REPORT ON FAMINE RELIEF
IN KENYA
1962
FOREWORD BY MR. T. NEIL, C.M.G., T.D.
(Permanent Secretary, Ministry of State for Constitutional Affairs and Administration)

This Report follows on from the earlier Report, "Famine and Floods in Kenya, 1961". It will be recalled that at the beginning of the year Kenya was just recovering from the disastrous floods of 1961 which had made famine relief distribution very much more difficult and which had necessitated the Government calling upon the assistance of the Armed Forces in wide-scale operations. Early in 1962 it was possible to stand down Military and Royal Air Force assistance and revert to normal methods of distribution. Following upon the exceptional rains of 1961 and reasonable rainfall in most places during the "long rains" of April–June, 1962, food prospects improved rapidly, particularly in Ukambani, and it became possible to reduce the number of people who were dependent upon famine relief for their existence. In February we were feeding upwards of half a million people, but the number has steadily fallen away during the year until in December we are feeding the relatively small number of about 70,000. Famine relief is now very largely a zonal problem affecting three main areas—

(a) in the Coast hinterland where, due to the failure of the "long rains" earlier this year and recent poor "short rains", we continue to be responsible for about 50,000 people, mainly Duruma and Wataita, and Giriama in certain parts of Kilifi District. This area is very much a marginal agricultural zone and it is expected that we shall have to continue with famine relief measures until a crop can be harvested from the "long rains" of 1963. Famine relief will, therefore, be required on a considerable scale in these places until July, 1963, at the very earliest;

(b) in Turka, where we still have about 6,500 people, mostly women, children and old persons, in five famine relief camps. Mention is made of these camps in the body of the Report and it is hoped that the Churches will continue to provide supervision until the problem of rehabilitating the camp inmates is finally solved, but that may not be until well towards the end of 1963; and

(c) in the Kajiado District of Masai, in clearing up the aftermath of the devastation caused by famine and floods, with consequent loss of livestock. There the problem is resolving itself very much according to plan and it is expected that the whole of Kajiado District will be off famine relief early in 1963.

In brief, then, the year has seen a steady improvement in the situation and it is now one which is again well within the capacity of the Provincial Administration to handle in the same manner as it has done in the past where there have been local food shortages. The National Food Relief Committee has dissolved, the purposes for which it was formed having been very substantially achieved.

One of the most worrying aspects, and one which presents considerable anxiety for the future is the very rapid growth in the country's population. The preliminary estimate of population as a result of the 1962 Census indicates that the population has gone up from about 5½ million in 1948 to more than 8¾ million in 1962, which represents an average rate of growth of 3.2 per cent per annum. These figures, incidentally, despite the inherent problems they pose both for the present and for the future, are the strongest testimony to the merits of the Government which the country has enjoyed in the past, indicating as they do mastery over tribal wars, famine and pestilence.

It is significant that this population growth has not been confined solely to the better agricultural areas, but is also generally true of the less favourable areas where the opportunities for a matching agricultural improvement are less promising. It may well be that in these areas the population is increasing more rapidly than food production and in these circumstances it would be reasonable to expect in future more frequent recurrences of local famines. The overall Kenya situation does no more than illustrate a world-wide trend, to which the Food and Agricultural Organization of the United Nations has drawn attention in its Report, "The State of Food and Agriculture, 1962", where it is recorded that whilst there has been a pause in the expansion of world agricultural production, world population has increased during the year. The F.A.O. Report also notes that since the end of the 1939–45 war, population in the less developed regions of the world has increased by no less than 51 per cent, whereas world food production has increased by only 13 per cent. This, however, is not the whole picture, since almost all the increase in world food production has been contributed, not by the less-developed regions where increases are needed to raise the standard of living, but by the more developed parts of the world.
The Kenya picture is, therefore, very much the world picture in microcosm. The great and pressing need, if we are to avoid a recurrence of local famines, lies in the improvement of agriculture and ways and means must be found of raising the productivity of the less agriculturally favourable areas so that they can support their increased populations. Productivity in turn depends to a very large extent on the nutritional status and health of the workers, since underfed people are lethargic, more idle and less productive. The development of agriculture in these areas will not be easy, therefore, and will require not only the injection of considerable capital for such projects as irrigation and improved crops, but also a consistent educational effort by the agricultural experts and by all concerned with the government of these unfortunate areas.

Recent events suggest that sooner or later the country will have to turn its attention to the storage of a proportion of its own agricultural surpluses, both in grain and other commodities, so that there is always a carry-over from the fat years for use in the lean; the economic and scientific problems will be considerable, but the advantages to the country in dealing with any repetition of the 1960–62 conditions will be manifest. It is inevitable that such conditions will recur at some future date and it may not then be possible to draw on the foresight and providence of other countries. During the famine period we have benefited from the agricultural surpluses of the United States and dietary supplements were received from a number of countries. These provide, however, only limited and temporary assistance and they do not lessen the importance of planning for an adequate food supply for our people, produced primarily from our own resources.

The problems of the marginal areas must then be tackled with redoubled vigour and with the full support of public opinion. There is no doubt but that the 1960–62 famine conditions in many parts of the country were exacerbated by the indifference which the people had shown in the past to sound agricultural advice on such matters as improved husbandry, crops and methods of conservation. Ukambani and the Coast hinterland, to specify but two such areas, added to their difficulties over the period by their own sloth and neglect in years gone by.

For the future, I suggest that the Government’s attention, supported by informed public opinion, should be directed to—

(a) the improvement of crop and animal husbandry, especially in the marginal areas where the need is greatest;

(b) the problems of the storage of surpluses to be carried over as an insurance against a repetition of the recent famine years;

(c) an assessment of the merits of unrestricted population growth in a land where economic growth is limited; and

(d) the political considerations involved in relying on Western (or, indeed, any other) sources for substantial food supplies. Those are part of the political beliefs of the new East African countries. “Abstract liberty”, as Burke commented, “like other mere abstractions, is not to be found”, and practical ideas of nationhood must take account of the need to feed ourselves independently of foreign benevolence.

The first three of these questions are being considered by the National Advisory Council on Nutrition, but whatever measures are taken will require the full support of the people achieved by widespread education and information efforts.

The cost of the past two years in cash, in goods and in services has been enormous, representing perhaps the largest single project undertaken by the Government in this period. Expenditure against Her Majesty’s Government funds amounted to £775,000, by the National Food Relief Committee £200,000, and £145,000 provided by the Kenya Government; services amounting to £270,000 were provided by Her Majesty’s Forces and food to the value of £3,206,000 was received from the United States Government. In all, and taking into account special grants amounting to £816,000 made by Her Majesty’s Government for the repair and rehabilitation of damage, the famine and flood operations have cost nearly £5½ million. And the achievement? In the most simple terms many tens of thousands of lives were undoubtedly saved.

In submitting this second and, I trust, the last report on the subject of famine, one must hope that the lessons learnt have been noted for the future and that, if by any great misfortune, famine occurs again on a large scale, the Administration of the day will re-read our experiences and take action accordingly.

Nairobi,
31st December, 1962.
## CONTENTS

<table>
<thead>
<tr>
<th>Foreword</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CHAPTER ONE</strong></td>
<td></td>
</tr>
<tr>
<td>General Review</td>
<td>1</td>
</tr>
<tr>
<td><strong>CHAPTER TWO</strong></td>
<td></td>
</tr>
<tr>
<td>Weather, 1962</td>
<td>8</td>
</tr>
<tr>
<td><strong>CHAPTER THREE</strong></td>
<td></td>
</tr>
<tr>
<td>Provincial and District Reports—</td>
<td></td>
</tr>
<tr>
<td>(a) Coast Province</td>
<td>10</td>
</tr>
<tr>
<td>(b) Southern Province</td>
<td>19</td>
</tr>
<tr>
<td>(c) Central Province</td>
<td>22</td>
</tr>
<tr>
<td>(d) Rift Valley Province</td>
<td>26</td>
</tr>
<tr>
<td>(e) Nyanza Province</td>
<td>27</td>
</tr>
<tr>
<td>(f) Northern Province</td>
<td>32</td>
</tr>
<tr>
<td><strong>CHAPTER FOUR</strong></td>
<td></td>
</tr>
<tr>
<td>Medical and Nutritional Considerations, 1961–62</td>
<td>39</td>
</tr>
<tr>
<td><strong>CHAPTER FIVE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>APPENDICES</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>47</td>
</tr>
<tr>
<td><strong>ILLUSTRATIONS</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Centre</td>
</tr>
<tr>
<td><strong>MAPS</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>at end</td>
</tr>
</tbody>
</table>
CHAPTER ONE
REVIEW OF 1962

General Situation

Military assistance, mainly in connexion with repair of communications by Royal Engineer units, as well as assistance with military transport, which had been given in 1961 continued until late February, 1962, when the whole of the military units engaged were stood down and Operation “Late Water”, as it was known, came officially to an end.

In January, the principal districts receiving famine relief were the whole Machakos District, Tana River, Kajiado, Turkana and the Malindi Subdistrict, together with very large numbers in parts of Central Nyanza. At this time approximately 400,000 persons were being kept alive on famine relief and the organization, administration and distribution of foodstuffs on this scale taxed the resources of the Government to the limit. Of those receiving famine relief, no less than 264,000 were Wakamba in Machakos District and the Government and the Provincial Administration were extremely concerned at the continuation of famine relief over such a long period—approximately a year—and the inherent danger that this would build up a particular “famine relief mentality” amongst the people. It was widely thought that the Government, due to the exigencies of the situation which had existed throughout 1961, was in danger of creating a new form of social service which the people would expect to continue indefinitely and from which it would be difficult to wean them away. The main famine areas as at January, 1962, are shown on the map (attached to cover). January, 1962, represented the peak of the famine relief operations during the year, with a total distribution of 77,933 bags (each of 200 lb.) of maize, and a large part of this total went to the Machakos and Kajiado Districts.

During the first quarter of 1962, it proved possible to reduce food allocations to Machakos because of the excellent crops then coming to harvest from plantings in the last quarter of 1961, and it finally ceased at the end of March, as far as Machakos was concerned. No further foodstuffs were, therefore, allocated to Machakos for the remainder of the year and the Wakamba people were able to rely entirely on their own crops of maize, beans and vegetables, and cash realized from the sale of such crops. Although the Machakos District received massive famine relief supplies during 1961, early in 1962 the district already had a substantial food surplus for export. The people, in the event, accepted the need to rely upon themselves and not upon the Government and no particular problems in connexion with the reduction of famine relief were experienced.

In April, the districts suffering most from famine included Kajiado, Fort Hall, Tana River and Central Nyanza all of which, except Kajiado, had had their plantings of prospective food crops inundated by heavy rains. In Kajiado, although grazing was abnormally plentiful throughout the year, five-sevenths of the Masai stock (about 500,000 head of cattle), had perished in the floods. Consequently it was not until about September that sufficient calving of cows began to bring back to normal the supplies of milk, which with ox blood, is the main diet of this tribe. It is estimated that in 1959 there were in Kajiado District some 700,000 head of stock, whereas only 200,000 head were left by the end of 1961.

Owing to the partial failure of the normal harvests in the Rift Valley Province, small allocations of food were made to Nakuru, Thomson’s Falls, Naivasha and West Pokot, and also Baringo District. Likewise, Tana River District was allocated famine relief maize in the first quarter of the year. In Kilifi, Taita and Kwale Districts where, owing to the failure of the “long rains” earlier in the year, very poor harvests were reaped, substantial quantities of famine relief had to be allocated in the latter half of the year. This was particularly so in the case of Kwale hinterland where, apart from a comparatively few farmers who were able to buy food from the sale of stock, practically no normal food crops were available. This led to Kwale District being by far the most serious famine area towards the end of the year.

In November and December nearly half of the total of monthly allocation for the whole Colony was being distributed in the Coast hinterland. The field staff of both the Community Development Section of the Ministry of Social Affairs and the Kenya Branch of the British Red Cross Society gave valuable assistance in the distribution of food in Kwale District. Similar circumstances, but on a smaller scale, occurred in the adjoining Taita District, which received allocations of maize in every month of the year except July. Other districts (as is
shown in Appendix III) had, during the year, to be given famine relief, e.g. Narok (April–November), Nyeri (March–October), Lamu (July–August), South Nyanza (February–November), Kericho (February–June), Embu (January–March), Malindi (March–September) and Garissa (January–March).

Unless some further unforeseen emergency occurs, it is expected that only the following districts will still be requiring some famine relief in early 1963—Kajiado, Kwale, Taita, Central Nyanza, Kilifi and Turkana. For the latter district special measures to cope with the long-term problems of malnutrition are now under consideration.

The National Food Relief Committee

Under the chairmanship of the Hon. Humphrey Slade (Speaker of Legislative Council), this Committee continued its most useful functions throughout the year and held its 22nd (and last) meeting on 3rd December, 1962, when it was decided that the balance in the Famine Relief Appeal Fund (amounting to nearly £7,000) should be handed over to the National Advisory Council on Nutrition to further the long-term activities of this body. The Fund reached over some £200,000—full details of which are given in Appendix VI. The Chairman has reported on the work of the Committee as follows:

“The circumstances in which the National Food Relief Committee came to be established some 15 months ago, its precise composition and terms of reference, and the general nature of its activities, have already been described in the previous Official Report entitled 'Famine and Floods in Kenya 1961' (Chapter IV paras. 42–51); but, now that this Committee is at the point of dissolution, it has been asked for a dying declaration of its experiences, which should be read in conjunction with that previous Report.

“Since local famines have been only too frequent a feature of Kenya's history, and they have usually been handled by the Provincial Administrations and statutory marketing boards with the utmost efficiency, the first question is why should a National Committee have been needed at all on this occasion? The Committee would like to reply that the only justification for its existence was the unprecedented scale, both in gravity and in geographical extent, of the drought and floods in 1961 and their aftermath; but that the Provincial Administration, or any authority replacing it with equal efficiency, supported by the statutory marketing boards will remain competent to deal with local famines of lesser degrees (which is the reason why the Committee accepts dissolution now, notwithstanding the continuation of drought and floods in certain localities).

“Even during the life of the Committee, the primary responsibility for all action in the field remained with the Provincial Administration and statutory marketing boards, supported by the armed services and voluntary organizations, and the functions of the Committee (apart from public appeal for funds) were no more than advisory.

“Nevertheless, when drought or floods reach such a scale as to endanger nearly half a million people, the crisis assumes national proportions, and a National Committee is needed—

(a) to arouse and to represent the national conscience;
(b) to achieve fully co-ordinated assessment of the needs of each stricken area and of the overall requirements, both in respect of foodstuffs and in respect of auxiliary services;
(c) to keep Government fully informed of all such requirements;
(d) to ascertain and to tap all other possible sources of assistance by way of money, food, or services, whether local or overseas;
(e) to establish some uniform policy with regard to the scale and conditions of relief, and
(f) to assist the Provincial Administration in explaining to the public the purposes and limitations of famine relief.

“For these purposes, the composition of the National Food Relief Committee was found to be eminently suitable. It consisted in effect, of three sections, namely—

(1) Members of the Legislative Council representing the areas most seriously affected;
(2) Representatives of all the organizations from whom help was forthcoming by way of gifts or services (such as the U.S. Agency for International Development, the armed services, the British Red Cross Society, missionary bodies and statutory boards).
(3) Representatives of all the Ministries most closely concerned.
"The first purpose stated above, of arousing and representing the national conscience, was undoubtedly achieved. That is proved by the remarkable response to the Committee's appeal, both from the people of Kenya of all races, tribes, and ages, and from generous sympathizers overseas, which has already been described by 'Famine and Floods in Kenya 1961'. Appendix VI contains the Statement of Accounts.

"As regards assessment of the needs of each stricken area, some District Commissioners have naturally tended to discount any suggestion that this was beyond the competence of their own staff; but in fact it involved an unprecedented and almost superhuman strain upon small numbers of dedicated officers already burdened by many other duties, and the Committee believes that investigations and reports made on its behalf by Members of Legislative Council and by voluntary organizations already in the field helped to ensure a full appreciation of the situation in each district. Also, by receiving unofficial reports and instigating their investigation, the Committee served as a clearing house for disposal of complaints.

"Certainly, regular assessment of overall requirements of foodstuffs and auxiliary services was essential, when the normal resources of Government were inadequate, in such a great emergency, either to supply all necessary foodstuffs or to organize their proper distribution; and that purpose also was served by the Committee.

"In the ascertainment and most profitable exploitation of all possible sources of assistance, the Committee benefited greatly from the second section of its membership, representing external or voluntary organizations as described above. It was through such organizations, and thanks to the overall picture of requirements which their representatives obtained in the Committee, that Kenya received vast quantities of foodstuffs according to its true needs, and the invaluable auxiliary manpower and equipment of the armed services and voluntary organizations was deployed to the best advantage.

"The Committee endeavoured to ensure that local products were used to the maximum extent, and to guard against importation of foodstuffs to the detriment of local producers, in so far as its resources enabled it to do so. A considerable portion of the Famine Relief Fund was used for that purpose.

"It was, of course, primarily for the Ministry of Health to recommend scales of famine relief rations, and the Committee was hardly needed to achieve uniformity in that respect; nor was rigid uniformity of rations necessary or desirable, where some districts, though grievously affected by drought or floods, still had some local resources of special protein foods (such as fish). Nevertheless, at times when all available supplies of supplementary foods were insufficient to provide everywhere the full ration recommended by the Ministry of Health, the Committee had the task of advising upon the best use of available supplies in the light of overall requirements (e.g. restriction of certain supplementary foods to children and old people, or to particular districts where conditions were most severe).

"There were also questions from time to time as to the circumstances in which individuals should be entitled to famine relief, and as to the best methods of ensuring fair distribution among them; and in those matters the Committee was able to recommend certain general principles, though the precise application of those principles might have to be varied according to the circumstances of each district.

(Some examples of such recommendations are given in Appendix V.)

"Opinions may differ as to the extent to which the National Food Relief Committee has, in fact, helped the Provincial Administration in explaining to the public the purposes and limitations of famine relief; but there can be no doubt that it has given some assistance in that respect, either directly by public utterances or by answering demands and complaints, or indirectly through Members of Legislative Council who were members of the Committee. Certainly such Members of Legislative Council can, if so disposed, be very helpful indeed with regard to public relations, especially when the time comes to reduce or to stop relief.

"Though the functions of the Committee were wisely limited to the temporary task of assisting in relief of acute distress during a period of crisis, it became clear at an early stage of its operations that such crises were liable to recur, unless steps were taken to improve the production, availability and use of essential foods in the many parts of Kenya where the population lives in a chronic state of malnutrition, and so near to the edge of starvation that it does not take much by way of adverse weather to thrust them over that edge.
"It is, in fact, basically a matter for prevention rather than cure. The Committee was able to assist in short-term rehabilitation, by provision of seed for crops and the like, where such assistance would clearly produce better results at less cost than continuation of famine relief for a longer period; but, at the best, that achieved no more than restoration of a status quo ante, and more constructive measures of a long-term nature must be undertaken as soon as possible. To that end, on the advice of the National Food Relief Committee, Government has now established a permanent Advisory Council on Nutrition, with representation thereon of all Ministries which are in any way concerned with improvement of production, distribution, or use of essential foods. That Council faces problems much greater than those with which the National Food Relief Committee has had to contend; but it has made a most promising start, and all members of the expiring Committee wish it well."

The following extracts from the Minutes of the National Food Relief Committee meetings give suggested principles on which famine relief should be issued:—

**SCALE OF FOOD ISSUES PER HEAD AND ELIGIBILITY FOR FAMINE RELIEF**

It was agreed that the basic principle to be followed was 'keep the people alive'. With regard to local interpretation and assessment of this principle, it was agreed that the Committee should advise that the tying of this to the number of stock held by an individual should take into account his need to preserve some capital for the future, and the fact that, in current conditions, livestock were frequently either unproductive or unsaleable, or both. The meeting recognized, however, that application of any principle must vary according to local conditions.

Arising out of the discussion of eligibility for famine relief, Mr. Matano said that he was not in agreement with the practice of requiring women, as well as men, to work for issues of famine relief. A general discussion of this issue followed and it was agreed that the Committee should advise that the policy of requiring people to work in return for famine relief should normally be limited to able-bodied men, because women already had enough to do looking after their families, especially during periods of famine. It was, however, agreed that, where able-bodied men are concerned, regard should be had to the conditions under which they are required to work, bearing in mind that the scale of famine relief was not sufficient to feed a man who has to do a very hard day's work, or has to walk a long way to and from the work required of him. The Committee realized, however, that the application of any principles of this kind might have to be varied according to local conditions or local customs.

It was noted that great progress was being made by the voluntary helpers in this field in teaching people to use supplementary foodstuffs. There was great scope for further work, however, and volunteers appeared to be available, but the extent to which they could be employed was limited by considerations of accommodation and transport in the districts. The Committee decided to advise that Community Development extension methods should be employed as much as possible to cover education needs, especially as regards teaching the proper use of concentrated foods.

The Committee approved a proposal from the Coast Province that where people were in a position to purchase half of the stipulated food ration, they should be allowed to do so on a commercial basis and the remaining half of their ration made up free of charge from famine relief stocks.

The note on the provision of famine relief prepared by Mr. Neil for circulation to the Provincial and District Commissioners was examined and was, broadly, endorsed by the National Food Relief Committee.

It was decided that the following points should be included in the note:—

(i) It should be made clear that the mere ownership of several cattle should not in itself be a disqualification for obtaining famine foodstuffs. There is a need to encourage retention of a reasonable number of cattle as a form of capital 'equipment' to keep down possibilities of famine in the pastoral districts in the future.

(ii) Where communal work is done to earn famine relief provisions, it should normally be confined to the able-bodied folk of the local community.

(iii) Where possible, supplies of ration should be supplemented with local foodstuffs.
Oxford Committee for Famine Relief

A welcome offer of £2,000 was received from the Oxford Committee for Famine Relief to purchase a suitable launch (to be named “Oxford”) to be equipped as a mobile dispensary for use on the Tana River to serve the riverine villages whose inhabitants suffered severely in the disastrous floods at the end of last year. This Committee not only donated £15,000 to the Famine Relief Fund, but is now considering financial assistance for the rehabilitation work being undertaken in Turkana.

Food Supplies

As already detailed in Appendix “F” of the 1961 Report, the normal weekly scale of rations for those on famine relief, as laid down by the nutrition experts of the Ministry of Health, was 9 lb. maize, 2 lb. dried milk or meat and 10 oz. vitamined edible oil, and this scale continued as the basic ration in all famine areas.

Maize.—Up to 31st August, all maize for famine relief had most generously been donated to Kenya by the U.S.A. (through its Agency for International Development in Kenya), and also large gifts of non-fat milk powder and edible oil (vitaminized locally) were received early in the year from A.I.D. Owing to the then accumulated large surpluses of Kenya-grown maize, from 1st September onwards no further maize was requested from the United States A.I.D. and thenceforward all Kenya’s requirements of famine relief maize were provided from local sources bought from the Maize Marketing Board at a special concessionary rate related to the export parity price of Sh. 28/50 per bag of 200 lb. A scrutiny of Appendix III shows that the demands for maize from most districts still receiving famine relief after August were, apart from Kwale and Taita, steadily decreasing in quantity in the last half, and more so in the last quarter, of the year.

A total of 263,422 bags of maize received free from the United States A.I.D. was distributed. During the year 69,141 bags were purchased from the Maize Marketing Board and 80,000 bags of maize received from A.I.D. are being used to replace some of the 96,000 bags of Kenya maize loaned to Government by the Maize Marketing Board for famine relief distribution in the floods emergency towards the end of 1961, when free supplies from U.S.A. were not immediately available.

