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Famine revisited

Recent reports from Ethiopia indicate that famine has again struck the pastoral population of the south. A year ago an article in Nature *made the case that the collection of objective information in droughts is of the first importance in planning relief operations. The London Technical Group has undertaken the design and conduct of such surveys in Ethiopia and elsewhere. In this article Julius Holt, John Seaman and John Rivers of that organisation discuss their observations made on the pastoralists and farmers of Harerge Province, South-east Ethiopia, in mid-1974 after the first wave of drought. They comment on the failure of relief efforts to prevent death and disruption when the rains again failed.*

ABBAS

POPULATIONS do not suddenly starve; but starving populations becoming sudden and dramatic news. The process leading to famine after a natural catastrophe is prolonged and complex and occurs against a background of endemic malnutrition and poverty. By the time a famine is internationally recognised it is already at or past its peak, and relief aid does not usually begin to arrive in significant quantities until the starvation crisis is over and the majority of famine deaths have occurred. Emergency aid is, moreover, disproportionately costly, and economic considerations therefore support the humanitarian reasons for investing in timely and informative surveys to warn of developing famines and to guide effectively in their relief.

A year ago, workers from the London Technical Group and the Medical Research Council Dunn Nutrition Unit described in *Nature* their experiences in the drought-affected areas of north-eastern Ethiopia, pointing out the need to develop standardised survey techniques both for rapid famine assessment and for monitoring the situation during the danger period. By that time the focus of the drought was no longer in the agricultural highlands of the north-east but had shifted to predominantly pastoral regions, particularly the vast rangelands of Harerge Province in South-east Ethiopia. Some reports of starvation emanated from that area as early as the end of 1973.

The importance of rapidly gained but systematic information had won increasing recognition among relief agencies. Members of the London Technical Group were invited by the Ethiopian Relief and Rehabilitation Commission to design and direct a survey of Harerge from May to July 1974, and the project was supported by UNICEF, USAID, Oxfam and Christian Aid.

The purpose of the survey was twofold: the most urgent objective was to discover as rapidly as possible the nutritional condition of the population, but it was also hoped that the information gained would form the basis of a longer-term surveillance scheme. The problems presented were not inconsiderable. The geography of the region to be surveyed was daunting, for Harerge, which shares an extensive border with northern Somalia, is larger in area than England but has an extremely poor road system. A highland ridge, supporting an agricultural population of some 2.2 million, cuts into a semi-desert lowland ('Issa and Ogaden) which is seven times greater in area, with a population in normal times of up to 0.5 million pastoralists. There was a profound lack of baseline data on the area, which made it impossible to relate the survey sample accurately to the population distribution and thus made it necessary to include a large retrospective element in assessment.

The logistical difficulties were greatly reduced by the provision of three helicopters by USAID which, with some ground transport, allowed survey teams to make overnight stays at 65 sample sites within a month. But the difficulties inherent in the lack of baseline data remained largely intractable, especially since the effects of the drought were at the time of survey less dramatically obvious than some had expected.

The survey of the nutritional status of more than 1,000 children showed that both pastoral and agricultural populations were generally in a poor nutritional state, but severe protein-energy malnutrition was exceedingly rare. During the preceding twelve months death rates reported to us for children, particularly those of pastoral groups, had, however, been far higher than any reasonable estimate of mortality in a developing country would lead one to regard as normal, and the current demographic picture supported these reports. It was clearly not possible to be certain of the causes of death, but we were satisfied that no epidemic had occurred, and there seemed no reason to doubt the statements of the people that the chief cause had been malnutrition.

Experience elsewhere had led us to suspect that we might indeed be faced with a population which had suffered a tragedy but which at the time of the survey would not exhibit signs of extreme undernutrition. Much of the enquiry was therefore directed to a rapid attempt to define the impact of the drought on food availability for the near future. The Ethiopian Ministry of Agriculture had reported patches of poor harvest in the highland areas of the province, with some serious losses among the cultivators of the lower hills. Local people reported extremely high losses of livestock (cattle, sheep, goats and camels) and systematic observations during the survey of livestock held by pastoral groups showed that herds and flocks held were at about the number which had been reported as the minimum necessary for survival in the area. Before the main 'Gu' (March–May) rains, which had occurred just before the survey, these had been in poor condition and their lowered milk production could well have caused much of the mortality.

