper, sections 1.4, 1.5 and 1.6 (Eldridge, 2013).

Table 1: Changes in how staple foods were obtained during the 1992 drought

	Poor households		Rich households	
	1991	1992	1991	1992
Own production	38	3	89	7
Purchases	42	53	11	56
Drought relief/food for work ¹¹	12	18	0	21
Exchange	5	3	0	6
Gifts	3	4	0	5
TOTAL	100	81	100	95

Table 2: Expenditure changes by smallholders during the 1992 drought

	Poor households		Rich households	
	1991	1992	1991	1992
Grain and maize-meal	29	52	15	36
Other food items	14	6	17	15
Agriculture/livestock	6	3	11	11
Education	14	7	12	12
Health	5	2	6	6
Transport	3	4	3	4

Box 2: The score-card results

Table 1 shows that the total amount of food obtained in 1992 fell for both rich and poor households, but especially for poor households. Comparing scores vertically with each other and with the total shows the relative importance of each item.

In both years, the poorest households in this district bought more staple food than they produced. But they bought even more in 1992 – almost two-thirds of their staple food. Rich households also increased their purchases of staple food in 1992. But scoring shows that they were able to buy more food than poor households, who were also forced to make more and deeper trade-offs: they spent less on education and health (and agricultural inputs), whereas rich households spent less mainly on household items.

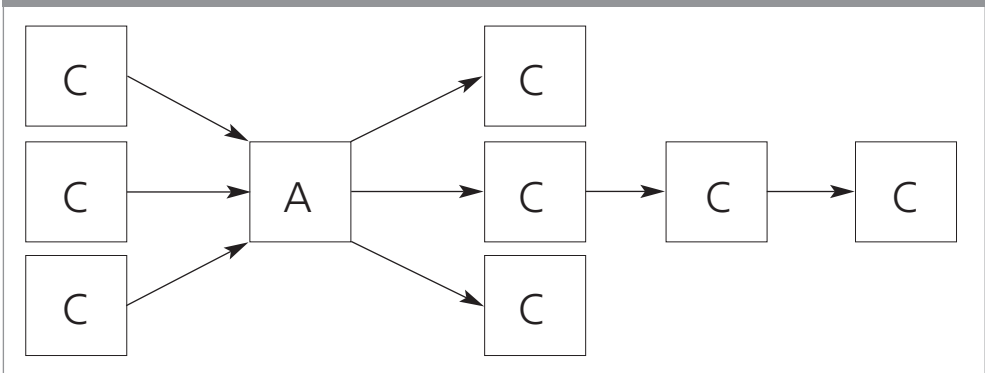
These facts would not have been revealed by simple

ranking. Scoring is a richer source of information, as long as it is accompanied by ‘holistic questions’, which can trace how one change in activity ripples through the fabric of rural livelihoods.

This difference shows how the scoring method can also reveal the difference between **accessible** and **accessed**. Education and health services were just as accessible during the drought as before. But poor households accessed them less than in 1992 (and less than richer households), because they had less time and money to spend on these services. Discussions revealed that some poor children dropped out of school during the drought due to lack of money for local fees, hunger, and the need to help their families obtain food and cash. This brief discussion illustrated the need to ask **causes** and **consequences** questions repeatedly when discussing score-tables.

¹¹ ‘Drought relief’ refers to food distributions which were not tied to food for work (FFW) projects.

Figure 1: The 'activity-burger' diagram



cal comparison) in any given time period;¹² and

- how each item changed between time periods (a horizontal comparison).

For each item, the change (if any) in its score illustrated three aspects of change (as perceived by villagers):

- the direction of change: increase, decrease, no change: a horizontal comparison;
- the approximate order of magnitude of change, if any: a horizontal comparison; and
- the change, if any, in the relative importance of each item: a vertical comparison.

The score-table provided a visual representation both of the links between various aspects of livelihoods, and of how the links changed over time – in this case, as a result of villagers' responses to drought. It also provided a visual framework for a form of semi-structured discussion.

Discussion: interviewing the table

Villagers were then asked various questions about the score-tables. Some answers to these questions emerged while villagers were developing the score-tables – scoring them prompted unsolicited comments. It was therefore necessary for one of the two research assistants to note down key points during scoring (as well as during the

discussion which followed its completion); the other oversaw the scoring process.