In all, since the commencement of the famine relief campaign early last year, the equivalent of 474,034 bags (or 42,325 tons) of free American maize have been received and distributed for famine relief up to 31st August, 1962. Loans of A.I.D. maize were made by the Kenya Government to:

- Tanganyika ... 2,000 tons.
- Somalia ... 1,124½ tons valued at over £36,000 (to be replaced in wheat and cash).
- Uganda ... 1,000 bags × 200 lb. (or 100 short tons).

In addition to 2,300 tons of maize airdropped by the R.A.F. during the floods at the end of 1961 (as recorded in the Report for that year) the following quantities of maize were airlanded by:

- Royal Rhodesian Air Force ... 342,500 lb. (or nearly 153 tons).
- United States Air Force ... 20 tons.

All the arrangements for the distribution of maize during the year were once again carried out most efficiently by the Maize Marketing Board in accordance with the monthly allocation schedules prepared by the Executive Officer (Food Shortage) after receiving the relevant bids from each District Commissioner concerned. In very few cases had supplementary issues to be made during the following month. The value of food received from U.S. A.I.D. for famine relief was approximately £3½ million and consisted of maize, edible oil and milk powder.

Supplementary Foodstuffs

Edible oil, together with dried milk, proved most valuable as supplementary foodstuffs to keep starving people alive and helping to restore such people to above their normal state of nutrition.

Supplementary foodstuffs for distribution for famine relief included: —

*Edible oil (free from A.I.D.) 6.817 drums of 46 gallons each.*
Milk products were received from:—

(a) A.I.D. (free) 2,732 tons, of which some 140 tons remained in hand at the end of the year.

(b) Kenya Co-operative Creameries (purchased):

(i) Dried skimmed milk powder ... ... ... 60 tons.
(ii) Sweetened condensed milk ... ... ... 25 tons (approx.).

Meat products purchased from Kenya Veterinary Department:—

(i) Meat powder ... ... ... ... ... ... ... ... ... ... 307 tons.
(ii) Dried salted meat (or charqui) and biltong ... ... 49 tons.

These are the totals received since mid-1961 to October, 1962, but during 1962 weekly purchases were made of 120 tons meat powder and 30,000 lb. each of charqui and biltong, all of which were despatched for famine relief under arrangements with Headquarters, E.A. Command, which throughout the famine operations has given the most invaluable assistance. Both milk and meat products were first bulked at 37 Supply Depot, R.A.S.C., Kahawa, after which supplies were despatched as instructed by the Executive Officer (Food Shortage). From August onwards the balance of the final cargo of A.I.D. milk powder was stored near Konza Railway Station by M. D. Puri and Sons Ltd., who then despatched it as instructed and this was still being done at the end of the year, when some 200 tons remained in stock. A gift of 153,600 tons of Southern Rhodesian corned beef was sent to Kajiado District.

Ghee.—5,250 36-lb. tins were purchased from Nyanza Marketing Board at Sh. 80 per tin and all was distributed.

Dried Fish.—Small quantities of dried fish from Uganda were purchased and issued, pending the development of the local fisheries at the Turkana famine relief camp on Ferguson’s Gulf at Lake Rudolf. Here the District Commissioner is now promoting, with financial assistance from the Famine Relief Appeal Fund and the Disaster Fund of the Ministry of Agriculture, an industry which should be of the greatest assistance to the Turkana and others in the Colony, both from the nutritional and marketing aspects.

Miscellaneous.—Besides certain smaller gift items of food distributed for famine relief, a quantity of foodstuffs was gratefully received from the World Council of Churches (in U.S.A.) and other bodies.

The Kenya Farmers’ Association, as agents for the Maize Marketing Board, efficiently arranged the handling of these goods at Mombasa and for their forward despatch from the port as requested.

Organization and Costs of Famine Relief

The total expenditure on the 1961/62 famine and flood relief measures was nearly £5½ million, made up as mentioned in the Foreword to this Report.

This tremendous figure does not include the cost of services provided by the Railways and Harbours Administration and the Maize Marketing Board at concessionary rates. The famine and flood relief programme was one of the biggest undertakings by the Kenya Government in the years 1961/62, being carried out almost in its entirety by the staff of existing Government Ministries, and especially by officers of the Provincial Administration, the Ministry of Health and the Ministry of Social Services, with a considerable amount of volunteer assistance, and the invaluable support of the Armed Forces.

Of the £243,000 received from private sources, some £185,000 came from the Famine Relief Appeal Fund (set up last year when the National Food Relief Committee was inaugurated, under the chairmanship of Mr. Humphrey Slade), £28,000 from the Forces Famine Appeal Fund, £15,000 from the Oxford Committee for Famine Relief for drugs and medicines, while some £15,000 worth of gifts in kind was received.

Assistance from the A.I.D. totalled £3,206,000, made up of £2,445,000 worth of maize, £499,000 worth of milk powder and £262,000 worth of edible oil.

Financial assistance from the British Government amounted to £775,000. The largest proportion of this sum was used for famine relief purchases and distribution. Expenditure by Her Majesty’s Forces totalled £270,00 and expenditure voted by the Kenya Government £31,500.
The whole operation has shown the tremendous strength and flexibility of Government services in Kenya and demonstrates clearly the advantages to be derived from our present organizational and administrative arrangements. It is especially noteworthy that the large complex, expensive and very successful programme, was carried out with only a handful of specially-engaged temporary staff. In fact the total expenditure on the salaries of temporary officers amounted to only £3,200.

**Voluntary Help**

Voluntary organizations who have assisted in the administration of famine relief in the field and to whom are due Government’s greatest appreciation, included:—

(a) The British Red Cross Society (Kenya Branch) in Machakos, Kajiado and Kwale Districts.

(b) Christian Council of Kenya, in Kajiado and Turkana.

(c) Catholic Mission, in Turkana.

(d) Salvation Army, in Machakos and Turkana.

(e) Two young university students, Messrs. Savory and McNab, gave invaluable assistance in Kajiado District during the year.

(f) Several organizations very kindly loaned their transport for distribution of foodstuffs in certain districts, e.g. British Red Cross in Machakos, Kajiado and Kwale; United States Information Service in Kajiado; Ministry of Works in Kajiado and Kitui; Desert Locust Control in Kajiado.

*Staff.—* Besides the Government personnel in districts and those of voluntary organizations already mentioned, Mrs. Meadows was engaged from January–September on famine relief duties in the Ngong area of Kajiado District, and Mrs. Munro, wife of the Community Development Officer, Kwale, assisted for about two months in the Ndurama hinterland of Kwale later in the year.

Throughout the year, Sir John B. Sinclair-Lockhart, Bt., as Executive Officer (Food Shortage) in the office of the Permanent Secretary to the Ministry of State for Constitutional Affairs and Administration, continued to assist with the co-ordination of all famine relief activities.

**Appreciation**

Appreciation must be recorded of the additional work done in the field, on famine relief, not only by the voluntary agencies and certain private individuals, but also by officers of the districts and African district councils concerned. Last, but by no means least, were the officers of the African authority, locational councils and so on, upon whom fell the burden of carefully classifying those people most in need of food and the actual issuing of rations on the ground. Due to the efforts of those concerned in the campaign, not one person, so far is known with certainty, of the many thousands in need, died of actual starvation during the year. It was of the greatest help in administering this operation to have had the co-operation of all District Commissioners in keeping their demands down to a minimum when, from September on, the free American maize issues had come to an end, and Government had to rely on locally-purchased maize.

A circular (Appendix V) was issued by Government to all District Commissioners on 1st August setting out the principles on which famine relief was to be issued and these instructions were followed most satisfactorily by officers in the field.

Detailed reports from District Commissioners concerned with famine relief in each of the six Provinces of Kenya are supplied in Chapter Three.
CHAPTER TWO
KENYA WEATHER IN 1962

The year 1962 in Kenya did not produce anything approaching the dramatic extremes of weather experienced during the preceding year. Heavy rain did persist in many areas until mid-January, thus shortening considerably the dry season which is normally experienced at this time of the year. The ensuing March to May rains, although not unusually heavy, were sufficient to cause considerable flooding in some areas, because the soil still contained much of the excess moisture from the October-January wet season and was, therefore, unable to absorb this new supply. However, this flooding was short-lived—unlike that caused by the swollen lakes, which persisted (on a limited area near the shores) until the end of the year.

The other extreme—drought—made its appearance during the year. The worst hit area was that comprising Taita District and the inland parts of Kilifi and Kwale Districts. Here only very scattered and light showers were experienced from April through to early November. The April/May rains failed almost completely, and even the ensuing months were drier than normal. Some heavier showers fell in this area during the second half of November and again towards the end of December.

Another very dry area was Turkana where, except during a three-week period in May, very little rainfall was recorded throughout the year. In order to give a more complete picture, the weather experienced in each Province during the year will be examined in detail.

Northern
Firstly, in the Northern Province, January and February were generally hot, dry and hazy, although Isiolo recorded a few showers at the beginning of January. Some heavy storms occurred during the third week of March in all areas except the extreme north-east and north-west. In April, too, there was fairly general rainfall in the Province, but Turkana remained almost dry. During the first three weeks of May, Turkana and the north-east recorded some heavy falls, but the south and south-east of the Province were very dry. Except for showers in the Maralal area, the period from June to September was very dry. October brought a slight increase in showers, but significant falls were recorded only along the central part of the Ethiopian border and around Isiolo. During November, average rainfall totals were recorded in the south-east of the Province, and amounts varying between 50 per cent and 90 per cent of average in other areas. December was dry again in most areas, but Isiolo recorded the unusually large total of eight inches. Moyale, in the north, also received some useful showers.

Coast
In the Coast Province, January was dry north of Malindi, but in the south many rainfall totals were well above average. February was reported as dry, with strong north-east winds, although some showers fell in Taita District. During March, Lamu continued to be dry, but there was good rainfall in other areas, with some heavy showers during the third week of the month. April was unusually dry, with less than one inch of rain inland and large deficiencies on the coast. Coastal showers during May were almost up to average, but Taita and the inland parts of Kilifi and Kwale Districts were extremely dry, recording only 10 to 20 per cent of the average rainfall for the month. Through June, July and August coastal showers were only slightly below average, but very dry conditions persisted generally inland. On 20th August a severe thunderstorm, accompanied by torrential rain and hail, burst over Wesu (Taita) and produced over five inches of rain in a little more than an hour, but this storm was relatively isolated, and thereafter very dry weather continued until the end of November, although some scattered showers and thunderstorms developed over inland areas during the second half of November. Showers and thunderstorms at the beginning and end of December broke the drought in many parts of the Province.

Southern
In the Southern Province, January commenced with rain in all areas until about the 11th, with some heavy falls in Narok District. Then generally dry conditions prevailed until the second week of April, although there were some showers in the north towards the end of
March. Showers and thunderstorms occurred in all areas during the last three weeks of April, although rainfall totals were below average in eastern Kajiado District. The rainfall during May was very patchy, Narok, Kajiado and Machakos recording above-average amounts, while Ngong and Kitui had large deficiencies. The seasonal dry weather of June was broken by local storms in the Kajiado-Ngong-Narok area about the middle of the month. July, August and September were dry, except for a few showers in the north. The “short rains” began about 12th October and most places recorded good falls until the end of the month. During November the rain in Machakos and Kajiado Districts was well below normal, but up to average elsewhere. December commenced very dry, but some good showers during the last week brought rainfall totals up to the average for the month.

Central and Nairobi

In the Central Province and Nairobi District there was heavy rain until about 11th January, when more seasonal dry conditions gradually took over and persisted until mid-March. There was a promising start to the rains in the third week of March which was not maintained, and most rainfall totals for the month were well below average. April started hot and dry, but after the first week showers and thunderstorms redressed the balance in most areas. Widespread storms continued during the first three weeks of May and rainfall amounts for this month were generally well above average. Some mid-month storms in the Nairobi District provided the only unusual feature during June, while July was dry in most areas.

Shower activity was above average during August, although Nanyuki and Meru Districts remained comparatively dry. During September there were some showers on high ground, but the plains were dry. The “short rains” started about 12th October, rainfall totals for the month being mostly above average, although some deficiencies were noted around Mount Kenya. The first half of November was dry, but fairly widespread rain fell later in the month. December was also dry at first, but some heavy falls during the last week brought rainfall totals almost up to average in most places.

Rift Valley

In the Rift Valley Province, there were unusually widespread showers during the first half of January, and rainfall totals for the month were from two to four times the normal average. Seasonal dry weather prevailed from mid-January to mid-March, with showers developing in all areas during the second half of March. Drier conditions returned again during the first week of April, but from then until the end of June showers and thunderstorms developed most afternoons and rainfall totals were generally close to average.

Showers decreased over the Rift Valley during July but were well up to average in north-western areas. Rainfall during August was about average, except in Laikipia, where deficiencies were noted. September brought frequent showers and thunderstorms to all areas; with the normal seasonal decrease becoming evident during October, especially in Uasin Gishu where the rains ended a little earlier than usual. Scattered afternoon showers continued during November, but decreased still further during December to give average or slightly below average rainfall amounts.

Nyanza

In Nyanza Province, widespread showers and thunderstorms during the first half of January produced rainfall totals for the month which were about double the previous averages. Very dry conditions prevailed from mid-January to mid-March, but from mid-March until the end of October showers and thunderstorms developed most afternoons and rainfall totals during this period were well up to average or slightly above. April brought frequent thunderstorms to western areas, with more scattered storms in the east. During May several places recorded totals of about 15 inches.

Rainfall during June, July and August was very close to average, but storms became frequent and widespread during September and October and there were many reports of hail damaging crops in the hilly areas. During November there was a marked decrease in rain in southern areas, but storms continued in the north and some heavy falls occurred during the last week of the month. Afternoon thunderstorms persisted in the east and north during December and increased in intensity during the last week of the month; the seasonal scattered showers were experienced in central and southern areas during the month.
CHAPTER THREE

PROVINCIAL AND DISTRICT REPORTS

The following reports from District Commissioners in famine-affected areas review the work done on famine relief during 1962:

COAST PROVINCE

Kwale

It is first necessary to refer to 1961, for in the hinterland of Kwale District the “long rains” of 1961, which should have fallen in April, May and June failed and famine relief on a limited scale began in July, 1961.

Unseasonal rain began to fall in July, 1961, and during the month extensive plantings took place to make good the loss of the “long rains” crops, but only a small percentage of these plantings were harvested, owing to waterlogging of the ground during the very heavy rain of October and November, 1961.

Thus at the beginning of 1962 many families had no food and others only a very small reserve, much of which had to be kept for seed. It was, however, possible at this time to cut down relief to a much lower level.

All hopes now rested in the “long rains” of 1962 and these began well in March and extensive plantings of maize were made. These plantings grew well and flourished in the well distributed rain of April, but May and June proved disastrous. From early May the rain ceased and strong, dessicating south winds under a brilliant sun rapidly withered the well-grown maize. By the end of June it became clear that once again the crop had failed throughout the hinterland of the Waduruma.

The resulting situation was far more serious than anything which had gone before and a complete re-appraisal was made of famine relief. The relief given in 1961 was done through the chiefs at various distribution centres assisted by agricultural instructors, though supposed to be limited to those without any means of support, it had tended to be more liberal and to be given to those who came out to work for it.

When it became obvious that the whole countryside was entering a second season of famine, it was clear that the numbers involved would be infinitely greater and far more careful selection would be needed. From 17th to 20th July the District Commissioner held a baraza in every Duruma location at which he stressed the following points:

(a) That relief would only be given to those who could not otherwise support themselves. All owners of stock, salary earners, etc., would in no circumstances receive relief for themselves or their families as they had the wherewithal with which to purchase food.

(b) Able-bodied young persons should, as far as possible, resort to the traditional system of working in the Digo areas for cassava and other foods.

(c) The number of food distribution centres was increased and at each a committee set up to advise on who could earn relief.

(d) Strict orders were given for every male to comply with the A.D.C. by-law against famine and to prepare immediately half an acre of ridged land in which to plant cassava.

An appeal for assistance from the Red Cross produced a Field Officer immediately in the admirable person of Miss R. Faulkner, while at the same time Government authorized the engagement of Mrs. Munro, a trained nurse, to work for two months with the famine relief team led by Mr. Colin Munro, the Community Development Officer.

At the end of August, Mr. T. Neil, C.M.G., Permanent Secretary to the Minister of State for Constitutional Affairs and Administration, paid a two-day visit to the worst hit areas and gave invaluable assistance to our many requests, including a grant of £2,000 for the purchase of seed for those areas which had none left.

In mid-September, Miss S. Meadows, a Red Cross Field Officer, flown out from England, replaced Miss R. Faulkner.

10
By the end of November, Mr. Munro and Miss Meadows completed the issue of famine relief cards at all distribution centres in place of the old lists and with their personal attendance every effort was made to keep the numbers down to a minimum and to ensure that those who could, sought their own food.

The very dry weather, apart from three days of rain in August, continued throughout the rest of the year and water supplies in many parts of the hinterland have dried up and the consequent shift of populations in search of water has increased the difficulties of relief work.

The area has never been an easy one in which to carry out relief work for the following reasons:

(a) The size of the area, which is over 2,000 square miles, with a population widely spread in scattered homesteads and not living in villages.

(b) The nature of this very primitive tribe who have no tradition of mutual help. The unbelievable individual selfishness has shocked all those working amongst them. It is by no means unusual for the male of the family to fill his stomach on relief foods, particularly the dried milk, and to leave the children short.

(c) As a result of their inherent characteristics, it has been necessary the whole time to battle against the attitude of the tribe that every one of them, including wealthy owners, should be given free issues of food. In some areas this was fostered by petty politicians, one of whom, together with two of his minions, were jailed for forcibly taking over relief distribution at one centre.

(d) A reluctance by certain chiefs and many headmen to incur any measure of unpopularity by disclosing the wealth of their friends in terms of stock.

The position by the end of the first week of November was very serious, in that the "short rains" had not yet broken and there was no possibility, therefore, of cutting down on relief before late February, 1963. Indeed, when the rains do break in 1963, many hundreds more who have been living away from their homes will return to cultivate and will have to be fed.

There are many lessons to be learnt from this famine in Kwale, among which are the following:

(a) The undesirability of opening up large tracts of dry bush land by the installation of bore-holes and dams in which to allow a primitive and backward people to disperse as they will; the opening of new areas by the provision of water must be accompanied by both grazing and agricultural control.

(b) As reported by the Permanent Secretary, an all-out campaign must be made to improve Waduruma basic agriculture. They must be persuaded to till and not scratch the soil and to plant and maintain famine insurance crops such as cassava. Their total reliance on maize planted in untilled soil can only lead to recurring famine in such marginal areas. Very compelling measures will be needed.

(c) There is great wealth in the form of stock in the hands of perhaps 30 per cent of the population, but since no social conscience exists, the wealthy have never in any way at all helped the "have-nots". Those who do not own stock live in country quite unsuitable for cultivation in the hope that through the marriage of a daughter they will ultimately acquire stock.

To conclude, I would like to pay a very warm tribute to Mr. C. M. Munro, the Community Development Officer who has for many months carried the very heavy burden of organizing and supervising relief work among a people who have shown no token of thanks. Sincere tribute is also due to Mrs. Munro, Miss Faulkner and Miss Meadows for their very hard work in unpleasant and difficult field conditions. The greatest tribute which I can pay this team is to record that no deaths directly attributable to famine have been reported and without their devoted efforts there would have been many hundreds.

The famine is not finished and has still to reach its absolute peak at the time of writing, but it is confidently expected that by the combined efforts of many, including officers in Central Government in Nairobi who have readily responded to our demands, the people will be safely carried through. Finally, I should like to place on record that without the extensive cultivation of cassava practised by the Wadigo, the burden of relief would have been many times greater.
Attached is a list of distribution figures in Kwale:

**KWALE DISTRIBUTION CENTRES FOR FAMINE RELIEF**

<table>
<thead>
<tr>
<th>SAMBURU SOUTH LOCATION</th>
<th>SAMBURU NORTH LOCATION</th>
<th>PUMA LOCATION</th>
<th>KILIBOLE LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makamini</td>
<td>Silaloni</td>
<td>Vigurungani</td>
<td>Bofu</td>
</tr>
<tr>
<td>Kibauni</td>
<td>Maji ya Chumvi</td>
<td>Busa</td>
<td>Mtaa</td>
</tr>
<tr>
<td>Kinangoni</td>
<td>Taru</td>
<td>Mazola</td>
<td>Kikomani</td>
</tr>
<tr>
<td>Munyuuni</td>
<td>Mackinnon Road</td>
<td>Kiyonzo</td>
<td></td>
</tr>
<tr>
<td>Donje</td>
<td></td>
<td>Banga</td>
<td></td>
</tr>
<tr>
<td>Samburu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MWAVUMBO LOCATION</strong></td>
<td><strong>NDAVAYA LOCATION</strong></td>
<td><strong>KINANGO LOCATION</strong></td>
<td><strong>MWERENI LOCATION</strong></td>
</tr>
<tr>
<td>Matumbi</td>
<td>Gulanzi</td>
<td>Kinango</td>
<td>Mwereni</td>
</tr>
<tr>
<td>Pemba</td>
<td>Mwandimu</td>
<td>Kibandaongo</td>
<td>Kilimangodo</td>
</tr>
<tr>
<td>Kalalani</td>
<td>Bundini</td>
<td>Lutsangani</td>
<td>Mwena</td>
</tr>
<tr>
<td>Mwabila</td>
<td></td>
<td></td>
<td>Mwangulu</td>
</tr>
<tr>
<td>Mavivirini</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LUNGA LUNGA</strong></td>
<td><strong>SHIMBA SOUTH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lunga Lunga</td>
<td>Mlayeni</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RED CROSS WORKER’S COMMENT**

After serving as a Field Officer in charge of famine relief in the Kwale District, a Red Cross worker reported:

"With the almost complete reliance of many of this tribe on the cultivation of maize, they are an easy prey to the vicissitudes of nature, their population is increasing as also are their head of cattle. The cattle owners, who form perhaps 30 per cent of the population, show none of the responsibilities of ownership as we understand them, and, overcome by the power of possession, they frequently marry women in whom they subsequently show no interest. Numbers of those without cattle hope they may acquire them through the marriage of one or more daughters; and, it is perhaps for this reason that they continue to live in areas unsuitable for cultivation.

"Tembo drinking is on the increase and there is a feeling among some of the more educated that cultivation is suffering as a result; the women frequently go in search of this liquor while their husbands remain at home idle.

"These and other factors contribute to make the area a particularly vulnerable one and one which is difficult to help on a short-term basis; it would be all too easy to continue feeding the population over a very long period of time and this is not the answer."

**Kilifi**

Failure of the “long rains”, following previous flood and famine, led to famine conditions in the coastal hinterland areas of Kilifi, comprising Vingeni, Ganze, Sokoke, part of Kauma, and the whole of Bamba Location (i.e. the Northern Division), and less so in Mariakani and Kayafungo Locations of Southern Division. These latter areas, being richer, were not on actual relief until November.

The initial issue of 300 bags of maize in the Northern Division in June had to be raised to over 800, the numbers in need of food reaching between 2,500 and 3,000 in July and rising considerably in November, after which, with some rainfall, it fell off to about the 2,500 mark again.