But the problem had been compounded by the fact that grain prices had risen steeply, and the survey found that rises were particularly extreme in the Ogaden where grain had been un-

available in some markets at times during the year. The significance of this is that the pastoralists live not only on the produce of their animals but also by selling them in order to buy grain. At the time of the survey the combination of livestock losses, the fall in the cash value of animals and the rise in the cost of grain had reduced the effective wealth of many groups to less than 20% of the level of the previous year and to under 10% of that of times before the drought. During the height of the drought some animals had been unsaleable and herders had been forced to eat animals they were no longer able to keep alive. The nutritional implications of this are considerable: for example, a heifer sold for grain would normally buy at least 8 times as much food (in calories) as are available from its meat.

The survey showed that the physiological reserves of this population were low and that their economic reserves had fallen to a point which in many instances was not far from that of no return. In short, this was a highly precarious nutritional situation. But the implications for relief were problematic. Grain is the basic currency of relief for pastoral as well as agricultural populations. But the logistics and administrative difficulties of distributing grain to a mobile population have never been successfully solved. The scheme actually adopted relies on the encampment of groups round administrative centres, thus simplifying the transport of grain. The result is large congregations of women and children together with some aged people; the men continue to move with the animals. There are three inherent dangers in this: first, the threat of long-term disruption in the social lives of families and groups; second, the risk of epidemic disease in such large congregations; third, the possibility that groups will not arrive in centres in time to avoid some mortality. The temptation under stress for whole groups, including the men, to become entirely dependent in the long-term on grain hand-outs is of concern to the authorities, and has important implications for the future of the pastoral economy in an area where agriculture will not be a viable alternative at least for many years to come.

At the time of the survey we concluded that a further failure of the short rains in September–October 1974 was likely to be catastrophic for the pastoralists, whereas normal rains would allow them to take a vital step in strengthening their self-sufficiency. The recommendations, therefore, were that although resources should be husbanded for a major relief operation in the event of rain failure—by stock-piling grain and making provision for the large amount of transport which would be required—the other urgent priority at that time (July 1974) was the institution of a surveillance programme to monitor changes in the situation. Unfortunately the kind of sustained field-surveillance originally envisaged did not materialise. Meanwhile, a limited relief programme continued for the relatively small numbers of destitute people who were then clustered around centres.

In the event the autumn rains were sparse. Reports reaching us from the Ogaden in the first part of 1975 spoke of a deteriorating situation with numbers around relief centres (mostly women and children) growing to 50,000. A recent report from Oxfam cited a peak death rate in this group of 150 children a day, which, in spite of the efforts of medical teams, had not fallen below 50 a day by early April. Such numbers of people in such condition offer a disturbing indication that the linked problems of surveillance and effective relief there are far from overcome.

Most estimates of food availability in developing countries depend on ratios of estimates of crop yield and spoilage to estimates of population, and are subject to large errors. In particular, the sensitivity of such ratios as indicators of change is poor. Prediction of famine is only possible at the most general level by such techniques, and it is impossible to pick up the smaller local shifts between hardship and disaster. On the other hand, a comprehensive assessment of a famine situation has been shown to be possible using the kind of nutritional and socio-economic measurements that formed the basis of the survey described here, with the special advantage that, provided care is taken with the sampling technique, the accuracy of the system is sufficient to indicate relatively small changes in the nutritional status of local populations.

Baseline surveys and the organisation of repeat surveillance should be considered a priority in those areas of the developing world which are now identifiably prone to extreme localised food shortages. This would not constitute a large diversion of resources. For instance, in spite of its size the Harerge survey cost, helicopters apart, less than £10,000. In subsequent surveillance of such areas the body of the work does not need highly trained personnel or a high capital investment in sophisticated equipment. The use of expensive air transport tends to be the price paid for belated reactions to an emergency. In any of the recent African droughts an effective field-surveillance programme could have been mounted for less than 1% of the cost of the total relief programme, and could have helped to ensure that for the first time aid arrived before people died of starvation. □

Purchasing power of animal herds in grain equivalents.