There were two main types of question. Questions about details:

- Who? What? Where? When?
- How much? How often? How?

Questions about causes and consequences (or 'C' questions):

- About the causes of the changes, if any, in the item in question (usually an activity in this study, for example, changes in how villagers obtained staple food). Why did this happen?
- About the consequences of changes, if any. What happened as a result?

In training, we emphasised the need to ask the two 'C' questions several times: there is often more than one causal factor (or reason or influence) at work when someone does something, or when something happens. Similarly, there may be more than one consequence of a particular activity (or event). This is further discussed below.

We showed an 'activity-burger' diagram (above) showing a given activity sandwiched between one or more causal factors and one or more consequences. We also asked villagers what support they would want, if drought struck again, to help improve their responses.

¹² 'Weighted importance' differs from ranked importance. It shows the proportional contribution of any one item to the total. For example, in the food sources score-table, a ranked order for 1992 would show that purchases and own production were respectively the largest and second largest sources of food for poor households, but would not reveal the large difference between their contributions.



Photo: Christopher Eldridge

I took these photos during a follow-up study in Malawi in 2004. A woman and her daughter have been cutting down trees to sell for firewood. It illustrates a relatively effective but environmentally damaging response to drought.

Iterations: cross-checks and additional information

We repeated the above sequence with individual households in three different wealth categories and with different groups of women, men, children and older people.

There were three main purposes of these iterations:

- to investigate how the effects of the drought and the responses to it varied according to three variables (wealth, gender and age);
- to obtain more specific information; and
- to cross-check (see below) information and some conclusions.

Cross-checks

Several kinds of cross-checks were used to check the results:

Within a given score-table

A given score in 1992 could be checked in two directions: by comparison to its score in 1991, and by comparison to the scores of other items in 1992.

Between different score-tables

We could see (by comparison with those recorded on flipcharts) if an increased score for obtaining food from purchases was reflected in an increased score for expenditure on maize-meal.

Between groups

For example, some details provided by men could be checked with those provided by women, children and older people.

With information provided by key informants

This included key informants outside the villages: e.g. teachers, health workers and agricultural extension workers. For example, if villagers said that some children had dropped out of school, we checked this with a teacher.

With official data

One advantage of carrying out the study retrospectively was that we could refer to reports published shortly after the drought ended by government ministries, the

Photo: Christopher Eldridge



Southern African Development Community (SADC), research institutes (e.g. the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), United Nations' World Food Programme (WFP) and donors such as the UK Department for International Development (DfID, or Overseas Development Agency as it then was).

Issues

Consequences – several kinds

When discussing the consequences of villagers' responses to the drought, we sometimes found it useful to distinguish between three types (or combinations) of consequences:

- a single consequence;
- two or more parallel consequences; and
- one or more sequential (or knock-on) consequences.

These differences are illustrated in the activity-burger diagram and by the changes shown in the two tables.

Support questions

During the discussions it emerged that some household responses to the drought were:

- relatively effective but environmentally damaging (e.g. cutting down trees to sell for firewood);
- non-environmentally damaging but relatively ineffective or very time-consuming (e.g. gathering and selling wild foods).

In the support/policy discussion, it would therefore have been useful to focus on support/policy suggestions which would promote sustainable livelihoods in ways which were non-damaging, cost-effective and time-effective.

The psychological basis of proportional piling and other participatory methods

Following the study, it turned out that proportional piling has a psychological basis: it reflects certain deeply rooted modes of thinking, decision-making and behaving. Moreover, participatory methods in general also have a psychological basis.¹³

¹³ When reviewing the proportional piling method and participatory methods in general, it became apparent that aspects of them reflected certain fundamental principles of human psychology. Advances made in the understanding of these principles have contributed to a revolution in the behavioural sciences over the last 40 or so years, and this revolution has paralleled the participatory revolution in the last few decades (Cornwall and Scoones, 2011). See the discussion paper (Eldridge, 2013).

Challenges

Data volume and linkages

This approach generated a large volume of varied data, partly because of the many linkages between different livelihoods activities, and partly because of the cross-checks used. These issues would need to be addressed during the pilot phase of any new project.