Recovery, since the “long rains” were a failure and the “short rains” extremely late, has been moderate, and is by no means complete at the time of writing. It is also to be remembered that some hinterland areas such as Bamba are liable in normal times to suffer partial crop failure, if not worse, in three out of five years. It has been most heartening, however, to see that dams made as famine relief works in past years have supplied water almost without failure until just before the delayed “short rains” in late November/December, and some carried water right through from the recent floods. Life would have been considerably harder without these supplies, particularly for stock."
It is interesting to note also that stock, grazing on the remains of lush growth produced by the floods, have remained in very good condition throughout, and although the lack of normal "long rains" reduced the milk supply considerably, the herds have not suffered.

Food issues have been made according to the recommended scale with supplements of vitaminized edible oil, milk powder and dried meat products. There have been incessant demands that the ration of 9 lb. weekly be increased to as much as 21 lb., but there is no reason to think that the recommended scale is inadequate. The essential preliminary of work on dams or roads has been widely accepted by all as reasonable in exchange for relief foods, but there has been a strong tendency for women to take on more than their fair share of the work, partly due to their traditional dam cleaning work before the "short rains". This has the effect, however, of concentrating relief where it is most needed, among women and children. Thin men have been a rare sight. Signs of malnutrition have only been noticeable in any numbers in the Bamba and western Kayafungo areas, and the Health Department reported, most significantly, that of some 70 cases of under- or malnourished children seen in Vitengeni, Ganze and Bamba, about three-quarters came from well-to-do families. The Medical Officer has also commented on the tendency for people to lay the blame for deficiency diseases and symptoms on witchcraft, belief in which is widespread.

Relief works have included the cleaning and enlargement of dams, repairs to dams breached in the floods, improvement of roads and the planting of bulking plots for disease-resistant cassava and dwarf sorghum. There has also been a small amount of work done on repairs to temporary buildings in schools.

The hinterland rainfall is too uncertain for regular good maize crops, and the "short rains" are usually inadequate and too short for maize, in spite of which a lot was planted in all areas in November, together with cowpeas and beans. Distribution of the very small amount of available dwarf sorghum seed (16 bags) was reduced to allow for bulking plots at locational centres, but those who received a pound or two have been well satisfied with its germination and growth. At the time of writing it is beginning to come into ear, but the extent of the crop cannot be assessed. As it should mature in eight weeks it is a very suitable "short rains" crop and it is to be hoped that if it grows successfully, the depredations of birds will not discourage its cultivation in future.

A great many cassava cuttings have been planted in all areas, with the exception of some parts on unsuitable soil. In addition bulking plots of disease-resistant cassava have been established at Ganze, Bamba and Sokoke, for future supplies of cuttings, and a lot more was distributed for "short rains" planting in Vitengeni. There can never be sufficient "insurance" plots of cassava, and there is always the inclination to ignore the future and use up all available supplies in good times. There is a general shortage of suitable maize seed and supplies, for which funds have been obtained, are not available elsewhere. This is one problem which does not lend itself to local solution.

Prospects of some harvest as a result of the very late "short rains" are moderate and will allow some reduction of relief supplies from February, 1963, onwards. It is not yet possible to say when relief can be withdrawn entirely, but it is likely to be required on some scale until late July or August, 1963.

Malindi Subdistrict

The general situation on 1st January, 1962, was that severe flooding of the Sabaki River and torrential rains had inundated extensive cultivated areas in the flood plains, washed out cultivations and isolated villages. Vast areas were still under water, roads impassable and whole communities stranded. Lakes appeared where maize once grew and the two square miles of Lake Jilore, which had not held water since 1935, was once again an impressive sight. Many riverine shambas had been irreparably lost and the Sabaki Bridge had been destroyed, thus cutting off the northern part of the subdistrict. Fortunately, the loss of life had been negligible, but the people were faced with a serious food shortage and life would have been insupportable without famine relief.

For the last three months of 1961 all relief supplies had been delivered by air drop and on 13th January the Malindi "Floodops" Headquarters finally closed down, after three and a half months of magnificent effort by all concerned, when more than 1,000,000 lb. of food had been safely delivered, thus preserving the lives of countless thousands of people in the affected areas of Malindi, Tana River, Garissa and Lamu.
Recovery

The abatement of the flood waters in the Sabaki River Basin at the turn of the year enabled a ferry to be operated for the first time since the bridge was destroyed in September, and on 12th January, food convoys began to use it and the airdrops were discontinued.

There was then some slight improvement in the food situation as a poor maize crop had been harvested and the remnants of the cash crops had been salvaged. By March, however, the situation was deteriorating as the meagre food stocks were rapidly becoming exhausted and the people in the hinterland locations were again facing starvation, but there was hope that the "long rains" would alleviate the situation.

By the end of May it was clear that the "long rains" had failed throughout the district and serious famine conditions again prevailed and 12,000 people were receiving relief by the end of June. However, unseasonal rains in June and July in all locations other than the back blocks enabled the people to reap a fair maize harvest and the situation gradually improved. Famine relief continued, but in a dimishing scale and supplies to three locations were stopped. In all, some 4,350 people were then receiving relief and by the end of October supplies to all but three locations had been stopped. Some 1,600 people continued to receive relief.

The intermittent rains, although useless for food production, had brought on the cotton crop in the Protectorate locations and an estimated 5,000 bales are expected. The cashew nut and mango crops look very promising, so at least the cash crops are doing well, but, again, food crops are in short supply.

In September, the Provincial Medical Officer carried out a survey of the nutritional state of the people in five of the six locations in the northern part of the district, and reported that although food was undoubtedly in short supply, it had obviously not reached the stage of famine conditions and that there was no evidence of anything but mild nutritional deficiencies such as might be seen anywhere else within the Coast Province.

Food Issues

For the first three months of the floods, food could only be delivered by airdrop, but as the water receded, the roads dried out and the ferry began to function supplies were delivered by lorry to chief's centres, from where the food was distributed to the needy.

With the exception of a few destitute women, posho is only issued to men for them and their families, and for a limited period to school children who were attending school, who are expected to do four hours work a day on communal projects. Much useful work was done and is still being done for the benefit of the locations such as repairing breached dams, digging out silt, rebuilding school buildings and other public buildings damaged by the floods and repairing roads.

In addition, flood damage funds provided by ALDEV provide employment for large numbers of persons who also receive a small daily ration of posho from famine relief supplies.

Drought Crops

Cassava plots have been established under the direction of the Agriculture Department at each locational centre and are all doing well. Once they are firmly established cuttings will be distributed through the locational councils to any cultivator who applies. The plant is popular and as the demand is considerable there should soon be widespread plantations throughout the district.

Attempts are also being made to encourage the cultivators to grow millet which is not so popular, but equally useful as a drought crop. Although the people have a natural predilection for maize, these should be no valid reason why millet could not in time supersede maize as a food crop, and thus transform the present precarious balance of the economy.

Every effort should be made to popularize it, overcome the natural prejudice of the people, both their eating habits and their farming methods, by experimentation with the numerous kinds of millet and propaganda through the African district and locational councils. If the crop could become the staple diet of the people of this district, and indeed the Coast, it should be true to say that famine conditions would never again occur.
SITUATION AND PROSPECTS AT END OF YEAR

The general position improved throughout the year, although food crops were always in short supply and it was not possible to discontinue famine relief altogether, although it was gradually reduced from August onwards to a point where only three locations out of a total of 11 were receiving relief.

On the other hand, the cash crops of cotton, cashew nuts and mangoes show great promise and there will soon be plenty of money about in the locations of the cotton belt. The cotton is now being harvested and therefore already the economic picture has changed.

Those locations producing cashew nuts and mangoes will be able to realize cash from them, but for the others, which grow little in the way of cash crops, the picture is not so bright.

The “short rains” failed in Kakoneni, Chakama, Madunguni and Dagamra Locations, also throughout the Coastal Strip, with the result that 3,850 people were still receiving famine relief posho at the end of December, 1962. In the above locations no crops have been harvested since 1960.

There is no possibility of stopping relief food supplies in the near future and as stocks were exhausted by the end of the year, it became necessary to draw fresh supplies.

Taita

GENERAL

The Taita District entered 1962 as it had left 1961 with the rather incongruous sight of famine relief being distributed on a large scale amid heavy rain—and ended the year in much the same way.

In common with most of Kenya, Taita had experienced a failure of the 1961 “long rains”, followed by abnormally heavy rain during the last three to four months of 1961. The drought had left a general shortage of food and the floods had made it difficult or impossible to harvest anything by December. During January and February, 1962, many of the people were dependent on relief food, and 2,900 bags of maize were distributed during January and 2,000 in February.

By the end of February it was clear that the heavy “short rains” had resulted in an above-average maize crop in the lower areas, a limited crop in the middle zones and a virtually complete failure on the hill-tops, where the maize had been waterlogged. In sum, there was enough harvest food available in the district by March to feed nearly everyone and the main problem became one of distribution, as most people had little cash left in reserve with which to buy food from their neighbours. It was, therefore, possible during April–June to run down the issue of relief food, restricting it to these people on the higher areas who had harvested nothing. In July no maize was issued.

“LONG RAINS”

However, by the middle of 1962 food was growing scarce again. The “long rains” had started adequately, but then petered out abruptly at the end of April, and from 1st May to 20th August the district received no rain at all. A promising bean crop withered rapidly and gave a meagre yield. By July the hill dwellers were reduced to the maize they had been able to buy, a few beans and such root crops as they had been able to plant in April. It was, therefore, considered necessary to reopen maize issues on a restricted scale to people in the upper zones during August and these have had to be stepped-up from month to month as food reserves have dwindled. By October the people in the lower zones had exhausted most of the maize harvested in February and famine issues spread to all areas of the district, with 1,000 bags in October and 1,500 in November.

“SHORT RAINS”

Meanwhile the failure of the “long rains” of 1962 (and even of the usual mid-year mist precipitations) has been followed by a further blow, the delayed appearance of the “short rains”. After one thunderstorm on 20th August, there were only a few light showers during September and October which were much too intermittent and badly distributed to establish a crop. Maize was planted widely at the end of September, but except on the hill tops it is stunted and much of it has withered. The continued dryness of the soil has also given little scope for quick-growing crops such as beans with which to bridge the widening chasm of hunger.
SITUATION AND PROSPECTS AT END OF YEAR

Thus the situation at the year’s end was not a happy one. The shortage of food is at least as widespread and acute as at the end of 1961, probably much more so, since the intervening year has greatly reduced the people’s reserves, not only of food, but of cash and livestock with which to purchase food from elsewhere, and also, one should add, of bodily fitness to withstand further hunger. During November, the prospect brightened considerably with the arrival of heavy and fairly widespread rain, which provided excellent planting weather in the eastern half of the district and almost adequate moisture in the western half. However, its lateness is such that much of the crop has had to be replanted in the middle and lower zones, so that the earliest it can expect to be harvested is the end of February. Therefore, large-scale famine feeding will continue to be absolutely necessary until the beginning of March, with its peak in December and the possibility of some reduction thereafter if beans and root crops can be harvested.

FOOD ISSUES

Throughout the year the principle has been followed of issuing only such amounts of food as are necessary to avert actual starvation. With the need for self-reliance in mind, there has never been any intention of undertaking the feeding of the whole population, or even a major proportion of it. Even in the peak months the famine food received has only been sufficient to make regular issues to between 20–25 per cent of the whole population; in the middle of the year only a small fraction was being fed.

In addition, every effort has been made to measure food requirements individually. As in 1961, sub-localational committees of the location councils have been used to select those most in need of food and their selections have been supervised by chiefs and officers. The main rule has been that no family may receive food issues if it has livestock, a cash income of any sort, a plot in an irrigation scheme, or any other means of feeding itself.

Of those to be fed, able-bodied adults seeking food for their families have been required to participate in public works schemes but anyone unable to work by reason of age or infirmity has received a free issue.

Maize.—As each month’s allocation has been received it is distributed between sublocations in accordance with estimates of need supplied by chiefs and correlated by the District Commissioner. As each subchief received his allocation he calculated how many people or families could be fed from it by weekly issues throughout the month. He then filled his list from the names supplied by the sub-location committee, made provision for issues to those unable to work, and arranged work for the remainder on some public project (usually making new roads and tracks).

In addition, in peak months the A.D.C. took on temporary road gangs on its gazetted roads and received an allocation of maize to issue in lieu of wages.

Milk.—Dried milk powder had been received in bulk at intervals and distributed mainly to small children and also to expectant mothers, hospital patients and T.B. domiciliary patients. A tighter control on its distribution was achieved during 1962 to ensure that it was all used on these categories.

A Health Visitor was posted to the district in May, and in the course of her clinics was able to establish a network of milk clubs throughout the district, through which over half the total milk issues are now made. The balance was issued through the District Education Officer to primary schools and through the Community Development Officer to nursery schools. There was no doubt that milk issues did much to alleviate the effects of the food shortage, especially among the small children.

Edible oil, ghee, meat and dried fish.—In the early months allocations were distributed through the road gangs, later through the Medical Department.

FAMINE RESERVE CROPS

The principal crops available as reserves during the famine have been cassava, sweet potatoes and bananas. There has been little scope for new plantings during the dry months, but now that rain is falling the Agricultural Department is bringing in supplies of cassava roots from Kwale for bulking plots in every sub-location and of banana suckers from Taveta, transport costs being met from the district’s allocation of £250 from the National Disaster Fund. The Department is also investigating improved strains of sweet potato.
In the long run the risk of food shortages in years of drought can best be overcome by general improvements in the farming practices of the district and for this reason funds have been sought under the Freedom from Hunger Campaign to finance educational tours by groups of Taita farmers to advanced agricultural districts.

**Tana River**

**General Situation on 1st January, 1962**

Famine relief continued and the morale remained high. Owing to the generous scale of distribution, there was little possibility of hardship. Fish, honey and edible roots were in abundance everywhere. The level of the water in the river fell and planting of bananas and sugar cane increased. No bananas had been seen in the Galole Market for some months.

Some 600 bags of maize were brought from Nairobi by the 24th Infantry Brigade Group Company towards the end of January. Comforts were still being supplied to all the villages. They were purchased from the Coast Province Relief Fund. The inhabitants of the district greatly appreciated the help given by the Army, Navy and the Air Force in providing transport for the supplies.

**Progress with Recovery**

"Long Rains" (1962).—Sufficient rain fell in April to enable farmers to plant their food crops throughout the district. As the annual flood held off until the end of that month, most Pokomo harvested maize and gram. Many found themselves in a dilemma; if the crop was good they would be able to subsist, but, on the other hand, they would not qualify for famine relief. After attempts to conceal their good harvests failed, they accepted the cessation of famine relief with bad grace.

Although famine relief continued in some areas, it was on a much-reduced scale. Numbers of persons receiving relief dropped from 18,000 to approximately 6,000. Locations mostly affected were Gwano, Salama and Ngao. In the case of the latter, a further investigation revealed that the harvest had been poor. They were, therefore, put back on famine relief at half rations.

The expected rise of the river did not take place and above average maize crops were harvested in the Upper Tana Locations. It was then apparent that no famine relief would be necessary in the Malalulu, Zubaki, Ndura, Kinakomba and Ndera Locations.

Three boats were occupied in the distribution of famine relief food which, in addition to maize, included milk, comforts, meat powder, cooking oils, etc.

In May, the District Commissioner inspected the harvest position in detail throughout the length of the river.

Malalulu, Zubaki and Ndura had adequate harvests, Malalulu's being the best for many years.

In Kinakomba and Gwano there were prospects of good rice crops, and banana plantations were recovering, though little work was being done to improve them. Ndera had a small surplus of maize for export, though Kinyadau claimed to be harder hit than the rest of the location. This was partly because they were in sight of Bubesa which was still receiving famine relief. Salama and Ngao Locations had adequate crops coming along, especially rice. Here again they were neglecting their bananas. Chara Location was expecting the best rice crop for some time. They were on relief until the end of June.

Quantities of maize and rice seed were being distributed.

Requests to sell maize had been agreed and traders reported quite heavy offerings all along the river. This was the complete answer to demands for famine relief. Considerable quantities were being exported to Lamu/Malindi.

Famine relief for the locations of Gwano, Salama and Ngao continued during May, with issues of maize from the stock pile at Garsen, and the distribution of the last stocks of milk, meat powder, etc. The above locations and three villages in Chara were kept on relief until 30th June. These particular locations and villages were hardest hit during the floods, and in the case of Ngao and Salama Locations lost most of their "short rains" harvest due to crops being inundated.

Famine relief virtually stopped in all locations at the end of June.
Mid-year.—The Food Assessment Team visited the district on Thursday, 23rd August. It was only possible for the members to visit Ndera and Ngao Locations. The District Commissioner managed to visit Salama Location by himself later.

The general impression obtained during the brief visits was that there were in fact no cases of starvation or real hardship in any of the areas visited. What the people did not have was the money with which to buy food from the local dukas which held sufficient stocks. Chiefs were told to advise their people to look for work. Cotton pickers would shortly be needed at the Tana Irrigation Scheme, they were advised.

However, it was felt that cases of hardship might happen here and there in the district, particularly after September, when some of the food which was then available would run out.

The District Commissioner, therefore, suggested, and the team agreed in principle, that he should be issued with famine relief food to be kept in reserve for individual deserving cases.

Food Issues and Systems

Twenty tons of American maize were received in November and issued to persons in desperate need. The District Assistant, assisted by the chief of the location concerned with an advisory committee of local people, prepared a distribution list. After scrutiny, the list was returned to the chief together with the required supply. The chief and his headmen supervised the distribution at the rate of 7 lb. per person per week.

No short-term relief work projects were introduced in the district during the year.

Attempts were made to encourage the planting of drought crops such as cassava and sweet potatoes and bananas. While some farmers managed to plant cassava and sweet potatoes on their own, some were unable to do so due to lack of suitable seed.

The District Agricultural Officer was asked to arrange and obtain seed from outside the district.

Many farmers started planting cash crops such as mangoes, citrus, coconut trees and cashew nuts, etc., with a view to safeguarding themselves against famines in the years to come.

The UNICEF provided cement and material to help the A.D.C. in a programme to provide water for the villagers. The local people provided free voluntary labour in various villages where well programmes were carried out.

The long-term Ecumenical Works Campers, under the auspices of the Christian Council of Kenya, came to the district towards the end of year to help Pokomo villagers in various self-help projects. Their first programme was to construct a double classroom for the Garsen primary School which was needed badly. Local villagers turned out in large numbers to give a helping hand.

The general situation was satisfactory. Conditions, of course, varied in different locations, but the fact remained that there was no acute food shortage in the district. There was sufficient food in the shops anywhere in the district, and no one needed to go hungry if he had the cash.

The real problem, however, is shortage of money with which to buy food. Able-bodied men have been advised to go and look for work, and some found jobs with the B.P. Shell—particularly in the Kinakomba and Ndura areas. Others were told to clean their banana shambas in order that the trees might produce more. This, however, did not solve the problem for those elderly, and disabled persons unable to work and who had no near relatives to help them.

Movement of maize from the district was strictly controlled. Very little maize was permitted to go outside the district.

The river had not flooded and indications were that it might not do so again in the year. This meant that people on the lower ground along the river would not be able to plant food during the "short rains". They did not plant with the few showers which fell in November because they feared that their crops might be destroyed by flood any moment.

Most people on the higher ground along the river planted maize and some food crops and, if showers continued, it was hoped that some food would be harvested in about February, 1963. Otherwise the position was bound to get worse.
Kajiado

SOUTHERN PROVINCE

GENERAL

Kajiado District, 8,000 square miles in area with a population of 66,000, is mainly dry, with an average annual rainfall of 17 to 20 inches, except at Ngong and Loitokitok, which normally have 30 to 40 inches. Agriculture is practised in these two areas, but the remainder of the district supports cattle on which the Masai depend entirely for food and the other necessities of life.

In the period 1959–61, rainfall was most irregular and the little pasture left in February, 1961, was destroyed by an infestation of "army worm", resulting in a steady increase in the number of cattle deaths, until by the end of the year the Masai had lost 500,000 head of cattle, or 5/7ths of their herds. Famine relief food was being widely distributed by October, 1961, when floods hit the district and for the last quarter of the year, distribution was effected only with the help of the Services, especially the R.A.F.

The year 1962 started with another burst of rain which again disrupted communications and saw the return of the Army helicopters and Beaver aircraft. Some 40,000 people were receiving relief in one form or another. A dry period in February and March saw the end of a virtual door-to-door system of distribution and the establishment of food centres. The issue of maize meal was reduced from 36 lb. per adult per month to 20 lb. per person and the amount of dried milk and vitamin oil was increased. Rain again was widespread in April and May, but did not disrupt road communications. Unemployment relief schemes on repair work were started and proved so popular that £4,000 granted for this purpose was exhausted by August, when over 1,000 Masai men were employed. By this time the large sheets of surface water which covered the district had begun to dry out. The Ngong area was off "relief" by the end of July. In September a further reorganization of the system of food distribution was completed with those Masai on full rations concentrated into 11 areas, as had been done in the II Kisonko Section in January. Some 16,500 were still on full famine relief with another 3,000, whose depleted herds still awaited the calf crop, receiving milk powder.

STAFF

Early in the year the whole district staff was engaged on famine relief duties and was assisted by Mr. R. Savory, of Southern Rhodesia, Mr. and Mrs. Marks and Mr. and Mrs. Granger of the Portland Cement Company Quarry at Kibini Hill, and Mr. and Mrs. Wilcox (Christian Council of Kenya) working at Bissen.

Mrs. W. Gunn and Miss J. Stephens, Red Cross workers, travelled vast distances distributing drugs and vitamin pills. Mrs. Gunn left in May and Miss Stephens in September. Mr. A. McNab, a student waiting to enter university, worked at the Mashuru feeding centre from January to the end of July. Mrs. H. Meadows was employed till July as Executive Officer (Famine Relief) for the Ngong area, including the Kekonyukie Section. Valuable assistance, was received from the Magadi Soda Company in the Loitokitani area, from Mr. N. Watson (C.C.K.) at Senya and from C.C.K. representatives in the Kisamis area of Kekonyukie.

Near Loitokitok, Mr. Norman ole Kepari organized and then managed, on quasi-military lines but most humanely, a large "hunger boma" at Kimana. Mr. Josphat K. ole Mperre served for long hours as District Distribution Clerk at Kajiado.

FOOD ISSUES AND DISTRIBUTION

During the first 11 months of 1962 the district received a total of 7,166,000 lb. of maize meal, 565 tons of milk powder and 113,750 gallons of vitamin edible oil and sundry other foodstuffs. Supplies were received haphazardly; perhaps understandably early in the year when communications were still disrupted.

The main district distribution centres were Kajiado, Ngong, Emali (for Loitokitok), and Kibini Hill till the end of January, thereafter at Mashuru till August. Internal transport was by the Athi River–Magadi branch Railway line and four Ministry of Works lorries, one of which was returned in September. A Land-Rover loaned by Stanvac and a Gypsy loaned by Gailey and Roberts were returned during the first quarter. A Land-Rover and lorry supplied by Desert Locust Control and used in the Ngong and Kekonyukie areas were returned in September.

The numbers receiving famine relief food have decreased from an estimated 40,000 Masai (virtually the whole district) in January to 10,000 in December. During the first half of the year the qualification for assistance was less than 20 head of stock per family. This
figure was reduced in August to 10 head, but others with more and still awaiting the arrival of calves, were issued with a dried milk ration. Chiefs with local committees have decided which families needed help and which no longer required assistance, a most unpopular task. A ration card system was introduced early in the year, but with the concentration of the needy into hunger manyattas, in September, this was dropped.

In October the monthly relief ration was fixed at 20 lb. of maize meal, 9 lb. of dried milk and 3/4 gallon of edible oil per head.

Costs for the year in transport, gristing charges, etc., exceeded Sh. 210,000.

**Health and Nutrition**

In January there were 21 cases of malnutrition being treated at the Kajiado Hospital, but with a drop to only three in February, it was possible to close the emergency wards both at Kajiado and at Ngong Health Centre. General nutritional improvement continued throughout the year, although there were the odd cases of Kwashiokor in children caused by parental ignorance. The April rains brought with them a high malarial rate which was checked by a wide distribution of prophylactic pills.

The two Red Cross workers and the normal health staff worked long hours travelling in remote areas. A health visitor due to be posted to the district in September to replace Miss Stephens did not materialize. This proved unfortunate, as with the necessary reduction on the amount of famine relief food, it was essential to keep a careful watch on the standard of health, especially of children.

**Rehabilitation**

*Short Term.*—£4,000 was received in May for unemployment relief measures which took the form of sectional schemes involving repairs to water supplies (dams, furrows, etc.) and roads. The Masai were fed and paid Sh. 1/50 a day and the work attracted well over 1,000 volunteers, resulting in the rapid exhaustion of the funds. A further £2,700 was obtained from ALDEV in October and work restarted.

Encouragement has been given to stockless Masai to start gardens in suitable areas and £400 has been spent on tools and subsidized seed.

*Long Term.*—As has been noted, the Kajiado Masai have lost 70 per cent of their stock and it is known that 2,245 men now have herds of only 10 head and under, of whom 812 have none at all. Attempts were made without success to raise funds for the purchase of heifers and this proposal has now been included in the application for £220,000 made to the Freedom from Hunger Committee to finance a three-year Masai rehabilitation and development plan. The present calf crop will ease the situation for those with stock, but unless these Masai show a greater sense of tribal responsibility towards their less fortunate fellows some 10,000 Masai will need help for a further 12 months.

Meanwhile strenuous efforts are being made to awake the Masai people to the need of a greater degree of self-help. These have not, so far, proved successful. An attempt by Kajiado elders to extend the principle of clan help to the Masai of Narok who lost little stock in the drought, met with a lukewarm reception and a vague promise that the richer pastoralists of that district might consider subscribing some money to enable the Kajiado Masai to buy Narok heifers. Fundamentally, help from the more fortunate members of the tribe in both districts will not materialize for as long as they remain confident that, in the last resort, Government will not let anyone starve.

**Narok**

On 1st January, the Narok District was under water as a result of exceptional "short rains". Numbers of Masai, however, continued to feel the effects of famine conditions imposed by the severe droughts of the preceeding month which had resulted in the loss of stock and impairment of calving.

Famine relief consisting of posho and dried milk with limited quantities of vitaminized edible oil and meat powder was issued through distribution centres at Mosiro, Narasura, Maji Moto, Niagara, Iladamat and Siabey to needy persons suffering from the result of famine whose names were listed.

During the course of the year conditions worsened slightly, due to the fact that calving did not start until September/October and whilst grazing and water improved and was plentiful in the latter part of the year, the famine position was aggravated by lack of fresh milk supply and by curtailing of stock marketing due to disease.

20
Those in receipt of famine relief were collected in *bomas* at distribution centres to facilitate the control and distribution of relief supplies. During the middle months of the year approximately 1,500 persons were in receipt of famine relief, the majority being children.

In September, conditions began to improve with plentiful grass and water and the commencement of the calving season. It is anticipated that provided reasonable rain falls between now and the end of the year conditions will have returned to normal, or very nearly so, and famine relief by the end of the year should have been reduced to a very small figure. It will however probably be necessary to continue a very small distribution into the first quarter of 1963.

**Machakos**

**General Situation**

In January, 1962, the overall famine position in the Machakos District reached its worst point. Maize issues were increasing steadily through the latter end of 1961 and reached their peak in January, 1962, with an issue of over 52,000, 200-lb. bags. Thereafter the position eased somewhat until at the end of March, 1962, famine relief issues had virtually ceased.

Communications were still extremely bad owing to weather conditions, although with the easing of the rains, opportunity was given and taken, of carrying out road and bridge repairs. In this connexion sterling work was carried out by the Army, notably the Royal Army Service Corps, Royal Engineers and King's African Rifles, without whom supplies could not have reached their destinations. By March and April it became apparent that conditions were improving generally to such an extent that the services of the Army could be dispensed with and the remaining transporting of foodstuffs and repair work could be undertaken by the district's own resources.

**Progress with Recovery**

Throughout the district after flooding had subsided, long spells of sunshine and periodic showers of rain gave promise of a "bumper" harvest. This promise became fact in March, April and May when the harvest was recorded as one of the best ever. The following figures give some idea of the speed of the general recovery and of the ability of the Wakamba to "jump on the bandwagon". The areas quoted were some of the worst hit during the drought.

For the month of March, 1962, the following produce was sent for sale to Nairobi from three locations:—

- 39,800 lb. tomatoes.
- 700 tons of wattle bark.
- 662 bags of charcoal.
- 17,220 lb. of Asian-type vegetables.
- 1,100 chickens.
- 391 doz. eggs.

In addition to the foregoing, repeated requests were made by people in the high altitude areas to be allowed to export maize to the Konza and Thika Maize Marketing Board agents.

Following on this, it became apparent that the district generally was on the upgrade and still is with regard to food supplies.

**Food Issue System**

The system operated in Machakos District was quite simple. Divisional District Officers would estimate requirements of food, through chiefs, headmen and local committees and personal visits. The figures would be consolidated at district headquarters and a request for release of the food made to Nairobi. When the release was authorized a schedule of journeys would be worked out down to village and location level where a receipt for the food would be obtained. Specific issue days were notified to the populace and issues would be made to those entitled to it on the following basis:—

- 10 lb. per week for each able-bodied man.
- 7 lb. per woman and 2 lb. per child.

In return, the able-bodied men were expected to assist where possible by road repairing, etc.
ACTIVITIES OF VOLUNTARY ORGANIZATIONS

There were no special projects undertaken in this district by voluntary organizations, apart from two Red Cross workers who assisted in pinpointing the more needy of the population, and particularly children.

During the period from January to March a total of over 200 soup kitchens were operating in the district feeding over 53,000 children. posho and milk powder issues to soup kitchens were supplemented with meat powder, edible oil, dried fish and condensed milk, and issues continued until April when, owing to the exceptional harvest, they were reduced to a minimum.

Soup kitchens were organized and run by the Department of Community Development under the direction of the Community Development Officer, Mr. G. A. Farrell.

CENTRAL PROVINCE

Kiambu

The greater part of the famine relief necessary during 1962 in the Kiambu District was in the Karai Location of the Kikuyu Division and the Ndeiya Location of the Limuru Division. From April onwards, a limited amount of famine relief was also necessary in the higher parts of the Githunguri Division bordering on the forest areas.

Elsewhere in the Kikuyu and Limuru Divisions there was a very limited amount of famine relief necessary in the Dagoretti, Lari and Limuru Locations, but in these locations it was on such a small scale that it is not really worth mentioning in this Report. The small amounts of food necessary in these other locations of the Kikuyu and Limuru Divisions was provided from the existing divisional allocations.

As already pointed out, the main problem was in the Karai and Ndeiya Locations. These two areas are, even in good years, marginal for farming, and, if climatic conditions are anything but favourable, then trouble can invariably be expected. Those who have land in these two areas are for the most part settled on 12-acre plots, and they normally rely on the maize harvest for their food supplies. Owing to the failure of the "long rains" in 1961 and the excessively heavy "short rains" at the end of the year, the maize crop was virtually nonexistent in 1962, and the very heavy rains at the end of 1961 and at the beginning of 1962 virtually destroyed any subsidiary crops, such as beans and vegetables, which might otherwise have been expected. These factors caused an almost complete lack of crops in these two areas throughout the year.

In addition to these purely agricultural factors, the position in these two locations was seriously aggravated throughout the year by the large numbers of landless families still living in Emergency villages in the area, for the simple reason that they have no other place to which they can move. Some 1,100 of these families were placed on settlement schemes in the second half of the year, but some 4,000 to 5,000 families still remain in these two locations alone, and will continue to remain until such time as further settlement schemes become available. In the past, the breadwinners of these landless families have been able to find employment in Nairobi, Kiambu Settled Areas or on African pyrethrum farms in the Kiambu District, but in 1962, owing to the declining economy and the difficulties of the pyrethrum industry, these outlets were no longer available to the usual extent, and many of these landless families, as a result, were unemployed as well as landless. In the absence of any unemployment relief schemes, there was no alternative except to put them on famine relief.

In the Githunguri Division, the problem was a purely agricultural one. In the high areas bordering on the forests, the planting season is normally in July and August, and again the area is a marginal one for farming, even when climatic conditions are favourable. In 1962, because of rain failure at one time, and rain excess at another, there was an almost complete crop failure, and no food crops are likely to be available in these areas until early next year.

THE PROBLEM

In the Kikuyu and Limuru Divisions, there were, at the beginning of the year, a total of some 6,000 families receiving famine relief food. By May, 1962, this number had risen to about 7,000 families. By June, there were approximately 7,000 adults and 25,000 children on famine relief in these two divisions. From July onwards, the number slowly decreased as vigorous pruning was carried out owing to the rapid decrease in the amount of famine relief food available. By 1st November, in these two divisions, there were about 2,000 to 3,000 families still in receipt of famine relief food.
In the Githunguri Division, famine relief started in April, and between then and November there were about 4,000 people receiving food from soup kitchens in the area; about 3,000 of the total were children.

**THE PROVISION OF FOOD AND TRANSPORT**

In January and February, 1962, the district received 2,500 bags of maize a month, of which over 1,400 went to Limuru Division and over 1,000 bags to Kikuyu Division. These figures were approximately the same in March and April, with the addition, in April, of 100 bags for the Githunguri Division.

In May and June, the allocation to Kikuyu and Limuru remained approximately the same, and the allocation to Githunguri rose to 200 bags.

From July to October, the big run-down in the Kikuyu and Limuru Divisions took place. The monthly issue of bags of maize during this period dropped from 2,440 bags in June to 1,932 in July, 1,700 in August, 1,350 in September and 900 in October. The estimate for November was 450, and by the end of the year, in Kikuyu and Limuru Divisions, it is hoped that famine relief will virtually have ceased.

With regard to the Githunguri Division, they received 200 bags a month in July and August, and from then until the end of the year 150 bags. It is likely that famine relief in the Githunguri Division will have to continue at approximately the same scale during the first two to three months of next year, as the maize harvest is not expected until then.

In addition to the maize supplies referred to, there have also, of course, been substantial issues of edible oil, meat powder, bilta and milk powder.

The task of supplying and transporting this substantial amount of food from the suppliers to the field has been a substantial operation, involving the railways, Government lorries and traders' lorries. It has also, of course, involved enormous expense. The fact that all the food invariably turned up at the right place and at the right time reflects great credit on all concerned.

**THE ISSUE OF FOOD**

Two different methods were used: In the Kikuyu and Limuru Divisions, allocations were made to each family in the form of a ration of uncooked food, which was taken away and cooked at home. This food was issued once a week at a chief's office.

In the Githunguri Division, soup kitchens were successfully used, and some ten were in operation for eight months of the year. In these soup kitchens, the food was cooked by A.D.C. and volunteer staff, under the general supervision of the Government headmen, and admission was on a ticket basis.

The issue of famine relief food in all three divisions of the district caused an enormous amount of extra work to fall on the District Officers, the Districts Assistants, chiefs and headmen of the areas concerned; and in a year when they were already overworked with other duties, famine relief put a very heavy additional burden upon them. The thanks of all should be given to them for their devoted efforts throughout the year in the relief of human suffering.

**WORK DONE BY PEOPLE**

Until the end of August, in the Kikuyu and Limuru Divisions, all the able-bodied men in receipt of famine relief were required to work for their food, and a substantial amount of good work was done on roads in the areas concerned. From August onwards, work was no longer required owing to the smaller ration available for issue, and owing to the fact that census and election duties made it quite impossible for the African authority to supervise the work any longer.

In the Githunguri Division, where all famine relief was issued through soup kitchens, no work was required of the recipients.

**THE RESULT OF THE OPERATION**

There is no doubt at all that but for famine relief in parts of the Kiambu District there would have been grievous suffering from food shortage during 1962, and many people would undoubtedly have died. The issue of famine relief food did not provide a luxury food supply, but it did, at least, enable landless and workless families to keep alive and in a reasonable state of health. This was particularly true of the large numbers of children who benefited.
THE LESSON LEARNED

The most important and over-riding lesson is the need of avoiding at all costs a famine relief complex. People who have been in receipt of free famine relief for many months very easily get into a mood of lazy acceptance from which it is extremely difficult to extricate them. It has, therefore, been vitally necessary at all times to prune the numbers of people on famine relief every month, and to make absolutely certain that only those who really need it get it. The drastic reduction in famine relief supplies towards the end of the year met with astonishingly few complaints.

The other lesson learned has been the ability of the Central Government and Provincial Administration to rise to the occasion of executing the substantial amount of detailed organizational work involved in famine relief. As already pointed out, the work involved was substantial and was carried out in the field without any additional staff whatsoever. A tribute has already been paid to the District Officers, District Assistants, chiefs and headmen in this respect.

The further lesson learned has been the enormous cost of operations of this type, not only in the actual provision of the food, but also in the transporting of it to the various centres of issue.

Fort Hall

Famine relief in Fort Hall District began in January, 1962, when the effect of the destructions of the crops in October/November, 1961, was first felt. This was the time when the farmers would, under normal circumstances, have expected to harvest the crops that were destroyed.

The famine relief maize received was:

158,740 lb. in January
296,120 lb. February
410,000 lb. March
644,200 lb. April
526,710 lb. May
300,000 lb. June
101,000 lb. July
40,000 lb. August.

A fairly clear pattern is revealed by these figures. The steady rise in famine relief from January to March corresponds to the harvest season, which begins in January in the lower areas, and continues as late as March in the higher areas where the crops take much longer to mature. It was only as the crops came off the fields that the true extent of the flood damage was realized. As each successive area added its story of poor crops to the catalogue of tragedy, so the amount of famine relief rose. March, April and May represented the peak months when every location in the district was suffering from a severe food shortage, which showed itself in malnutrition. The very sharp fall in famine relief from June onwards again represents the staggered harvest in those areas fortunate enough to enjoy an intermediate crop each year. Those who had reaped in January were beginning to reap again towards the end of June and early July, and accordingly dropped off the famine relief roll. By August all areas with two crops a year had harvested their first full crop after the floods, and the worst of the problem was over.

There is, however, one further point of significance. There is a belt running adjacent to the Aberdare forest boundary which is too high, too cold and too wet to enjoy more than one crop a year. The people in these areas have not harvested anything since the floods ruined their last annual crop. Nor will they harvest again until February and March in 1963. There is a strong case for continued famine relief in these areas until they do reap a crop. The effect of the floods on these areas has, however, shown itself in another way. A vast migration from these areas has taken place, mainly to the Rift Valley, and a cursory drive through these places will reveal the acute shortage of adult manpower which has been its result. This in turn has had its effect in very little planting of food crops for their next full season. In consequence the harvest next February and March will again be inadequate, should any disillusioned wanderers return from the Rift Valley. The manpower is urgently needed to develop a very high potential area, but food shortage has driven it away in search of work or areas with a quicker return. This belt, therefore, may not fully recover from the effects of 1961's floods before 1964 or 1965.
The famine relief which has been received has been of inestimable value in staving off disaster for the very small landowner and landless. The small farmer, through the loss of his meagre subsistence crop, would certainly have starved but for the famine relief food he received. Similarly, the landless were in dire straits as there was no surplus maize to be worked for or begged from relatives. By and large, therefore, it was the village dweller who received most assistance, whereas the larger landowner had other reserves on which to call, such as for instance his coffee proceeds, the sale of wattle trees as *kuni* or building poles, or the output of dairy cattle. The small man, however, had not the acreage to diversify his agriculture sufficiently to withstand a tragedy in any one sphere, and he it was who was "kept" most by the famine relief distributed.

**Nyeri**

**GENERAL**

Taking the district as a whole, there was comparatively little need for famine relief in 1962. However, in the Lower Muhito Location, two sub-locations of Gethi Location and one sub-location of Gikondi Location, which are situated in the lowest areas of the district bordering on Fort Hall and Embu, there was a crop failure following on the unprecedented "short rains".

In February, it was decided to start three Special Settlement Schemes for landless persons in the district in the Mount Kenya Forest Reserve. The original intention was to settle 750 landless persons and to date just under 500 families have been settled. As all three schemes were in the forest reserve and entailed the breaking of new land, it was decided that free foodstuffs and planting materials would have to be issued to the settlers, most of whom were to all intents and purposes penniless. It was intended that relief should be given until such time as the settlers could produce a crop for themselves. It was hoped that it would be possible to cease issuing in September/October. However, two of the schemes have had continued assistance recommended by the Agricultural and Medical Departments. This has become necessary owing to late planting and game damage resulting in a nearly complete crop failure. The third scheme has had excellent crops and little game damage and it was possible to cease issuing foodstuffs in August.

**MEDICAL**

Throughout the period, investigations by both the Agricultural and Medical Departments have been carried out, following requests for famine relief. The areas concerned have been Rugiru Location, Aguthi Location and the upper part of Othaya Division. In each case, it was considered that there was no justification for the issue of famine relief to the population in general. However, the investigations did reveal, particularly in Aguthi Location, a mainly social problem of two groups, which can be described as the handicapped and deprived. The former were found to be in reasonable health and showed little evidence of malnutrition, but had been put forward by the local populace as in need of assistance which was not forthcoming from the community. The deprived group were in rather more serious condition and were in general landless with no near relations capable of providing support. However, although it was necessary during August to issue relief to a very restricted number of persons in this group, at no time did general famine conditions prevail.

I would like to quote from a report made by the Medical Officer of Health on this subject:

"I have no doubt that if one looks hard enough and long enough, hundreds of people in this condition would be found in the district. It is unnecessary to study the social and economic reasons for this state of affairs, but it is important that Government should realize that such a state exists and should make a firm statement who is responsible for the care of these people. It would appear to me that responsibility should be borne by the local people, e.g. the locational council and not the Central Government. But no matter who should bear the burden it is a matter of urgency that something should be done and that the junior echelons of the Provincial Administration should know their responsibility in this context and be no longer harassed by politicians whose party is a constituent part of the Government."

The Permanent Secretary provided much-needed guidance in this matter, although it is doubtful whether the position is understood by the aspiring politician, anxious to secure votes.
AGRICULTURE

With the exception of the lower parts of South Tetu Division, crops have been reasonable and there has been no need for famine relief. The district is fortunate in having a wide variety of cash crops, bringing money to the farmer, which has enabled large numbers of people to purchase food when their own reserves became exhausted. Without these cash crops there might well have been a need to extend the area in which famine relief was supplied.

The introduction of the Special Settlement Schemes and schemes in the Scheduled Areas will assist in preventing famine conditions in the future, but it is felt that the lower parts of South Tetu Division will always lead a precarious existence until the standard of agriculture is raised and cash crops are introduced on a larger scale. With this end in view, the Agricultural Department have introduced pineapples into the area and a start has been made on a sisal nursery with a view to popularizing this crop. Unfortunately, during the floods of 1961, the rice fields in the area were completely destroyed and the scheme has had to be written off.

RIFT VALLEY PROVINCE

Baringo

At the beginning of 1962 food was generally in short supply. Crops had been ruined by floods and the one encouragement was the thought of plentiful grass. In January, 1,730 people were receiving famine relief.

The year 1962 has been satisfactory for rainfall and crops have been good. It was found possible progressively to reduce issues until by the end of August there was no general issue. The East Pokot Locations were first deleted, because it was suspected that maize was being used to make beer. Of course, being pastoralists this was no great hardship, since grass became plentiful. Next to be “axed” were the South Baringo areas, which had been getting a small issue. This happened in June, by which time most of the district had begun to recover. So much so that some of the leading personalities in the district said privately that the Tugen had never had it so good.

A District Officer then conducted a short inquiry into the need for further relief and recommended that famine relief be halved in July and halved again in August, after which month general issues ceased. This was naturally unpopular, but a small stock of maize was kept for issue on an individual basis to people in need.

FOOD ISSUES AND SYSTEMS

Maize, meat powder, milk and edible oils were issued. The Community Development Officer being in charge of the operation. Food was transported by hired lorries to various centres in needy locations. Chiefs with a committee of elders chose needy people.

Numbers receiving relief were as follows:

<table>
<thead>
<tr>
<th>Month</th>
<th>Relief</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>1,730</td>
</tr>
<tr>
<td>February</td>
<td>1,680</td>
</tr>
<tr>
<td>March</td>
<td>1,680</td>
</tr>
<tr>
<td>April</td>
<td>1,670</td>
</tr>
<tr>
<td>May</td>
<td>1,520</td>
</tr>
<tr>
<td>June</td>
<td>1,195</td>
</tr>
<tr>
<td>July</td>
<td>640</td>
</tr>
<tr>
<td>August</td>
<td>360</td>
</tr>
</tbody>
</table>

Those able-bodied people who received assistance were required to work on community projects which included the repair of minor roads and tracks damaged in floods and rehabilitation of eroded areas. The work was not arduous and, therefore, not unpopular. Certainly a lot of repair work was accomplished and some new tracks were cut.

DROUGHT CROPS

Despite intensive propaganda cassava planting is still unpopular. Increased planting on the hills has taken place, but in the lower areas none has been done. However, in a mainly pastoral area like Baringo small stock may well be the equivalent of drought crops. They can be eaten or sold for food. In recent months there has been a noticeable increase in small stock.
Turkana child, suffering from months of short rations, receiving an issue of milk.

These children are the same age—one has been fed a normal diet, the other (left) is suffering from severe malnutrition.

Turkana children, near Lake Rudolf, drinking their milk issue.

A healthy looking Kisii child, fed on sour milk at a ghee factory.
Turkana making nets by the shores of Lake Rudolf. Fishing is a new industry on the Lake.

Fish being dried on the shores of Lake Rudolf, near Ferguson's Gulf.
Turkana repairing nets for Lake Rudolf fishermen. Fish is now an important supplementary diet in the area.

Turkana netting fish in Ferguson's Gulf, Lake Rudolf.
Duruma children of Kwale district with boxes of dried milk powder from the U.S.A.

A view of the new Mariakani dried milk plant, erected with funds from UNICEF
Recovery of drought-stricken land in Machakos was rapid during 1962. Here is a fine stand of wheat.

Banana trees were destroyed in large numbers when the Tana River flooded in 1961, but new trees were brought from Tanganyika and are now well established.
Wakamba women threshing and winnowing beans after a good crop

Rice, sugar and bananas growing well on land that has recovered from the damage
This new bridge was opened in 1962 over the Nzoia River in Nyanza, to replace the one washed away by the floods.

While the damaged bridge over the Tana at Garissa is being repaired, a pontoon ferry built by the Royal Engineers copes with light traffic.
During the drought in Machakos district, sheep and goats had little or no grazing.

The same conditions applied in the Kajiado district.
Recovery of barren land was remarkable throughout most of Southern Province during 1962. Pictures (above and below) show healthy stock in Wakamba and Masai pastures.
Young Masai near Loitoktok uses a panga to dig up soil that has never before been cultivated.

Agricultural instructor teaches Masai how to prepare land for planting out coffee trees.
Maize, a free gift from the United States, being unloaded in Mombasa prior to distribution to famine areas.

Officials from Nairobi visit Turkana in a relief camp near Lake Rudolf to study famine situation.
“......GIVE US THIS DAY OUR DAILY BREAD”

—African children in orphanage
Prospects at the Year End

The food crop situation above 5,000 feet is about average, except east of Molo River where it is below, due, largely to idle people who planted too late. On the hills food may or may not last till May/June, or a month or two either way. Probably maize in Londiani-Lembu-Naivasha is good, which means a lot of it will filter into Baringo.