A holistic, networked mindset versus a linear mindset

*It is easier to act your way into a new way of thinking than to think your way into a new way of acting.*¹⁴

During training, we did not focus enough on developing the 'mental maps' which the research assistants needed to navigate through the many issues which the score-tables generated, thereby rendering the intricate latticework of rural livelihoods more visible. Research assistants initially focused only on a few aspects of the score-tables, and did not ask enough 'causes' (why?) and 'consequences' questions, even though it had been emphasised during training. This was rectified during the follow-up visits by the trainer, but it would have been better to practise this issue during training.

Conclusion

For learning from past experience, reflecting on what does not happen is often as important as reflecting on what happens. Additionally, reflecting on things that are

often not measured (for example, activities) may be as important as those that are (outcomes, for instance). In the case of the 1992 Southern Africa drought, both these omissions were linked.

The primary aim of this study was to address the first issue: why did the 1992 drought not result in famine? But in so doing, it was also necessary to address the second: the activities of villagers in the areas struck by the drought appeared to have helped prevent famine. However, their activities had not been adequately investigated, partly because they were many, small and varied. The second issue was addressed by developing a modified form of scoring, within a livelihoods framework. This method revealed how a given response could have consequences that rippled through the fabric of their rural lives. By applying this method repeatedly, with variations, the first question was answered: famine was averted largely by the activities of those whom the drought most severely affected.¹⁵

The second omission led to a third: because the activities of villagers went largely unrecognised, they were not supported in effective ways. It appeared that, in most cases, they were not consulted during the planning phase of the 1992 drought relief operation. But consultation is not enough if it does not reflect the reality of what people actually do, or the inter-related nature of their activities and the consequences of their actions. Through these interactions, they also relate to, and so influence, each other. These relationships are captured by a term which,

¹⁴ Jerry Sternin, co-founder of the Positive Deviance Initiative (in Pascale *et al.*, 2010).

¹⁵ Within the limits of conventional emergency programmes, the 1992 relief and rehabilitation programme, one of the largest and best coordinated ever undertaken (Clay *et al.*, 1995), was a success. It was especially important during the months before the 1993 harvest. Nevertheless, famine in Southern Africa in 1992–3 was averted largely by the activities of those most severely affected by it, particularly in the 6–9 months before significant quantities of relief food began to arrive. However, the context was also important: there was no conflict in the worst affected countries, governments generally reacted responsibly, if belatedly, and donors were unusually responsive. This article focuses on the use of proportional piling to investigate changes in villagers' activities in response to the 1992 drought. The original country reports set these activities in the context of drought relief programmes by governments and NGOs, and suggested a number of policy recommendations for future drought relief operations.

appropriately enough, is used in Southern Africa. According to Nobel Laureate Archbishop Desmond Tutu (2013),

The methods used in this study reflect the African concept of 'Ubuntu'. This means that a person is a person through other people.

The social networks of villagers interconnect with the natural networks of the ecosystems on which we all, in rich and poor countries alike, ultimately depend. It was their activities within these networks, not just their actions as isolated individuals, which enabled the villagers of Southern Africa to survive the worst drought in half a century.

It is now over 30 years since Amartya Sen (1981) began his celebrated book with this observation:

Starvation is the characteristic of some people not having enough food. It is not the characteristic of there not being enough food to eat.¹⁶

It is also almost exactly 30 years since Robert Chambers (1983) drew attention to

the need to 'put the last first' in his seminal book on rural development. Since then, Chambers has been a leading advocate of participatory methods, which not only help put the last first, they also make the invisible visible. One reason the poor usually come last is because, from the perspective of many of those who make the decisions which affect them, they are invisible people, doing invisible things with invisible results. A modified version of proportional piling helped to make visible the many and varied ways in which 'the last' in the region's rural areas were first in one crucial respect: they responded to the drought months before relief food finally arrived.

Their activities suggest that Sen's opening observation might be amended to read: 'starvation is the characteristic of some people not **obtaining** enough food.' Fortunately, their resilience and resourcefulness in 1992 enabled them, if not to thrive, then at least to survive. Unfortunately, their poverty meant that they had to make trade-offs. They survived in the short-term, but at the cost of compromising their livelihoods and degrading some of the natural resources on which their livelihoods depended.

¹⁶ In *Poverty and famines: an essay on entitlement and deprivation* (1981), Sen argues that famine occurs not only from a lack of food, but from inequalities built into mechanisms for distributing food. See also Devereux (1993), and Devereux and Maxwell (2001).

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