General

The need for famine relief declined during 1962. There were undeniable signs that a goodly number of people were assuming a “pauper mentality” and becoming improvident either by failing to plant at all or planting too late. Possibly chiefs and elders became infected too, and were not as selective as might have been desirable in choosing the needy. Should the unfortunate necessity for famine relief recur, I feel attention would need to be given to the following points:—

(a) Stricter investigation into the background of the “needy”.
(b) Stricter check on transport of foodstuffs and, indeed, on general storekeeping aspect.
(c) Better storage facilities for foodstuffs, some of which deteriorated because it was stored too long.

The “poor will always be with us” and in any rural area these are always present and need assistance. Central Government’s “Relief of Distress” Vote does not always penetrate into the field and I see no reason why local authorities could not set aside money annually to cope with this problem.

Nyanza Province

Kericho

The only part of Kericho District which has been the subject of famine relief is that of the lower areas of Bomet Division, in the south of the district. As a result of the very prolonged drought and complete failure of crops and the shortage of grazing up to August, 1961, followed by torrential rains which waterlogged the group so that crops could not be planted, all surplus food stocks had been exhausted by the end of 1961 and in the middle of January, 1962, famine relief had to be given to some 2,000 old men, women and children at the rate of ½ lb. of maize per day.

The rains in the affected area eased off in February, sufficiently to permit the planting of crops, and continued very satisfactorily with the result that bean crops harvested in June and July and latterly maize crops, have been the heaviest for very many years. Grazing also has been excellent. In fact, the situation improved in such a spectacular manner that it was possible to withdraw all issues of free maize at the end of June. During the first six months of the year a total of just over 10,000 bags of maize had been issued free as famine relief.

Famine relief consisted solely of the issue of maize, and this was undertaken through the local authority. Chiefs, in consultation with local elders, selected those whom they considered to be eligible for famine relief and this was checked by the Divisional District Officer who was responsible for issuing quotas of maize to each location.

As famine relief was only issued to old men, women and children, it was not possible to introduce any relief work projects.

The Agricultural Department have used their experimental centre at Kabosson, in the centre of the affected area, to produce planting materials of such famine crops as sweet potatoes and cassava, which have been issued free to farmers who have wanted them. The Department has also made available, and encouraged the planting of, early pearl and Taboran maize.

Certain substantial donations were made by tea companies and other leading commercial concerns in the district to the Central Famine Relief Fund. In addition, the Kipsigis African District Council launched its own appeal, which realized the sum of Sh. 11,587/14. The Missions, too, co-operated very closely with the Administration in their activities.

In November, 1962, Mr. Betts, of the Oxford Committee, visited the area, and recommended to his principals that the sum of £3,000 be made available in equal instalments over a period of three years to improve water supplies by way of dams in the affected areas.

There is now no shortage of food anywhere in the district and the land in the affected areas is in better heart than it has been for a very long time. The current “short rains” have been satisfactory and, provided the next “long rains” are equally satisfactory, there should be no reason for the issue of more famine relief food.
Central Nyanza

Unlike many other parts of Kenya, floods in Central Nyanza did not occur until the end of November. Then, in a single night, Sunday, 16th November, an average of three inches of rain fell over the greater part of the Nyando and Nzoia River catchment areas. This, added to an already saturated countryside, resulted in the rivers rising to unprecedented levels and the inundation of hundreds of square miles of flat alluvial plain lying in the Bunyala and Busonga Locations at the mouth of the Nzoia River, and the West and East Kano Locations at the mouth of the Nyando.

The people of Bunyala and Busonga were better equipped to deal with this emergency themselves, for not only are they used to periodical flash floods, but they are also based largely on a fishing economy and boats are plentiful.

On the Kano Plains on the other hand, the problem, once away from the fishing boats on the coastline, was acute. The people are not water minded and the difficulty was to get at them in the flooded ten-mile belt that lay between the main Nairobi road and the lake. The road itself was soon out of commission, but not before boats had been pushed through to Ahero on the Nyando River. From the open lake a flotilla of assorted craft raised in Kisumu—tugs, boats and whalers, penetrated the dense papyrus swamps which fringe the coast, carrying food supplies and helping to rescue stranded families. With normal communications completely disrupted, the use of Army helicopters was invaluable.

Though material losses in both the major flooded areas was great, particularly the loss of standing crops and grain customarily stored in granaries at ground level, it is remarkable how small was the loss of life reported. Apart from the deaths of two children who were drowned, there was only the case one old man said to have fallen in when returning from a beer hall. Very few head of cattle were lost—the majority had been moved to traditional wet season grounds in East Kano prior to the deluge—but numerous sheep and goats were swept away. In Bunyala/Busonga little stock exists.

It was the end of the year before the floods showed any signs of receding and the district could think about drying out. Despite drought conditions earlier in the year, the total rainfall for 1961 was 50 per cent above normal. The lake level rose by nearly four feet which resulted in semi-permanent flooding of much valuable lake shore arable. Moreover the rain did not cease until mid-January and set in again in mid-March, seriously curtailing the evaporation season so that only a negligible decrease in the level of the lake resulted.

The new rainy season soon proved to be above average, some ten inches above normal, and early in May both the Nyando and the Nzoia flooded afresh damaging growing crops, but fortunately subsiding after a few days. Only one life was reported lost, a woman in Bunyala. A more serious effect of the heavy rain has been the continuing rise in the level of the lake, now some six feet above its mean average level and there seems no prospect of an early fall. The Chief Hydraulic Engineer reports that even had the Owen Falls Dam not existed, the lake level would only have been some three inches lower than it actually is. The dam sluices are controlled by international agreement, but even if they were opened to capacity no significant fall in the lake level could be expected.

The immediate problems arising from the inundations were dealt with expeditiously by the combined efforts of officers drawn from all departments and from certain voluntary bodies. Temporary reception areas were staffed, food supplied, medical services provided and everything possible done to lessen the impact of shock on those affected. Based on medical advice the staple issue to those in need is restricted to maize meal, as ample supplies of fish exist within easy reach. Quantities of other supplementary foodstuffs such as dried meat and milk have been made available through hospitals and dispensaries for the use of patients who are admitted suffering from nutritional deficiencies. The number of those receiving maize meal has risen in May to over 32,000, the able-bodied men performing a daily task in drainage or protection works in their own area in return. By the end of April, 15,000 bags of maize meal had been issued, all in the east of the district. No famine conditions exist in Bunyala/Busonga, but subsidized maize meal has been provided to help combat a thriving black market. Free or subsidized seed has been issued as required. Regular medical inspections continue.

A conscientious effort has been made to keep the political leaders concerned fully informed, notably the Hon. Oginga Odinga and Peter Okondo, as two interested indigenous bodies in the areas. A number of complaints have been received, many found to be spurious and it is gratifying that genuine complaints have been few and far between and an amicable working arrangement between the officers concerned and the people has been established.
In the long term the problems are twofold—to control the rivers responsible for the flooding and to provide for those families who are likely to be deprived of their land for an extended period by the inundations from the lake.

Four river systems are involved; in order of priority as follows:

(a) Nyando.—A Ministry of Works survey is currently taking place and £10,000 has been provided to construct containing levees. The successful completion of this task should result in large acreages at present subject to flooding becoming available for regular cultivation. Further money may be required, depending on the survey.

(b) Nzoia.—An old bund exists, but needs substantial reinforcing and repairing. £4,000 has been provided and repair work has commenced. A further survey is required.

The bulk of these funds will be utilized for the payment of hand labour which in turn will help to relieve local unemployment.

(c) Kibos.—Protection in this area is probably the most complex problem involved. Some funds are expected to be provided shortly for initial measures, but full control is likely to be very expensive and funds are not in sight.

(d) Miriu.—It is possible that a short bund would give substantial protection to the Sangu peninsula in Nyakach, but a survey would be required, and no funds have yet been sought.

N.B.—(1) The National Disaster Fund, under the supervision of the Ministry of Agriculture, has provided the means to undertake the work mentioned under subparagraphs (a), (b) and (c) above.

(2) The Alexander Gibb Report mentioned a figure of £180,000 as being needed for full flood control on the Kano Plains.

The number of families displaced from their homes by the lake shore flooding is approximately a thousand. To begin with many of them were accommodated under emergency conditions in schools and other buildings. At present some have been able to build afresh on higher clan land, many are accommodated under not very satisfactory conditions with relatives, but some have not the resources to rebuild and come of clans so impoverished by the recent calamity as not to be able to obtain family assistance. A start has been made with funds provided by the Disaster Relief Committee (Chairman, Mr. Goodbody) in providing alternative accommodation to help relieve the worst of this distress in the grounds of schools situated around the perimeter of the flooded area.

The majority of the families in question are based on a lakeside fishing economy and many would be reluctant to move far from what is the mainstay of their lives. However, some will need to be resettled elsewhere, and a preliminary investigation is being undertaken with the object of providing a settlement scheme for say, 250 families. The ideal would be to have them established before the "short rains". 1962, but, if a scheme is agreed to, it seems more likely that they will be in position by "long rains", 1963.

In conclusion, the immediate difficulties have been dealt with—unless heavy rain recurs—and the problems are those more of the long term. Famine relief will be required at the best for some months yet, in addition to the more permanent measures referred to above.

**Progress with Recovery**

Following the heavy rain which fell during May, 1962, the country began to dry out slowly from June onwards, particularly in the northern part of the Kano Plains, where a fair amount of maize and millet had been planted; the central belt had been badly affected and little planting took place in the lake shore areas. As a result of a further rise of two feet in the lake level, considerable inundation of arable land took place and it was impossible to cultivate at all. In addition to maize and millet and as a result of an intensive campaign by the Agricultural Department, and the Administration, a considerable acreage of sweet potatoes was planted, mainly along the river banks and in swampy areas. This has proved both popular and useful. The "long rains" crop was harvested in late July and August and a survey carried out at this time proved it to be patchy in most parts of West Kano Location, but more uniform in East Kano, although not yielding much. It is interesting to note that the prolonged rains produced a grass cover in the Kano Plains such as had not been seen for many years. This resulted in the livestock becoming sleek and healthy, particularly in East Kano Location.
Following a short spell of rain in late August, a small amount of planting was carried out in the northern part of the Kanos and down the Nyando River, and this very small crop is now coming off as green food. The Luo have never planted a “short rains” crop in the Kanos due to the lack of rain at this time and it was fortuitous on this occasion as the “short rains” failed, and most of what was planted dried up. A small acreage of rice (approximately 600 acres) was planted in the Kano area, and although useful, was nothing like enough. Cotton was fairly extensively planted during the year and should yield some cash to those who have made the effort.

**Food Issues**

The issue of free American maizemeal began in Central Nyanza in January and the following system has been used. A team consisting of Agricultural Officers and Administration Officers visits each sub-location in turn and lists those in need in three categories:

(a) Women, children and old folk.
(b) Able-bodied men.
(c) Pregnant women.

The people then elect their own committee of elders who will distribute the food. Food is then delivered to the committee who keep a muster roll and who distribute it on the following scale:

<table>
<thead>
<tr>
<th>Category</th>
<th>7 lb.</th>
<th>4 lb.</th>
<th>7 lb.</th>
<th>10 lb.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old men and women</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Provided they have completed four days' work in the week.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Pregnant women</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This system appears to work satisfactorily and very few genuine complaints have arisen. It was discovered, however, that a number of wealthy and influential people had managed to get on the books. The greatest advantage of such a system is that it puts the onus on the elders to ensure that only those in real need get assistance.

A survey was carried out by the team approximately every month and either an increase or a decrease was recommended. In addition a number of medical surveys were carried out to determine the level of malnutrition in various areas. During August, Dr. Haupt visited the district and carried out a complete survey of East Kano Location, as a result of which he recommended cutting out all free issues of maize except in the still-flooded areas along the Nyando River. In addition, surveys were made in West Kano and with the exception of the flooded lake shore areas, each sub-location was reduced in its quota. The figures below show the relative population fed during each month:

<table>
<thead>
<tr>
<th>Month</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figures</td>
<td>20,000</td>
<td>23,000</td>
<td>26,000</td>
<td>32,000</td>
<td>34,000</td>
<td>38,000</td>
<td>38,000</td>
<td>18,000</td>
<td>18,000</td>
<td>18,000</td>
<td>18,000</td>
<td>18,000</td>
</tr>
</tbody>
</table>

A fresh survey is at present taking place in the Kano area to assess possible future needs, in view of the failure of the majority of people to realize either a “long” or “short rains” crop. This survey will probably result in further increases in free food distribution. It is unlikely that the people in the Kanos will reap a reasonable harvest until July or August, 1963. On the bright side, however, is the fact that extensive cultivation is now taking place throughout the area and it appears that a great effort is being made to overcome past failures.
RELIEF WORK PROJECTS

The following projects financed from funds issued by the National Disaster Committee are in hand:

Bundring of Rivers
(i) Nyando River.—Some two and a half miles of bunding has been done above Ahero on the right bank and it is intended to continue the bunding to the south. Hand labour is employed throughout.
(ii) Nzoia.—A similar scheme based on hand labour is under progress in Bunyala Location.

Kibos:
(a) Funds exist for the cutting of a channel through the swamps which at present impede this river’s course, but labour gangs will not be sent in until the completion of a survey by Hydraulic Branch of the Ministry of Works.
(b) Road Repairs.—Thirty-six road gangs are operating throughout the district on those minor and secondary roads which suffered most from floods.
(c) Dam Repairs.—Owing to technical problems, repairs to dams damaged by the floods are being carried out largely by mechanical means but a certain amount of hand labour is employed.
(d) Goye Causeway.—Work is in progress in building this causeway to link the isolated northern part of Yimbo Location with the main location.
(e) Bunyala Platforms.—This is in the nature of an experiment to show the Bunyala people the advantages of building platform houses on stilts which would be relatively immune to any sudden rise in the lake level.

PROGRESS WITH DROUGHT CROPS, ETC.

This has already been mentioned. The only crop planted as an insurance has been sweet potatoes. Cassava will not grow in the Kano Plains.

ACTIVITIES OF VOLUNTARY ORGANIZATIONS

Apart from a few individuals no organization as such has functioned in Central Nyanza. Rev. Father Buers from the Ahero Mission gave tremendous assistance in the early stages of the flooding, evacuating families by boat and arranging refugee centres, etc. The Seventh Day Adventist Mission gave free blankets and mosquito nets which were distributed amongst those in the flooded lake shore area. The Christian Council of Kenya offered voluntary helpers, who were fortunately not required.

SITUATION AND PROSPECTS AT THE END OF THE YEAR

It is regretted that an accurate picture cannot be given at present, pending the results of the survey being carried out throughout the area, the results of which will be submitted in due course.

South Nyanza

The heavy rains from mid-October onwards severely damaged the “short rains” food crops, which were expected to off-set the losses from the earlier drought. But over most of South Nyanza there appeared to be sufficient food for the population, and the sales of cotton, groundnuts and coffee had been some of the highest ever recorded for the district.

At the end of the year, however, the level of Lake Victoria rose suddenly, flooding the low-lying areas of land along the shore. The inhabitants of some of these areas lost all or most of their standing crops, and some of the food already in store. The District Commissioner toured some of these areas with Mr. S. Ayodo, M.L.C., and it was decided to apply for famine relief maize on a limited scale for these low-lying lake-shore areas.

After further investigation by the District Commissioner and District Agricultural Officer, it was decided to issue maize to those inhabitants who had been flooded out of certain of the low-lying areas along the lake. These areas were:—

East Karachuonyo–Miriu Peninsula.
Kasigunga.
Mfangano and Rusinga Islands.
Kaksingri.
West Konyango–Kuja River Delta area.
In these areas a Famine Relief Committee was formed under the local chief, with the subchiefs and A.D.C. and locational council members from the area concerned, one or two local “worthies”, and a KANU representative, as members. This committee drew up a list of needy persons and distributed the maize weekly under the orders of the Divisional District Officer. The relief maize was sent from Kisumu through the Maize Marketing Board and was sent on to the relief areas weekly by lorry or the District Commissioner’s launch. On several occasions the East African Railways and Harbours Administration went to considerable trouble to send the monthly supply of maize from Kisumu to Homa Bay by special steamer.

The distribution was made against a roll of families requiring maize, and the adult male members of these families were required to work for 20 hours each week on some local development project in return for free maize. A number of school houses were repaired by famine relief gangs, which also worked on local roads and in the chief’s camps. The ration was at first 10 lb. per week per adult and 7½ lb. per week per child, but this was later reduced and 5 lb. per person per week issued as a ration to supplement the food which was still available.

By the middle of May many of the inhabitants from the flooded areas had moved to higher ground where they had opened new shambas. Issues of maize to the relief areas were, therefore, reduced in June, and after further reductions were stopped completely in all areas but one, in August, when the new crops were ready for harvesting.

After July, maize was issued to only one of the areas originally involved, West Konyango, where about 40 families had been unable to find adequate land on higher ground. Plans are now being made to offer these families settlement plots in the Lambwe Valley, and it is hoped that those families who agree to move will be supplied with famine relief until they reap their first food crops in the settlement area. Similar offers of settlement plots are being made to families from East Karachuonyo. The Divisional D.O.s and A.A.O.s have recently taken a party of these people to see the Lambwe Valley and are now awaiting their decision.

Maize was also issued after July to a very small part of Kanyada Location, where the new crops had been ruined by flooding from the Rangwena River.

The issue of famine relief in South Nyanga was restricted to a few areas along the lake shore, and the supply of maize made it possible to assist those families who had insufficient food to last them until their next crops could be harvested in July, 1962. Except in West Konyango and Kanyada, where about 100 families are involved, famine relief is no longer required.

**SOUTH NYANZA MAIZE ISSUES 1ST MARCH, 1962, TO 31ST AUGUST, 1962**

<table>
<thead>
<tr>
<th>Received: (107 lb. bags)</th>
<th>8,485</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issued:</td>
<td></td>
</tr>
<tr>
<td>East Karachuonyo</td>
<td>1,243</td>
</tr>
<tr>
<td>Kasigunsa</td>
<td>1,495</td>
</tr>
<tr>
<td>Mfangano</td>
<td>1,355</td>
</tr>
<tr>
<td>Rusinga</td>
<td>1,985</td>
</tr>
<tr>
<td>Kaksingri</td>
<td>715</td>
</tr>
<tr>
<td>West Konyango</td>
<td>1,265</td>
</tr>
<tr>
<td>Kanyada</td>
<td>410</td>
</tr>
</tbody>
</table>

During March, April and May 10,000 men, women and children were receiving famine relief. During June and July the number dropped to 6,000 and in August to 1,500.

**NORTHERN PROVINCE**

**Turkana**

Give a man a fish—and you feed him for one day only.

Teach a man to fish—and you feed him for life.  
*Old Chinese proverb*

**The Problem**

The problem of famine relief in Turkana District continued into 1962 with even greater intensity, for the heavy rains of the latter part of 1961 took toll of stock already exhausted by the long years of drought, so that many families lost their few remaining animals, whilst richer people had their herds further decimated to such an extent that they were only able
to support their immediate kin and were forced to turn away other relatives and clan members who looked to them for help. Again, the phenomenal rains aggravated the famine situation by delaying the ripening of the wild fruits which most Turkana paupers rely upon to eke out their existence. Thus, as the year started, many more Turkana, particularly from the plains around Lodwar, turned to the famine relief organization for help and the Lodwar Camp in particular was hard pressed to cope with the stream of applicants for admission, some of whom were in the last stages of malnutrition. Large numbers of these new applicants were unmarried women and their children, who by custom would normally have been looked after by their fathers, but who had to seek other help as their fathers were pauperized by the natural disasters of 1960/61.

In addition, numbers of destitute Turkana were repatriated from the Karamoja District of Uganda and had to be absorbed into the camps. Thus from a population of about 5,000 at the turn of the year, the famine camps were feeding 10,800 people by the end of April. With such a dramatic rise in numbers and with so many serious cases presenting themselves daily for admission, especially at the Lodwar Camp, it was inevitable that a number of scroungers and persons with stock or with relatives who had some stock remaining, were admitted, and so from May onwards an operation was organized to weed out those people who should rightly have been able to look after themselves or be looked after by their families.

"Swings and Roundabouts"

As will be appreciated, this weeding out operation was a lengthy business which involved nearly every chief in Turkana. These chiefs, together with a representative committee of elders from each section, had to interview every famine camp inmate from their own sections to find out if they were completely destitute, or if they had any stock left to support themselves, or if they had any members of their families with sufficient stock to support them. This operation took the best part of three months, at the end of which period the famine camps' population was reduced to 5,500.

Unfortunately it is one thing to find that a person has relatives who can look after him and another entirely to persuade those relatives to accept the responsibility. This, combined with the size of Turkana District and the spread of its population, meant that some of those weeded out were never reabsorbed into their sections and has resulted in their trickling back to the famine camps for readmission. This trickle has been reinforced by other people who have eaten the few stock remaining to them at the turn of the year, so that at the time of writing the numbers in the famine camps have crept back to 6,800. Before being admitted these new inmates are medically examined and where possible interviewed by their chiefs.

Famine Camps

Very early on in the organization of famine relief in Turkana it was realized that due to the vast distances and poor communications of the district, it would be necessary to concentrate those receiving food into camps and so the present system of "famine camps" came about. Each camp is supervised by a team from a church or mission body and has clerical and warder staff paid for by the famine relief organization. The example of the Lodwar Camp makes it very apparent that if the camps are to be properly managed, then the population of each has to be kept to a minimum and it is now the policy not to allow the numbers in any camp to exceed 2,500 persons.

Maize, milk powder, meat powder, fresh and dried fish, and to a lesser extent a bewildering variety of proprietary foods, tonics and tablets have all found their way to the camps, where it is astonishing to see how quickly the new inmates regain their health. All the food, except fish, has to be transported into the district from Kitale or Nakura and the district's four leading traders share the huge transport contract.

During the year there have been the following camps: —

Lodwar, Logogo and Lorogunu Camps. —The Lodwar Camp dealt mostly with refugees from the hardest hit central plain area of the district, though many people from the west and north-west areas of the district were also admitted. It was supervised by missionary fathers from the Catholic Order of St. Patrick, who with the District Officer, Lodwar, bore the brunt of the famine relief explosion at the start of the year. At one time they were looking after nearly 6,000 persons. In May they were joined by two Sisters from the Order of the Medical Missionaries of Mary. The sisters are qualified nurses and they looked after the health of the camp.
In April an overspill camp for Lodwar was opened at Lorugumu and in July, after the “weeding operation” was completed, those remaining at Lodwar were moved to a new camp at Logogo, two miles from Lorugumu. Both these camps are supervised by the Catholic fathers from a base at Lorugumu.

The Lodwar Camp is now closed and the only people receiving relief in Lodwar are a handful of the stronger men and their families working on communal projects in return for their food.

Thanks to a grant from the National Food Relief Committee it has been possible to install wells, water pumps and maize grinding machines at both Lorugumu and Logogo Camps.

Ferguson’s Gulf.—This is a paupers’ camp of long standing and was expanded to meet the needs of the people living along the shores of Lake Rudolf and in the east of the central plain. In January, Mr. L. E. Whitehoue, a former District Commissioner, Turkana, helped to organize the expansion, since when a team of Christian Council of Kenya workers from Central Province have been in charge, with admirable results.

This camp is well situated on the shore of Ferguson’s Gulf on Lake Rudolf and receives large daily supplies of fresh fish from the camp seine net and from gill nets operated under the direction of a fisheries officer doing experimental work at the Gulf. This officer has also taught many of the camp inmates, male and female, how to make gill nets with twine supplied by the National Food Relief Committee. Some of the fish caught by these and other lakeside dwellers is being dried and bought with Relief Committee funds for distribution to other famine camps. The Committee has allocated £200 per month for the purpose and this guaranteed market is doing a lot to encourage the young fishing industry at Ferguson’s Gulf in getting started. Subsequent development and new markets are under discussion.

Kalin Camp.—The nucleus of this camp came from the paupers’ camp made up of survivors from past Merille massacres, and was situated near Todenyang. Kalin Camp also expanded rapidly to care for the people of the Lokitaung subdistrict and when it was necessary to call for outside help a team from the Friends Mission was sent by the Christian Council of Kenya. The personnel of this team come mainly from Nyanza Province and, in common with all supervisory teams, have done incredibly well.

During the Easter school holidays, the Friends team was relieved by a master and boys from Kamusinga High School, who gave up their holidays and started an experimental agricultural plot and got regular classes going for the camp children.

Lokori.—South of the Turkwell River, famine relief has not been carried out on anything like the same scale as in the centre and the north. People from the south have found their way into the Central Turkana famine camps, but not many.

It seems that the Kerio River, which is more permanent than the Turkwell, and the fact that the higher and more prosperous settled areas were at hand, contributed to the relief of much of the population of the south. The emigrants who joined friends and relatives in the settled areas have not been welcome visitors. They have created problems for farmers, the police and the Administration. The overcrowding, unemployment and lack of food have pushed many into crime. The number of Turkana accused in the courts during the past two years has increased considerably. However, there has been a small famine camp at Lokori, near Kangetet, on the River Kerio which has catered for between 200 to 500 people. This has been run by the African Inland Mission. Their services in the absence of sufficient Government staff have been invaluable.

Future of the Camp Inmates

Throughout the year, whilst the immediate problems of relief and the proper establishment of the camps have been the paramount care, the real and pressing problem of the future of the camp inmates has been very much under consideration. It has always been realized that the life and dietetics of the famine camps is completely different to anything previously experienced by the average inmate so that the longer he or she remains in the camps, the harder it will be for them to return to their normal way of life. Thus it follows that when an inmate and his or her dependants have recovered physically they should as soon as possible return to their manyattas, provided that they have stock or relatives with stock to support them.

Unfortunately the weeding operation mentioned in paragraph 2 showed that the tribe as a whole is not yet capable of reabsorbing these people and as they have no stock of their own the problem is a complicated one. A partial solution is to be found in distributing female
stock to them in return for a modest day's labour, and the National Food Relief Committee has given £3,500 to start such a scheme, with the promise of a further £6,500 if the first results are promising. Some stock has already been bought and distributed and it is hoped the scheme will gather momentum when the season of census and registration is over. Another scheme which is helping to rehabilitate some of the camps' inmates, is the expansion of the fishing industry at Ferguson's Gulf made possible, again, by funds from the National Food Relief Committee.

THE LONG VIEW

In the long term, however, the problem of the rehabilitation of the Turkana tribe is a national one. The fact of the present famine, combined with the large numbers of Turkana who have had to leave the district to search for subsistence throughout the Rift Valley and as far afield as Isiolo and Nanyuki, proves that in its present state the district is unable to support all the members of the tribe, whose numbers would appear to have been underestimated for some years.

It, therefore, seems that the only final solution is to resettle large numbers of the tribe on some form of high-density agriculture scheme and a start is being made in this direction with surveys of the Turkwell and Kerio Rivers to find out if irrigated cultivation in the valleys of these streams is possible.

PROBLEMS PECULIAR TO TURKANA

The following memorandum on famine relief problems in the Turkana District was prepared by the Kenya Government:

The Turkana District of the Northern Province is a vast semi-arid area of approximately 22,800 square miles, of which 6,600 square miles are said to receive a rainfall of 20 inches per annum or more, and over the whole area the annual rainfall fluctuates between two inches and 20 inches.

The Turkana people are a nomadic tribe and, except for a few who earn their living by fishing round Lake Rudolf, they are basically dependent upon their livestock for their livelihood, supplemented by wild fruits, game and birds. The total number of Turkana tribesmen is provisionally estimated at 100,000 by the recent census. There are about 25,000 taxpayers on the tax roll, which bears out the latest census figures. This represents an increase of 43 per cent over the past 14 years and there has been no corresponding increase in productivity or economic development. It may be assumed that the standard of living in this district has, in fact, declined over the period and this backward trend will continue until there is a wholesale rehabilitation of the tribe. The livestock population is estimated very roughly at 60,000 head of cattle, with about 140,000 sheep and goats, but no reliable count has ever been carried out.

Prior to the drought of 1961/62 a number of camps had been established in the Turkana District to deal with destitute people, mainly those who were the victims of inter-tribal raiding along the Turkana borders. With the onset of the 1961 droughts these camps were extended and at the beginning of this year roughly 10,000 men, women and children were receiving famine relief food in five camps. The cost of distribution alone of this food from railhead to the camps amounted to £1,600 per month. The majority of the people in camps were there because of the tremendous stock losses suffered by the tribe during the drought, followed by a whole sequence of animal diseases. Among the camp inmates there were a great number of unattached women.

In July this year a scheme was introduced to reduce the numbers of Turkana accommodated in these camps, since it was not practicable from either the financial or administrative angle that these numbers should continue indefinitely and the longer the people remained in the camps the harder it would be for them to return to their normal way of life.

It is proposed to carry out a phased reduction of the camp population over a period of one year, the phasing involving the screening by chiefs and elders of all famine camp inmates, so that those who are known to be able to support themselves or who have relatives who can support them can be removed and sent back to their manyattas.

The first phase was completed at the end of July and the number of inmates was reduced from the peak figure of 10,800 in April to about 5,500 in June. Unfortunately, a number of people were removed who could not support themselves or whose relatives could not support them and this necessitated their reabsorption back into the camps, with the result that the total camp population rose again to 6,800 by September. There are still a number of people, especially women and children, suffering from malnutrition who are presenting themselves for admission into the camps. These new entrants are screened as carefully as possible and
are generally medically examined before being admitted. It is difficult to estimate when this steady trickle of applicants for admission will cease, or how many they will ultimately total, but it is unlikely that we shall reduce the number very substantially below 7,000 until well towards the end of 1963. In an effort to reduce the camp population, the Administration are to experiment with the distribution of famine relief foods in the normal manner through the tribal authorities, since it is felt that once some of the people are out of the camps their rehabilitation and reabsorption into tribal life may be made easier in this way.

With the assistance of funds provided by the National Food Relief Committee, a number of immediate relief projects were started during the earlier part of this year. These projects were partly complementary to the phased reduction in the camp population and, briefly, they involved the removal of people from Kalin Camp to a fishing and agricultural settlement to the south of Todenyang Fort (about £1,000); the instruction of men from the Ferguson’s Gulf Camp in the art of gill net fishing, and the use of National Food Relief Committee money for the purchase of female livestock which were issued to provide an incentive for famine camp inmates to take useful work outside the camps (£10,000). These schemes, however, could and will not in themselves solve the problem of reducing the camp population, but they are useful as short-term measures. Stock losses of the Turkana have now stopped and their animals are producing again; it is also a fact that the grazing and water in the district have not for many years been so good as during the past few months.

The long-term answer to the Turkana problem does not lie in short-term relief projects, or in continued famine relief distribution, but in the education of the people in their absorption into employment outside their own district, or in the initiation of long-term measures for agricultural rehabilitation.

The latter remedy has been looked at recently by senior agricultural experts of the Ministry of Agriculture and in their report they have emphasized that there is no easy solution to the Turkana problem in this direction. They refer to the gross over-population of the district which is of long standing and in particular have drawn attention to the need for irrigation and agricultural surveys of the Turkwell and Kerio Valleys. Moreover, it is clear from their report that very large sums of money would be needed effectively to relieve the over-population problem of this one area where climatic and soil conditions will give a poorer return for any capital sums invested than in most other parts of the Colony.

The present distribution of famine relief food to the Turkana camps is running at the rate of over 1,000 bags per months which, since last September, has been purchased at concessionary rates from the Maize Marketing Board. The cost of this maize, together with transportation costs, the overheads of looking after the camps, and other charges amounts to about £3,000 per month. The cost would have been very much higher and the camps very much less effective had it not been for the generous assistance the Government has had from both the Christian Council of Kenya and the Catholic Churches in providing supervisory staff in the camps.

The purpose of this paper is to bring to the notice of the Oxford Committee on Famine Relief—

(a) the present position as regards famine relief in the Turkana District; and

(b) the likelihood that continued arrangements will be necessary to distribute free food (in, it is hoped, decreasing amounts) to the Turkana over the remainder of this year and the whole of 1963.

To continue famine relief measures for the remainder of this financial year will cost something of the order of £20,000 and a similar amount will be required in 1963/64, and the Oxford Committee on Famine Relief is invited to consider the adoption of the Turkana camps as a special project.

FISHING ON LAKE RUDOLF

Fishing on Lake Rudolf is, of course, a very old and well-established occupation for the Africans who live on the lake shores, both El Molo and Turkana, and there are frequent references to fishing by these people in Von Hohnel’s Discovery by Count Teleki of Lakes Rudolf and Stefanie (Longmans and Company, 1894). Thus, in respect of the Turkana it is recorded:

“Dhurra is only cultivated at the mouth of the Kerio and Turkwell, but the Turkana get a good deal of fish from Lake Rudolf, and in certain districts they make meal of the rind of the doum palms which are there very plentiful.”
And so it is today. The fishing potential of the Turkana side of Lake Rudolf has, over recent years, been exploited somewhat sporadically. Commercially it was done by the late Commander McKay, who supplied fish to the old Ferguson's Gulf paupers' camp and who also exported smoke-dried fish to Kitale, and also by one or two Nyanza entrepreneurs. In addition, numbers of stockless Turkana harvested the waters by means of basket traps, hand lines and the occasional long line.

In September, 1961, the Fisheries Department posted Mr. R. McConnel to Ferguson's Gulf to study the fishing possibilities at first hand and to experiment in finding the best methods of fishing suitable for the local Turkana tribesmen. It was the intention, if at all possible, to start a fishing industry to exploit the natural wealth of the lake. It was soon realized that though seine nets and long lines produced good results, Gill nets offered the most promising basis for a peasant fishing industry, and accordingly Mr. McConnel set out to instruct a number of local fishermen in the technique of Gill net making and in the use of such nets in fishing.

His classes expanded rapidly and soon he was taking men from the nearby famine camp and putting them through a short training course. To date about 150 men have graduated, together with another 150 members of their families. An encouraging sign has been the readiness of the women to learn about Gill net making and mending. The initial shyness on the part of the women was broken down by employing a local girl and training her as an instructor to teach the others.

The early classes used twine supplied by the Fisheries Department and as this supply ended it was replenished by buying more twine with money obtained from selling part of the experimental catch. As most of the nets were given to the fishermen and are now beginning to become worn out, more nets and twine are needed, and a further encouraging sign is the fact that some fishermen are now using money from the sale of part of their catch to buy their own ready-made nets and twine.

Apart from the late Commander McKay's smoked fish exports there was also a casual export of sun-dried fish through traders at Lodwar who usually obtained the fish in exchange for maize meal and tobacco. This outlet proved inadequate with the increased production brought about by better fishing methods and application was made to the National Food Relief Committee for a grant wherewith to buy the dried produce from the fishermen and to distribute it to inland famine camps. It was thought that the result of such a grant would be fourfold—

(1) it would supply a locally-produced high protein food to the camps;
(2) it would cut down on distribution costs;
(3) it would provide a small cash economy in the Ferguson's Gulf area and it would give a stimulus to fishermen just starting; and
(4) it would help to rehabilitate and make independent numbers of families who were relying entirely on the famine camp for their existence.

The Committee responded generously to this appeal and since July, 1962, has made a grant of £200 per month for the purchase locally of dried fish. At first this grant was not fully expended, but for the last two months of 1962 the supply of dried fish has exceeded the cash available for its purchase.

To date the development at Ferguson's Gulf has been surprisingly rapid, thanks entirely to Mr. McConnel's efforts. The present situation is that many Turkana now know how to make and use nets, but are without the means to purchase the netting twine or the boats from which to lay them. Likewise, there is an increasing amount of dried fish being produced which will soon be difficult to market. Again, due to the help of the National Food Relief Committee, a further £150 worth of Gill net twine has been purchased and a grant of £75 has been made and is being spent by the Fisheries Officer on a suitable locally-produced craft for Lake Rudolf water—probably an outrigger canoe of the "Sesse Island" or "Ngalawa" type.

A grant of £1,200 from the Government has been received and is being spent on four fibre-glass rowing boats and on more Gill net twine. The African District Council of Turkana has also included an item of £300 in its 1963 estimates with which to buy a stock of Gill net twine for re-sale to fishermen.

All this extra equipment should be sufficient to equip the remainder of the fishermen at Ferguson's Gulf until July, 1963, but it will also obviously result in an increased production of dried fish, which will require additional finance in order to market it. It is expected
that about £400 per month will be required for this purpose. If this money can be found, the position will be that there will then be the people, the equipment, and the market to keep the industry going at full pace for another seven months and during this seven months it will be possible to—

(a) continue fishery investigations and the training of up to 200 fishermen and their families, as well as endeavouring to extend the area of fishing beyond Ferguson’s Gulf, particularly to the water of the Kerio and Turkwell deltas and around Todenyang;

(b) explore alternative markets for dried fish and, if possible, introduce the product into such markets. Expatriate Nyanza tribesmen living in the Rift Valley and Nairobi and the old Victoria Market in Kampala seem to warrant investigation as potential consumers and the Fisheries Officer is making inquiries in these directions;

(c) investigate the possibilities of marketing lake fish in different forms, such as frozen, tinned, fish balls, etc.;

(d) draw up and estimate the cost of a development plan to put the incipient industry on a firm and permanent basis towards the second half of 1963; and

(e) seek financial aid in the form of a grant or loan, or a combination of both, with which to carry out such a development plan.

Present thinking is that the permanent development of the fishing industry should be on a co-operative basis. Members would purchase their equipment from the society and would pay for it through cesses on their produce. The society would have to start by employing an experienced manager who, in time, could train a suitable local person, but in the beginning the manager would have to be given more authority than is usual in a co-operative; one of his main tasks would be to introduce the idea of a co-operative to the people.

If the Fisheries Officer is to extend his area of operations and bring other fishing grounds into the scheme he will have to be provided with a boat sufficiently sea-worthy to take the squalls and storms of Lake Rudolf and big enough to carry a reasonable amount of equipment. Similarly, if the proposed co-operative is to supervise the activities of its members outside Ferguson’s Gulf and to collect their produce from areas which are not served by roads, then a boat of this sort is doubly necessary. It is estimated that a boat with suitable specifications could be built and transported to Ferguson’s Gulf for about £1,100 and it is envisaged that at first it would be the property of the African district council and would be run by the Fisheries Officer, but that at a later date it would be taken over as part of the initial equipment of the fishing co-operative.

The fishing industry at Ferguson’s Gulf has one particular problem at present and that is the crocodile menace. So far crocodiles have been responsible for a great amount of damage to the actual nets and are preventing their full use since, because of the presence of crocodiles, it is not possible to leave the nets out over night, which is, in fact, the best fishing time. If the industry is to develop then the crocodiles in the areas of the fishing grounds must be destroyed and the most efficient way to do this would be to give a concession to a person who would shoot them for profit.
CHAPTER FOUR

MEDICAL AND NUTRITIONAL CONSIDERATIONS, 1961/1962

The contribution by the Ministry of Health to the Report "Famine and Floods in Kenya, 1961", stressed the importance of the two major factors affecting the position in regard to the famine and floods experienced in 1961. It was stated that the effects depended on two main factors:

1. The previous nutritional status of the population.
2. The length and frequency of famines in the past.

In the first category, the statement that "the least deleterious effects of famine appear when the previous nutritional status of the people is good and when the famine periods are short and infrequent" was borne out by recent experience.

The converse was equally well demonstrated where the previous nutritional status was poor and the famine long. In Turkana District particularly, from time immemorial the people have lived in the shadow of starvation and these were the people who were most seriously affected by the droughts of 1960 and 1961. They depended exclusively upon their stock, not just for their livelihood but for their very existence and the loss of this stock precipitously destituted thousands who would undoubtedly have died in the normal course of events and without the famine aid.

An early move was made in 1961 to bring these people together into camps where they could more easily be fed and it was in the camps that individuals most obviously affected by the famine were to be seen. The proportion of women and children was extremely high and cases of gross starvation were not uncommon. At one stage there were over 10,000 people being fed in the temporary camps. That there were no great outbreaks of epidemic diseases amongst such a large concentration of a population, whose normal way of life precluded them from living in communities of any size, is a great tribute to the administration of these camps and to the efforts of the voluntary agencies who assisted in their management.

The Masai people, although also pastoralists, were not as grievously affected by the drought, despite the fact that their cattle losses were extremely high. Camps had to be established to feed those who were completely destitute; that is to say, those who had lost all their stock. In addition to the camps, food distribution centres were established throughout the worst-affected district of Kajiado in Masailand.

The lesser effect upon the human population in this area was due to the relative accessibility of the Masai, and this enabled food to be brought to them sooner and more easily than had been the case in Turkana. In consequence, the cases of starvation were not nearly as frequent nor as severe as those that had occurred in Turkana.

In the agricultural areas (which again, by reason of good communications, were more easily accessible) the crops had suffered severely in the drought, but early recognition of the impending famine brought effective aid in good time.

The dramatic events of the floods, so graphically described in the previous report, produced short-term food problems as a result of interruption of supply lines and destruction of planted crops. But the heavy rainfall later brought on an excellent flush of grazing and allowed food crops to be grown in areas where previously this had not even been attempted. This applied, in particular, to many parts of Kitui, Machakos and the low-laying bush country surrounding the Taita Hills and the hinterland of the Coast.

Following on the floods at the beginning of the year, the consequent rise in the level of Lake Victoria destroyed a relatively large area of arable land in Central Nyanza and, in fact, made this land unusable throughout the year. The experience gained during the floods of "the 100 days period" enabled rapid aid to be brought to the area and there was no loss of life due to starvation.

* In this report, the terms, acute starvation, malnutrition and under-nutrition are used in a strict sense.
It is, perhaps, appropriate to say here that the energetic steps which brought such apparently limitless amounts of food to the flooded and distressed areas, resulted in a ready acceptance of the bounty of free food. It appeared to some that there was no necessity for them to make any attempt to grow staple crops or to anticipate their future requirements as the "Government" would obviously provide for them. Attempts to reduce the aid resulted in vigorous resistance in some areas.

In view of the fact that it was extremely difficult to obtain genuine appreciation of the real need on a countrywide basis and as between the different affected areas, an Assessment Team was created which visited each area in turn to try to establish a system of priorities in regard to those needs. The team consisted of the Executive Officer (Food Shortage), the Medical Officer (Nutrition) of the Medical Department and, for the pastoral areas, a senior Veterinary Officer. This enabled a reasonably balanced view of the whole situation to be achieved. Furthermore, the team was often able to make suggestions for relieving immediate problems and proposing long-term measures which would assist in rehabilitation. This assessment confirmed the belief that, whereas the famine presented an acute problem of starvation of some magnitude, the problem of chronic, long-standing under-nutrition and malnutrition was, and still is, a much more disturbing feature, particularly in regard to the vulnerable groups of the children and the aged.

The occurrence of famine presents such a dramatic picture that assistance is immediately made available and the relief measures can be applied with such sufficient rapidity as to prevent gross starvation. Conversely, the problem of chronic malnutrition and under-nutrition is not dramatic and requires for its solution long-term planning and sustained measures which do not produce easily demonstrable results in a short time. Education in nutrition is an example of the kind of programme which has to be followed over a long period before its benefits become apparent.

During the course of these visits, the Medical Officer clinically assessed the nutritional status of between six and eight thousand children. Excluding the Turkana children (by far the worst affected, with many gross cases of starvation) it is an interesting fact that he assessed the amount of malnutrition in children as remarkably constant, both within the individual communities and in the country as a whole. The criteria were based upon the obvious signs of protein and other specific nutrient deficiencies, but not upon height and weight standards, which would have been impossible to measure under the prevailing circumstances and in the time available.

This assessment confirmed the belief that, whereas the famine presented an acute problem of starvation of some magnitude, the problem of chronic, long-standing under-nutrition and malnutrition was, and still is, a much more disturbing feature, particularly in regard to the vulnerable groups of the children and the aged. The occurrence of famine presents such a dramatic picture that assistance is immediately made available and the relief measures can be applied with such sufficient rapidity as to prevent gross starvation. Conversely, the problem of chronic malnutrition and under-nutrition is not dramatic and requires for its solution long-term planning and sustained measures which do not produce easily demonstrated results in a short time. Education in nutrition is an example of the kind of programme which has to be followed over a long period before its benefits become apparent.

As was foreseen in the previous report, the next most seriously-affected groups were amongst the women and the aged. It was noticeably a common practice for the old (and apparently emaciated) folk to be pushed well into the foreground at those places where examinations were being carried out, apparently to exaggerate the degree of starvation present and so to ensure a continuation of the free food supplies. But there was a reverse side to this, for the clinical assessments were made only upon those people who were able to come to the examination point and no consideration could therefore be given to those who could not be present for any reason whatsoever, including whether from lack of food. It was, therefore, sometimes difficult to ensure that those in real need actually received relief supplies.

From the point of view of the general public health, the greatest problems were presented by the camps in Turkana into which the people had been brought who required assistance and in the flooded areas.

Turkana is a large, arid area in which people live in small isolated groups. Medical services in the district were probably the least widespread in the country and the concentration of this normally widely-scattered population into the camps presented many urgent
problems which were beyond the capacity of the local medical and health personnel. In consequence, additional nursing and auxiliary aid was asked for and received from the voluntary agencies, in particular the Catholic Secretariat, the Christian Council of Kenya and the Salvation Army. Without this aid it would have been extremely difficult to cope with the increased demand for medical and health services.

The flooded areas presented the threat of increased typhoid, dysentery, plague and especially malaria. The actual increased incidence of malaria was not as great as had been anticipated, but it would certainly have been far greater had it not been for the generous donation of £15,000 by the Oxford Committee for Famine Relief for anti-malarial measures. This sum was not fully spent and permission was received for the unexpended balance to be used to assist the medical and health services of those local authorities whose finances had been impoverished by the disasters of either flood or drought, or both. This generous action by the Oxford Committee for Famine Relief has been greatly appreciated by those authorities and by the Ministry of Health.

The greatest problems in the aftermath of the famine period also remain in the Turkana District. The rehabilitation of thousands of destitute people in a country as harsh as this area is, presents very many difficulties. Great stress has been put by the Ministry of Health upon the food and economic resources of Lake Rudolf and considerable attention has been drawn to the potential fish production from this relatively limitless reservoir of high-quality food and the possibility of redistribution of the population. With the co-operation of the National Famine Relief Committee, the Administration and the Fisheries Department, it is hoped that several hundred families will be able to maintain themselves by their improved efforts at fishing and supply much-needed protein not only to the district but to the rest of the country as well. The main difficulties facing this project lie principally in the poor communications, the long distances and the lack of a fully-developed marketing system. It is to be hoped that these problems will be overcome in the not too distant future.

Coast Drought

No sooner had the difficulties which had faced the country at the start of the year begun to recede to more reasonable proportions, than the threat of a further new drought in the Coastal region started to raise misgivings. Failure of the “long rains” eventually made certain that famine conditions must be expected and the situation was further aggravated by the failure of the succeeding “short rains”. In the Kwale District alone, it was estimated that some 60,000 people would have to be fed. The Assessment Team visited the area and advised that, while relief foods were necessary and should be issued at once, adequate control had to be kept to prevent a repetition of the situation where “Government” was to be looked upon as a “Horn of Plenty” and that no further effort to help themselves was necessary on the part of the local people. With this principle in mind, the Administration went to the aid of those in need.

A second visit to the Coast by the Assessment Team, only a few months later, showed that the nutritional state of the children had deteriorated since their previous visit. This was complicated by the fact that the intake of milk into the treatment plant of the Mariakani Milk Scheme had increased considerably. From this fact and from local information, the team was able to draw attention to the fact that an educational programme in the area was necessary to demonstrate to the people that it was vitally important for them to retain part of the milk production to feed their own families. This programme was, in fact, put into operation before the end of the year.

Perhaps the most important beneficial factor which arose as a result of the great catastrophies of 1961 and 1962, was the attention which had been drawn to the nutritional needs of the people of this country. The establishment of the National Advisory Council on Nutrition crystallized the long-held idea of the Ministry of Health for a national body to advise on a nutrition policy for the country. Its creation was a direct result of the deliberations of the National Food Relief Committee, who strongly recommended to Government that such a body should be created. Representation from all Ministries and Departments whose activities cover the different aspects of the field of nutrition, has resulted in an influential body whose advice is asked for and received with respect. Its main responsibility lies in the long-term aspects of nutrition and, because of this, it has rightly fallen heir to the small remaining balance of the Famine Relief Appeal Fund.
During the period when the National Food Relief Committee and the Council were operating contemporaneously, the most cordial co-operation existed between them with the division of responsibility for immediate and urgent problems carried by the National Food Relief Committee and those of a long-term nature by the National Advisory Council on Nutrition. It is to be hoped that the council will fulfil the great promise which is inherent in its terms of reference of eradicating or, at least, reducing to minimal proportions the waste of human life and effort which is represented by the sad toll of malnutrition and under-nutrition in Kenya today.

The plans of the National Advisory Council on Nutrition will only become effective with the active co-operation and support of the field staffs who carried out so efficiently the relief measures that saved so many lives during the emergencies described in this and the previous report. It is only with their further sustained co-operation that the nutritional standards of the nation can be raised.
CHAPTER FIVE

POPULATION GROWTH IN KENYA, 1948-1962

Some thoughts on the provisional results of the 1962 Census
(by J. G. C. Blacker, M.A., Ph.D.)

The accurate measurement and analysis of population growth require three separate sets of statistics: censuses, vital registration and migration statistics. In Kenya, figures obtained from vital registration and migration records are only of value, from the demographic standpoint, for the non-African population; for the African population, any analysis of the rate of population growth must be based on census data only.

Two censuses of the African population of Kenya have been held: the first in 1948 and the second in 1962. The 1948 census did not cover the Northern Province, Samburu District, or the East Suk Division of Baringo District. Thus, for the remainder of the country, the principal source of information on population growth is the apparent increase in population between the two censuses. The basic figures are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Population 1948</th>
<th>Population 1962</th>
<th>Percentage Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Province, Samburu and East Suk</td>
<td>219,961*</td>
<td>653,000</td>
<td>197</td>
</tr>
<tr>
<td>Remainder of Kenya</td>
<td>5,186,005</td>
<td>8,023,000</td>
<td>55</td>
</tr>
<tr>
<td>TOTAL KENYA</td>
<td>5,405,966</td>
<td>8,676,000</td>
<td>60</td>
</tr>
</tbody>
</table>

* Estimates prepared by District Commissioners.

Intercensal increases are, however, unsatisfactory measures of population growth, for three reasons: they represent compounds of both natural increase and migration; they sometimes cannot be calculated accurately on account of boundary changes between the censuses; they may be affected by varying degrees of coverage in the different censuses.

Boundary changes, though not affecting Kenya as a whole, introduce a serious problem at district, and even provincial, level. There are few districts in Kenya whose boundaries were not altered between 1948 and 1962, and only rarely can the figures obtained in 1948 be adjusted so as to make a completely valid comparison with 1962. At provincial level, the excision of Nairobi Extra-Provincial District from Central Province (at the same time involving extensive boundary changes) and the formation of Southern Province, have prohibited accurate comparisons. Below district level, any attempts at comparisons for divisions or locations are (except in rare cases) quite futile.

The question of varying coverage also raises serious difficulties. For the Northern Province, Samburu District and the East Suk Division of Baringo, where no census was conducted in 1948 and the population figures were based on District Commissioners' estimates, any comparisons with the figures obtained in 1962 are clearly worthless for assessing the rate of growth of the population*. But even for those districts where a full-scale census was attempted in 1948, the 1962 figures have in some cases revealed apparent increases too large to be attributed to the normal processes of population growth. The highest rate of natural increase (i.e. excess of births over deaths) ever recorded for a human population is about 4 per cent per annum†, which, when cumulated over 14 years, would give an overall increase

* Indeed the provisional 1962 figures obtained for some of these areas have been so much higher than had been estimated that they give cause for serious concern and are under investigation.

† A rate of about this order has been found for the North American Hutterites, an anabaptist sect with a high standard of living but eschewing birth control. Rates of over 4 per cent have also been recorded for the Indian population of Fiji (see Dr. Norma McArthur, "Population and Social Change: Prospect for Polynesia", The Journal of the Polynesian Society, vol. 70 No. 4), but, in the opinion of the present writer, the mortality of the Fiji Indians may have been under-registered. Likewise rates of 4 per cent or over which have been quoted for some African populations are highly suspect in view of the nature of the statistics on which the rates are based.

43
of 73 per cent. It is extremely unlikely that any population in Kenya would have a rate of natural increase of 4 per cent per annum; 3½ per cent per annum—giving 62 per cent over 14 years—would probably be a more realistic maximum. Thus a genuine increase of over 62 per cent could only be achieved as a result of substantial immigration. In the absence of such immigration, apparent increases of this magnitude must be attributed either to under-enumeration in 1948, or to over-enumeration in 1962.

Bearing all these factors in mind, the apparent increases for the 33 administrative districts of Kenya, excluding the Northern Province and Samburu, are shown on the attached table. It will be seen that ten districts showed increases of over 62 per cent: Narok, Elgeyo-Marakwet, Kajiado, Nairobi, Kisii, Mombasa and Kericho showed increases of over 70 per cent; Nanyuki, Baringo and Laikipia increases of between 60 per cent and 70 per cent.

In view of the influx of population into the towns, the figures for Nairobi and Mombasa give cause for no surprise; indeed the 1962 census revealed rather smaller populations for these towns than had been estimated. Likewise the increases for Kericho, Laikipia and Nanyuki can be largely explained in terms of immigration or boundary changes*. But for the Masai districts, Kisii, Elgeyo-Marakwet and Baringo no such ready explanation is available.

An indication of possible over-enumeration in 1962 may be obtained by comparing the results of the 10 per cent post-enumeration survey, or sample census, with those obtained for the same sub-locations in the general census. For Kajiado, Kisii and Baringo (excluding East Pokot Division), the figures tied up reasonably closely and the possibility of large-scale over-enumeration can be excluded. For Narok, where only two areas were re-enumerated in the sample census, the results were inconclusive. In Elgeyo-Marakwet it seems possible that the recorded population in one or two locations may have been exaggerated, but the extent of this over-enumeration seems to have been relatively small. Thus the principal reason for the large apparent increases in the populations of these districts would appear to be under-enumeration in 1948.

Because of these distortions, it is clear that the overall apparent increase cannot be taken as giving a true indication of the rate of growth of the population. The distribution of districts by percentage increase is fairly heavily skewed: the weighted mean increase, as we have seen, was 55 per cent; the median increase was 50 per cent and the modal increase 44 per cent. It can be argued that the median or the mode may give a more realistic indication of the rate of growth of the population than does the mean. If we take the median, we get an average rate of growth of 2.94 per cent per annum; if we take the mode we get 2.64 per cent per annum. In the opinion of the writer the median is probably nearest the truth, and, in round figures, a rate of growth of 3 per cent per annum is the best estimate which can be obtained from the data at present available.

How is this rate of 3 per cent per annum made up in terms of migration, birth rates and death rates? Until the 1962 data on fertility, mortality and birthplace have been fully analysed, the answer to this question must be based largely on speculation.

It is not thought that net migration of Africans either into or out of Kenya is substantial. There has certainly been no large-scale influx from neighbouring territories comparable with, say, the immigration into Uganda from Ruanda-Urundi. We would probably, therefore, not be far wrong in assuming that the net effect of migration on Kenya's population growth has been virtually negligible.

The data obtained in the 1948 census clearly indicated that fertility was appreciably higher in Kenya than in either Tanganyika or Uganda. Estimates of the crude birth rate indicated a figure of about 50 per 1,000 for Kenya in 1948, compared with 46 per 1,000 in Tanganyika in 1957 and 42 per 1,000 in Uganda in 1959.

The death rate is more difficult to estimate accurately, but calculations based on the 1948 Kenya data suggested that it was probably in the neighbourhood of 25 per 1,000. However, the Population Branch of the United Nations has advocated that population estimates and projections for under-developed countries with inadequate statistics should envisage a fall in mortality such that the expectation of life at birth increases annually by about 0.5

* In Kericho the acreage under tea (which probably requires a higher labour force than any other agricultural crop) doubled between 1948 and 1961, and must have attracted considerable immigrant labour. It should be observed, however, that the population of the African Land Units also showed a apparent increase of about 80 per cent, which cannot be attributed to the development of the tea industry. In Laikipia the number of agricultural employees increased by more than 50 per cent between 1954 and 1961. (No reliable figures are available before 1954). Nanyuki gained a considerable area, but involving an unknown number of persons, due to a boundary change with Laikipia.
years*. Thus if (as seemed probable) the expectation of life at birth in Kenya was about 36 years in 1948, by 1962 it should have increased to about 43 years. A change of this magnitude could easily cause a drop of five points in the crude death rate—from 25 to 20 per 1,000. And the latter figure, we may observe, is the value obtained for Uganda in 1959.

Thus if the birth rate remained constant at 50, and the death rate fell to 20 per 1,000, we get a rate of natural increase of 30 per 1,000, or 3 per cent per annum (O.E.D.).

If this rate of growth is maintained, the population of Kenya will reach 11 millions by 1970, 15 millions by 1980, 20 millions by 1990, and 26\(\frac{1}{2}\) millions by the end of the century.

**Famine Areas**

When we turn from consideration of Kenya as a whole to the famine areas in particular, we are faced with an almost total lack of reliable data, and are thus largely reduced to speculation and guesswork.

The famine-affected districts may be broadly divided into two categories: those where the famine was caused by floods and those where it was caused by drought. To those in the first category, the question of population growth is scarcely relevant. For the drought areas, which were largely inhabited by pastoral nomadic tribes, data are either wholly lacking or very unreliable. Thus in Turkana no census was held in 1948, while that of 1962 was done on a sampling basis, and the sampling errors have yet to be determined. In Baringo and the Masai districts, as we have seen, there is reason to suppose that the population was seriously under-counted in 1948.

In the remainder of the drought-affected districts, no consistent pattern of population growth is evident. In the two Kamba districts, for example, the intercensal growth for Machakos was above the median value, while that for Kitui was well below it. And for Kenya as a whole there was no correlation, either positive or negative, between population density and population growth\(\dagger\). This result reflected similar findings in both Tanganyika and Uganda, and it would seem in fact that two opposite movements have taken place. On the one hand in some areas of low density, such as Turkana, the inhospitable nature of the country has tended to force the expanding population to seek their means of livelihood elsewhere. On the other hand, in some of the more fertile areas of high density, population pressure has already reached such a pitch that the people are similarly being forced out into other districts. There can be little doubt, for example, that the relatively low increases in Nyeri, Fort Hall and Kiambu should be attributed largely to emigration, which is reflected in the large excess numbers of women over men in these districts.

Whether natural increase is higher or lower in the famine areas than in the country as a whole again cannot be determined from the data at present available. It might be thought that among the pastoral nomadic tribes, who have been less affected than the settled agricultural population by modern medicine and health services, mortality might be higher than the national average. Yet certain features of their normal way of life may in themselves be conducive to healthier conditions. Thus it is known that among many African peoples, a peak period of morality occurs about the age of weaning. It can be argued that among the pastoral tribes, where milk constitutes a major item of diet, the transition effected at weaning would be less likely to produce an upsurge of mortality at that age than among agricultural peoples. It is possible also that the arid nature of the country might itself tend to reduce the incidence of diseases such as malaria or bilharzia.

On the question of fertility, there is a general popular belief that the birth rate among the Masai is unusually low. But as far as the writer is aware, this contention has never been corroborated by sound statistical evidence\(\S\) and an anthropologist who lived and worked among the Masai and with whom he discussed the problem, was of the opinion that it was mythical. In other famine-affected areas, the 1948 fertility data showed no marked divergence from the national average, except in parts of Coast Province (most noticeably Lamu) where it was conspicuously low, and may account in part for the relatively small intercensal growth in this area.

In summary, there is no reason to suppose that the rate of population growth in the famine areas has differed conspicuously from that of Kenya as a whole, which at present is among the highest, not only in Africa, but also in the world.

---

\(\dagger\) The districts were ranked according to their average population density and their apparent intercensal growth, and Spearman's rank correlation coefficient calculated. The value obtained was \(r = 0.04\).
\(\S\) Thus kwashiokor, a disease due to protein deficiency, and a major cause of mortality among young children, was unknown among the pastoral tribes until the recent famine.

No sample census, involving the collection of fertility data, was done in the Masai districts in 1948.
### DISTRICT POPULATION INCREASE, 1948-1962

<table>
<thead>
<tr>
<th>District</th>
<th>Population 1948</th>
<th>Population 1962</th>
<th>Percentage Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nairobi E.P.D.</td>
<td>140,012</td>
<td>314,000</td>
<td>124</td>
</tr>
<tr>
<td><strong>Central Province</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Embu</td>
<td>202,611</td>
<td>293,300</td>
<td>45</td>
</tr>
<tr>
<td>Fort Hall</td>
<td>304,457</td>
<td>406,900</td>
<td>33</td>
</tr>
<tr>
<td>Kiambut</td>
<td>286,196</td>
<td>469,600</td>
<td>28</td>
</tr>
<tr>
<td>Meru</td>
<td>313,702</td>
<td>65</td>
<td>102</td>
</tr>
<tr>
<td>Nanyuki</td>
<td>34,721</td>
<td>57,400</td>
<td>50</td>
</tr>
<tr>
<td>Nyeri</td>
<td>184,363</td>
<td>254,000</td>
<td>28</td>
</tr>
<tr>
<td>Thika</td>
<td>69,052</td>
<td>98,300</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total Central Province</strong></td>
<td>1,395,102</td>
<td>1,924,400</td>
<td>38</td>
</tr>
<tr>
<td><strong>Coast Province</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kilifi-Malindi</td>
<td>184,988</td>
<td>246,800</td>
<td>33</td>
</tr>
<tr>
<td>Kwale</td>
<td>116,251</td>
<td>157,800</td>
<td>36</td>
</tr>
<tr>
<td>Lamu-Tana River</td>
<td>40,286</td>
<td>52,500</td>
<td>30</td>
</tr>
<tr>
<td>Mombasa</td>
<td>97,545</td>
<td>178,400</td>
<td>83</td>
</tr>
<tr>
<td>Taita</td>
<td>62,051</td>
<td>90,100</td>
<td>45</td>
</tr>
<tr>
<td><strong>Total Coast Province</strong></td>
<td>501,121</td>
<td>725,600</td>
<td>45</td>
</tr>
<tr>
<td><strong>Nyanza Province</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Nyanza</td>
<td>469,748</td>
<td>663,800</td>
<td>24</td>
</tr>
<tr>
<td>Elgon Nyanza</td>
<td>224,495</td>
<td>348,100</td>
<td>55</td>
</tr>
<tr>
<td>North Nyanza</td>
<td>411,085</td>
<td>608,300</td>
<td>48</td>
</tr>
<tr>
<td>South Nyanza</td>
<td>306,245</td>
<td>481,600</td>
<td>57</td>
</tr>
<tr>
<td>Kisii</td>
<td>240,345</td>
<td>519,200</td>
<td>116</td>
</tr>
<tr>
<td>Kericho</td>
<td>214,759</td>
<td>391,200</td>
<td>82</td>
</tr>
<tr>
<td><strong>Total Nyanza Province</strong></td>
<td>1,866,677</td>
<td>3,012,200</td>
<td>61</td>
</tr>
<tr>
<td><strong>Rift Valley Province</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ex. East Pokot and Samburu)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baringo (ex. East Pokot)</td>
<td>65,647</td>
<td>110,000</td>
<td>68</td>
</tr>
<tr>
<td>Elgeyo-Marakwet</td>
<td>64,497</td>
<td>161,000</td>
<td>150</td>
</tr>
<tr>
<td>Laikipia</td>
<td>42,541</td>
<td>69,600</td>
<td>24</td>
</tr>
<tr>
<td>Naivasha</td>
<td>201,264</td>
<td>311,900</td>
<td>55</td>
</tr>
<tr>
<td>Nakuru</td>
<td>80,796</td>
<td>119,100</td>
<td>47</td>
</tr>
<tr>
<td>Nandi</td>
<td>64,087</td>
<td>97,500</td>
<td>23</td>
</tr>
<tr>
<td>Trans-Nzoia</td>
<td>84,474</td>
<td>100,600</td>
<td>19</td>
</tr>
<tr>
<td>Uasin-Gishu</td>
<td>42,831</td>
<td>59,000</td>
<td>38</td>
</tr>
<tr>
<td>West Pokot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Rift Valley Province</strong></td>
<td>646,137</td>
<td>1,028,700</td>
<td>59</td>
</tr>
<tr>
<td>(ex. East Pokot and Samburu)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Southern Province</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kajiado</td>
<td>29,482</td>
<td>68,400</td>
<td>132</td>
</tr>
<tr>
<td>Narok</td>
<td>37,648</td>
<td>110,100</td>
<td>192</td>
</tr>
<tr>
<td>Kitui</td>
<td>211,254</td>
<td>284,700</td>
<td>35</td>
</tr>
<tr>
<td>Machakos</td>
<td>358,542</td>
<td>558,500</td>
<td>54</td>
</tr>
<tr>
<td><strong>Total Southern Province</strong></td>
<td>636,926</td>
<td>1,013,700</td>
<td>59</td>
</tr>
</tbody>
</table>

Note.—The figures for Lamu and Tana River have been combined on account of a substantial boundary change between the two districts; likewise those for Naivasha and Nakuru, which were one district in 1948. Otherwise the only adjustments to the 1948 which have been made for boundary changes have been those involving Nairobi, Kiambut and Machakos, and those arising from the transfer of Ol Kalou Ward from Nakuru to Laikipia.

All the 1962 figures are provisional and have been rounded to the nearest hundred.
APPENDICES

I.—Recipients of Certificates . . . . . . . . . . . . . . . . . . . 49
II.—Facsimile of Certificate . . . . . . . . . . . . . . . . . . . . . 51
III.—Maize Issued in 1962 . . . . . . . . . . . . . . . . . . . . . . 52
IV.—Total Quantities of Food Issued . . . . . . . . . . . . . . . . 54
V.—Principles on Which Famine Relief Granted . . . . . . . . . . . 54
VI.—Statement of Accounts . . . . . . . . . . . . . . . . . . . . . . 55
VII.—Meteorological Statistics . . . . . . . . . . . . . . . . . . . . 56
VIII.—Maps Showing Famine Relief and Population Fed in January 1962, Compared with December, 1962. . . . . . . . . . . . . . . . . . . . . . at end
APPENDIX I

The following is a list of naval, army and air units and of individuals, both officials and unofficials, who were specially commended by the Governor on behalf of the Government of Kenya for their outstanding services during the 1961-62 Famine and Flood operations:—

H.M. FORCES

ROYAL NAVY—
(1) 824 Squadron, the Aircraft Carrier H.M.S. “Victorious”.
(2) 825 Squadron, the Aircraft Carrier H.M.S. “Centaur”.
(3) The Tank Landing Ship (Assault) H.M.S. “Striker”, and her Light “Assault” Landing Craft.

ARMY—
The Officers and men of:
(1) H.Q. East Africa Command.
(2) H.Q. 24 Infantry Brigade Group.
(3) H.Q. Royal Engineers and Commander, Royal Engineers, Kahawa.
(4) 36 Corps. Engineer Regiment, Royal Engineers.
(5) 24 Field Squadron, Royal Engineers.
(6) 34 Independent Field Squadron, Royal Engineers.
(7) 8 Independent Reconnaissance Flight, Army Air Corps.
(8) 16 Company Royal Army Service Corps. (Air Despatch).
(9) 60 Company Royal Army Service Corps. (24 Infantry Brigade Group).
(10) 91 General Transport Company, King's African Rifles.
(11) H.Q. 70 Infantry Brigade, K.A.R.
(12) H.Q. Nairobi Garrison.
(13) 3rd Regiment, Royal Horse Artillery.
(14) 2nd Battalion Coldstream Guards.
(15) 1st Battalion Queen's Own Buffs.
(16) 1st Battalion, The King's Regiment.
(17) 210 Signal Squadron.
(18) 1st Infantry Workshops, Royal.
(19) 1 Infantry Workshops, R.E.M.E.
(20) 11th Battalion, King's African Rifles.
(21) 93 Motor Transport Company (Infantry Brigade) K.A.R.
(22) Light Aid Detachments of Headquarters.
(23) 70 Infantry Brigade, King's African Rifles.
(24) 1st Signal Squadron, K.A.R.
(25) 37 Supply Depot, R.A.S.C.

THE ROYAL AIR FORCE—
(1) No. 30 Squadron, Eastleigh, Kenya (2 Beverley Aircraft).
(2) No. 47 Squadron, Transport Command, Abingdon, Great Britain.
(4) The Royal Air Force Station, Eastleigh, Nairobi.
(5) No. 225 Squadron, Odiham, Great Britain.
(6) No. 21 Squadron, Eastleigh, Kenya.
(7) No. 53 Squadron Transport Command, Abingdon, Great Britain.
(8) No. 3 Squadron of the Royal Rhodesian Air Force.
(9) No. 70 Squadron, Near East Air Forces.
(10) No. 84 Squadron, Near East Air Forces.
The Kenya Police Airwing.
The Royal Rhodesian Air Force.

INDIVIDUALS

COAST PROVINCE—
(1) Mr. H. J. Simpson.
(2) Mr. C. L. Ryland.
(3) Major J. M. E. Wainwright.
(4) Mr. Masoodi Abdalla.
(5) Dr. Hillborne.
(6) Mr. H. K. Arnold.
(7) Mr. A. P. Vienna.
(8) Mr. J. Duke.
(9) Mr. Daniel Toya.
(10) Mr. Jackonia Kainani.
(11) Mr. Aliud David Abio.
(12) Mr. Matia Teeflo.
(13) Mr. Phillman Matayu.
(14) Mr. Salatse Teeflo.
(15) Mr. F. Brauer.
(16) Mr. Johana Walakita.
(17) Mr. Hendrich Elia.
(18) Mr. Johnson Emanuel.
(19) Mr. Matata Julius.
(20) Mr. Mohammed Athuman.
(21) Mr. Harrison Katana.
(22) Mr. Phares Joel.
(23) Mr. Marigo Mikael.
(24) Miss Mary Ezekiel.
(25) Mr. M. S. R. P. Nel.
(26) Mr. G. Luce.
APPENDIX I—(Contd.)

SOUTHERN PROVINCE—
(1) Mr. A. D. Galton-Fenzi, M.B.E.
(2) Mr. P. A. Whitcher.
(3) Mr. Soloman Mwai Matuku.
(4) Mr. H. G. B. Johnston.
(5) Mr. C. Rochia.
(6) Mr. T. L. Edgar.
(7) Mr. Darling.
(8) Mr. d’Costa.
(9) Mr. Royston.
(10) Mr. Heywood.
(11) Mr. Denis Zaphiroy.
(12) Mr. Peter Logan.
(13) Mr. Pat Grunger.
(14) Mrs. Marks.
(15) Miss Betty Martin.
(16) Mr. Lehrer.
(17) Mrs. Lehrer.
(18) Miss Eglin.
(19) Mr. Daudi Mokinyo.
(20) Mr. Robert Savory.
(21) Mr. Niall Watson.
(22) Mr. Raphael.
(23) Miss J. Stephen.
(24) Mrs. W. Gunn.
(25) Mr. Matheka Mulinge.
(26) Mr. Muttiuki Mathai.
(27) Mr. Matheka Musan.
(28) Mr. Oladaru.
(29) Mr. R. G. Wilson.
(30) Mr. B. U. Middelboe.
(31) Mr. J. C. Stevenson-Hamilton.
(32) Mr. J. M. Swansion.
(33) Mr. G. A. Farrell.
(34) Miss Anne Sopper.
(35) Mr. Justus Ndeti.
(36) Mr. Mbondo Kaleli.
(37) Mrs. H. Meadows.
(38) Mr. J. A. Palfreman, O.B.E.

RIFT VALLEY PROVINCE—
(1) Miss Maud Parsons.

CENTRAL PROVINCE—
(1) Mr. Josephat Kahati.
(2) Mr. Erastus M’Thagata.
(3) Mr. Shah Mohammed.
(4) Mr. B. Makange.
(5) Mr. Karuki Kimunyi.

NYANZA PROVINCE—
(1) Mr. H. C. F. Wilks.
(2) Mr. H. M. Galton-Fenzi.
(3) Mr. W. W. Sturrock.
(4) Mr. J. M. L. Elliot.
(5) Chief Alfred Oguko.
(6) No. 1417 Sgt. Siliano.
(7) Constable William Miramba.
(8) Mr. Lucas Atiang.
(9) Mr. Hasham Hassan.
(10) Mr. Sam Abeko.
(11) Mr. Yacob Aman.
(12) Mr. Baruham Ibrahim.
(13) Mr. Patrick Omondi.
(14) Mr. P. J. R. Leyden.
(15) Mr. P. J. R. Saunders.
(16) Chief Thomas Otieno.
(17) Mr. Richard Onslow.
(18) Mr. Joseph Obiero.

CENTRAL GOVERNMENT—
(1) Miss K. Robinson.
(2) Mr. M. J. Roberts, M.C.
APPENDIX II

Reproduced below is a facsimile of the Certificate issued to those who gave outstanding assistance during the Famine Relief campaign.

CERTIFICATE

by

HIS EXCELLENCY SIR PATRICK MUIR RENISON,
Knight Commander of the Most Distinguished Order of Saint Michael and Saint George, Governor and Commander-in-Chief in and over Kenya

I hereby record the appreciation of the Government of the Colony and Protectorate of Kenya of the outstanding service rendered by

during the recent disasters caused by famine and flood

July, 1962

Governor and Commander-in-Chief
## APPENDIX III

**MAIZE MARKETING BOARD—FAMINE RELIEF, 1962**

*(In Bags of 200 lb.)*

### Receipts

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schedule &quot;A&quot;</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock Brought Forward</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38,478</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly Balance Brought forward</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65,687</td>
<td>49,739</td>
<td>25,264</td>
<td>59,022</td>
<td>34,949</td>
<td>14,900</td>
<td>46,354</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shipments Ex. U.S.A.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>105,142</td>
<td>21,021</td>
<td>54,251</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchases Ex. M.M.B.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>143,620</td>
<td>77,933</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>143,620</td>
<td>86,708</td>
<td>49,739</td>
<td>79,515</td>
<td>59,022</td>
<td>34,949</td>
<td>69,908</td>
<td>64,920</td>
<td>13,911</td>
<td>13,067</td>
<td>11,817</td>
<td>11,780</td>
<td>263,422</td>
</tr>
<tr>
<td><strong>Less—Schedule &quot;B&quot;</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>77,933</td>
<td>36,969</td>
<td>24,475</td>
<td>20,493</td>
<td>24,073</td>
<td>20,049</td>
<td>23,554</td>
<td>69,908</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stock Carried Forward</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65,687</td>
<td>49,739</td>
<td>25,261</td>
<td>59,022</td>
<td>34,949</td>
<td>14,900</td>
<td>46,354</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Schedule "B"

**Southern Province**

<table>
<thead>
<tr>
<th>Machakos</th>
<th>Kitui</th>
<th>Kajiado—Masai (includes Ngong and Narok)</th>
<th>Loitokitok</th>
<th>Ngong</th>
<th>Narok</th>
<th><strong>Requirements</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>52,710</td>
<td>1,134</td>
<td>(4,974, 3,785, 4,500)</td>
<td>500</td>
<td>114</td>
<td></td>
<td>75,038</td>
</tr>
<tr>
<td>18,470</td>
<td>3,858</td>
<td>3,000</td>
<td>400</td>
<td>112</td>
<td>225</td>
<td></td>
</tr>
<tr>
<td>3,585</td>
<td></td>
<td>2,000</td>
<td></td>
<td>220</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3,585</td>
<td></td>
<td></td>
<td></td>
<td>180</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Central Province</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kiambu</td>
<td>Meru</td>
<td>Embu</td>
<td>Fort Hall</td>
<td>Nyeri</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,400</td>
<td>1,909</td>
<td>465</td>
<td>1,809</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,540</td>
<td>335</td>
<td>1,829</td>
<td>1,829</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,700</td>
<td>167</td>
<td>3,221</td>
<td>2,635</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,467</td>
<td></td>
<td>2,33</td>
<td>1,95</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,740</td>
<td></td>
<td></td>
<td>730</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,227</td>
<td></td>
<td></td>
<td>300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Coast Province</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tana</td>
<td>Malindi</td>
<td>Kwale</td>
<td>Taita</td>
<td>Lamu</td>
<td>Kilifi</td>
<td></td>
</tr>
<tr>
<td>2,557</td>
<td>1,142</td>
<td>1,142</td>
<td>2,994</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,721</td>
<td>1,165</td>
<td>1,165</td>
<td>2,600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,075</td>
<td></td>
<td></td>
<td>993</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3,104</td>
<td></td>
<td></td>
<td>150</td>
<td>508</td>
<td>451</td>
<td></td>
</tr>
<tr>
<td>1,313</td>
<td></td>
<td></td>
<td>150</td>
<td></td>
<td></td>
<td>1,151</td>
</tr>
<tr>
<td>2,765</td>
<td></td>
<td></td>
<td>150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,755</td>
<td></td>
<td></td>
<td></td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>974</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3,779</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,163</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3,872</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### APPENDIX III—(Contd.)

#### REQUIREMENTS—(Contd.)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nyana Province</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>3,307</td>
<td></td>
<td>2,500</td>
<td>3,125</td>
<td></td>
<td>4,000</td>
<td>5,500</td>
<td></td>
<td>6,099</td>
<td>5,076</td>
<td>2,990</td>
<td>1,996</td>
<td>1,200</td>
</tr>
<tr>
<td>South</td>
<td></td>
<td>500</td>
<td>989</td>
<td>988</td>
<td>999</td>
<td>800</td>
<td>500</td>
<td></td>
<td>203</td>
<td>200</td>
<td>200</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Kericho</td>
<td></td>
<td>150</td>
<td>202</td>
<td>165</td>
<td>170</td>
<td>170</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nairobi E.P.D.</td>
<td>165</td>
<td>110</td>
<td>110</td>
<td>110</td>
<td>176</td>
<td>187</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>858</td>
</tr>
<tr>
<td><strong>Rift Valley Province</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baringo</td>
<td>1,895</td>
<td>1,207</td>
<td>1,007</td>
<td>998</td>
<td>1,455</td>
<td>2,200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nakuru</td>
<td></td>
<td>34</td>
<td>83</td>
<td></td>
<td>76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thomson's Falls</td>
<td></td>
<td>17</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naivasha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Pokot</td>
<td></td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Northern Province</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garissa</td>
<td>785</td>
<td>815</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkana</td>
<td>1,208</td>
<td>1,561</td>
<td>1,555</td>
<td>1,671</td>
<td>1,934</td>
<td>2,000</td>
<td>1,460</td>
<td>232</td>
<td>1,230</td>
<td>1,260</td>
<td>1,260</td>
<td>1,500</td>
<td>16,871</td>
</tr>
<tr>
<td>Mandera</td>
<td></td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air drops/Road Hauls</td>
<td>288</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>286</td>
</tr>
<tr>
<td><strong>Sub-Total (Famine only)</strong></td>
<td>77,933</td>
<td>36,969</td>
<td>24,475</td>
<td>20,493</td>
<td>16,988</td>
<td>20,049</td>
<td>21,739</td>
<td>18,566</td>
<td>13,911</td>
<td>13,067</td>
<td>11,817</td>
<td>11,780</td>
<td>287,687</td>
</tr>
<tr>
<td>M.M.B. Replacement..</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage/Transit Losses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Schedule “B”</strong></td>
<td>77,933</td>
<td>36,969</td>
<td>24,475</td>
<td>20,493</td>
<td>24,073</td>
<td>20,049</td>
<td>23,554</td>
<td>64,920</td>
<td>13,911</td>
<td>13,067</td>
<td>39,817</td>
<td>11,780</td>
<td>371,041</td>
</tr>
</tbody>
</table>
APPENDIX IV

TOTAL QUANTITIES ISSUED

<table>
<thead>
<tr>
<th>Description</th>
<th>Approx. Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOYA BEAN OIL</td>
<td>1,609 cartons</td>
</tr>
<tr>
<td>CHOPPED BEEF</td>
<td>3,333 cases</td>
</tr>
<tr>
<td>SPLIT PINTO BEANS</td>
<td>2,127 bags</td>
</tr>
<tr>
<td>MULTI-VITAMIN TABLETS</td>
<td>21 cartons</td>
</tr>
<tr>
<td>FOOD PREPARED CEREALS</td>
<td>285 cartons</td>
</tr>
<tr>
<td>VITAMINS</td>
<td>24 cartons</td>
</tr>
<tr>
<td>BABY FOOD</td>
<td>17 cases</td>
</tr>
<tr>
<td>DRUGS</td>
<td>4 tea chests</td>
</tr>
<tr>
<td>MILK POWDER</td>
<td>68 tins</td>
</tr>
<tr>
<td>MILK POWDER</td>
<td>1,200 bags</td>
</tr>
<tr>
<td>RICE</td>
<td>1,200 cases</td>
</tr>
<tr>
<td>YELLOW CORN</td>
<td>56 bags</td>
</tr>
<tr>
<td>DRY EDDIBLE BEANS</td>
<td>100 bags</td>
</tr>
<tr>
<td></td>
<td>712 bags</td>
</tr>
<tr>
<td></td>
<td>243 bags</td>
</tr>
</tbody>
</table>

APPENDIX V

PRINCIPLES ON WHICH FAMINE RELIEF WAS GIVEN

(Directive issued from the office of the Minister of State for Constitutional Affairs and Administration on 1st August, 1962)

The provision of famine relief supplies to drought and flood affected areas should be governed by the following considerations:

(a) There is a danger, now that we are in our second year of distributing famine relief on a wide basis, of creating a "famine relief mentality" and unconsciously starting up a new social service which no Government, Colonial or Independent, will be able to maintain. Nevertheless, the Government has an obligation in these matters which, in the simplest terms, is to see that life is maintained but only in the severest conditions should this be a Government responsibility as distinct from a family, clan or tribal responsibility. In short, when crops fail in an area the people should look in the first instance towards their own resources rather than to the Government. On the other hand, where the disaster is widespread and where there are no local resources, then the Government must step in. A case in point was that of the Masai in 1961 where the livestock herds were destroyed and where there was a real danger to the very existence of the people;

(b) Normally, famine relief should only be provided when local resources are exhausted or severely depleted, but a single poor harvest in a district is not in itself sufficient reason for putting large numbers of people on famine relief. In such circumstances, where the people have been accustomed to good crops in the past, they should be expected to use up their reserves, of either cash or food, in feeding themselves;

(c) In pastoral areas drought alone does not warrant the issue of free food and the Government should reasonably expect the local people to provide funds for their own support by the holding of stock sales of surplus animals. Account will be taken of an individual's need to preserve some capital for the future, particularly in the form of breeding stock. (I believe that stock sales are being held in the Kwale hinterland which is at present suffering from drought and where the animals are in good-condition, and this is precisely the first action which should be taken in such cases);

(d) Wherever it is necessary to issue free famine relief, work should be regarded as an essential requirement of all able-bodied adult males. Where there are jobs going in a district and people refuse to take them then famine relief should be stopped;

(e) Wherever possible communal work will be arranged against the issue of famine relief maize but normally such communal labour should be limited to able-bodied men since during periods of famine the women are usually better employed in looking after their families. In so far as able-bodied men are concerned, regard should be had to the conditions under which they are required to work, bearing in mind that the scale of famine relief may not be sufficient to feed a man who has to do a very exacting day's work;

(f) In distributing famine relief regard will be had to the ration scales laid down and approved by the Ministry of Health, but it must be recognized that such scales may be modified as required in accordance with the local availability of foodstuffs;

(g) The policy of the Government is not to accept responsibility through famine relief measures for an improvement over and above the general prevailing standards of nutrition which apply in normal years in the same areas. The long term improvement of dietary standards and scales is not a matter for this Office and out concern must be to maintain life during a period of local disaster.

2. In deciding upon eligibility for famine relief District Commissioners should make use of local Advisory Committees consisting of elders and others from the Locational Councils. It must be emphasized that these Committees can be no more than advisory and the final decision must rest with the District Commissioner, who will issue food according to availability.

3. Kenya is now expecting a maize surplus and for the sake of the country's economy we are going to use local maize for famine relief whenever possible rather than imported American A.I.D. maize. Kenya maize is obviously more expensive than free maize since we have to pay the export parity price and arrange delivery to district headquarters. As, however, we are to purchase local maize our funds will be severely stretched and it is imperative, therefore, that when District Commissioners indent for famine relief they should consider the quantities required most carefully in the light of (a) to (g) above. Indents for foodstuffs should be sent through Provincial Commissioners to reach headquarters at least 14 days in advance of the provisioning period.

This directive was endorsed by the National Food Relief Committee.

54
## Famine Relief Appeal Fund
### Statement of Account as at 30th November, 1962

<table>
<thead>
<tr>
<th>Receipts</th>
<th>Amount</th>
<th>Payments</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details</td>
<td>£ s. cts.</td>
<td>Details</td>
<td>£ s. cts.</td>
</tr>
<tr>
<td>Donations received from East Africa, the United Kingdom, the Commonwealth and Foreign Governments and Commonwealth and Foreign individuals</td>
<td>182,889 10 95</td>
<td>Purchase of Local Products</td>
<td>60,000 0 00</td>
</tr>
<tr>
<td>Sale of used food containers</td>
<td>2,022 0 05</td>
<td>Maize</td>
<td>20,463 5 32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Milk Products</td>
<td>22,198 4 48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meat Powder and Dried Meat</td>
<td>17,020 7 77</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vitaminized Edible Oil</td>
<td>19,000 0 00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ghee</td>
<td>2,136 14 23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fish</td>
<td>11,271 8 13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various types of seed for planting</td>
<td>262 15 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purchase of Vitamin Tablets, Bovest and Nicotinic Acid</td>
<td>1,073 0 90</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stationary, Postage, Bank Charges, Advertising and Miscellaneous Expenses</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grants—</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disaster Relief Fund</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coast Flood Fund</td>
<td>800</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R.C. Mission, Turkana—Field Expenses</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Salvation Army—Field Expenses</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Turkana—</td>
<td>175</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settlement at Fort Todenyang Fishing Camp</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sludge Pumps</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Boat</td>
<td>1,125</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Netting Twine</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stock Bonus Scheme</td>
<td>19,575 0 00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Turkana—</td>
<td>6,910 9 05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kajiado—</td>
<td>184,911 11 00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Seed</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agricultural Implements</td>
<td>6,910 9 05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stock Bonus Scheme</td>
<td>184,911 11 00</td>
</tr>
</tbody>
</table>

### Balance payable to the National Advisory Council on Nutrition | £ 184,911 11 00 |

### Notes
1. This statement is subject to Audit. The Balance of the Fund will be paid over on completion of the Controller and Auditor-General inspection.
2. £1,000 is still anticipated from the sale of Edible Oil Drums.
3. This statement does not include the numerous gifts in kind valued at £15,000 approximately nor the free food received from the American Government (A.I.D.) estimated at £3,206,000.

H. SLADE
Chairman, Famine Relief Appeal Fund.

P. W. SPENCER
Accountant, Office of the Minister of State for Constitutional Affairs and Administration.
## METEOROLOGICAL STATISTICS

### APPENDIX VII

**MONTHLY AND ANNUAL RAINFALL TOTALS COMPARED WITH PREVIOUS AVERAGES**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MACHAKOS D.C.</td>
<td>Total</td>
<td>343</td>
<td>404</td>
<td>511</td>
<td>589</td>
<td>707</td>
<td>815</td>
<td>929</td>
<td>1066</td>
<td>1181</td>
<td>1305</td>
<td>1458</td>
<td>1728</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>191</td>
<td>210</td>
<td>247</td>
<td>289</td>
<td>322</td>
<td>360</td>
<td>399</td>
<td>461</td>
<td>523</td>
<td>588</td>
<td>679</td>
<td>784</td>
</tr>
<tr>
<td>Kitui Boma</td>
<td>Total</td>
<td>226</td>
<td>312</td>
<td>379</td>
<td>459</td>
<td>485</td>
<td>500</td>
<td>548</td>
<td>609</td>
<td>672</td>
<td>707</td>
<td>784</td>
<td>829</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>161</td>
<td>223</td>
<td>295</td>
<td>354</td>
<td>383</td>
<td>401</td>
<td>448</td>
<td>505</td>
<td>563</td>
<td>605</td>
<td>682</td>
<td>730</td>
</tr>
<tr>
<td>Kajiado D.C.</td>
<td>Total</td>
<td>406</td>
<td>532</td>
<td>597</td>
<td>654</td>
<td>707</td>
<td>760</td>
<td>812</td>
<td>866</td>
<td>932</td>
<td>988</td>
<td>1050</td>
<td>1112</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>148</td>
<td>219</td>
<td>258</td>
<td>286</td>
<td>311</td>
<td>337</td>
<td>380</td>
<td>425</td>
<td>469</td>
<td>505</td>
<td>551</td>
<td>596</td>
</tr>
<tr>
<td>Loitokitok</td>
<td>Total</td>
<td>840</td>
<td>1056</td>
<td>1211</td>
<td>1318</td>
<td>1408</td>
<td>1494</td>
<td>1585</td>
<td>1683</td>
<td>1781</td>
<td>1887</td>
<td>1996</td>
<td>2118</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>185</td>
<td>234</td>
<td>283</td>
<td>324</td>
<td>362</td>
<td>401</td>
<td>448</td>
<td>499</td>
<td>548</td>
<td>598</td>
<td>649</td>
<td>700</td>
</tr>
<tr>
<td>Ngong P.C.</td>
<td>Total</td>
<td>155</td>
<td>187</td>
<td>221</td>
<td>254</td>
<td>289</td>
<td>288</td>
<td>332</td>
<td>369</td>
<td>392</td>
<td>405</td>
<td>418</td>
<td>437</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>454</td>
<td>43</td>
<td>29</td>
<td>25</td>
<td>20</td>
<td>18</td>
<td>17</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Narok METEOR. STN</td>
<td>Total</td>
<td>160</td>
<td>154</td>
<td>136</td>
<td>116</td>
<td>96</td>
<td>79</td>
<td>66</td>
<td>56</td>
<td>49</td>
<td>44</td>
<td>38</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>KIAMBU D.C.</td>
<td>Total</td>
<td>164</td>
<td>101</td>
<td>94</td>
<td>49</td>
<td>93</td>
<td>107</td>
<td>125</td>
<td>125</td>
<td>131</td>
<td>129</td>
<td>122</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>164</td>
<td>101</td>
<td>94</td>
<td>49</td>
<td>93</td>
<td>107</td>
<td>125</td>
<td>125</td>
<td>131</td>
<td>129</td>
<td>122</td>
<td>116</td>
</tr>
<tr>
<td>Limuru Marbrourke</td>
<td>Total</td>
<td>170</td>
<td>165</td>
<td>135</td>
<td>127</td>
<td>176</td>
<td>179</td>
<td>179</td>
<td>178</td>
<td>172</td>
<td>166</td>
<td>158</td>
<td>151</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>170</td>
<td>165</td>
<td>135</td>
<td>127</td>
<td>176</td>
<td>179</td>
<td>179</td>
<td>178</td>
<td>172</td>
<td>166</td>
<td>158</td>
<td>151</td>
</tr>
<tr>
<td>Kikuyu Station</td>
<td>Total</td>
<td>932</td>
<td>868</td>
<td>875</td>
<td>840</td>
<td>871</td>
<td>913</td>
<td>913</td>
<td>913</td>
<td>913</td>
<td>913</td>
<td>913</td>
<td>913</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>932</td>
<td>868</td>
<td>875</td>
<td>840</td>
<td>871</td>
<td>913</td>
<td>913</td>
<td>913</td>
<td>913</td>
<td>913</td>
<td>913</td>
<td>913</td>
</tr>
<tr>
<td>KIAMBU GITHINJURI</td>
<td>Total</td>
<td>628</td>
<td>700</td>
<td>756</td>
<td>844</td>
<td>967</td>
<td>1065</td>
<td>1165</td>
<td>1254</td>
<td>1306</td>
<td>1330</td>
<td>1384</td>
<td>1458</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>628</td>
<td>700</td>
<td>756</td>
<td>844</td>
<td>967</td>
<td>1065</td>
<td>1165</td>
<td>1254</td>
<td>1306</td>
<td>1330</td>
<td>1384</td>
<td>1458</td>
</tr>
<tr>
<td>EMBU D.C.</td>
<td>Total</td>
<td>232</td>
<td>273</td>
<td>277</td>
<td>237</td>
<td>224</td>
<td>216</td>
<td>215</td>
<td>207</td>
<td>199</td>
<td>187</td>
<td>165</td>
<td>142</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>232</td>
<td>273</td>
<td>277</td>
<td>237</td>
<td>224</td>
<td>216</td>
<td>215</td>
<td>207</td>
<td>199</td>
<td>187</td>
<td>165</td>
<td>142</td>
</tr>
<tr>
<td>Fort Hall D.C.</td>
<td>Total</td>
<td>266</td>
<td>207</td>
<td>189</td>
<td>182</td>
<td>162</td>
<td>139</td>
<td>127</td>
<td>116</td>
<td>107</td>
<td>98</td>
<td>87</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>266</td>
<td>207</td>
<td>189</td>
<td>182</td>
<td>162</td>
<td>139</td>
<td>127</td>
<td>116</td>
<td>107</td>
<td>98</td>
<td>87</td>
<td>78</td>
</tr>
<tr>
<td>Nyeri M.O.W.</td>
<td>Total</td>
<td>477</td>
<td>508</td>
<td>578</td>
<td>580</td>
<td>575</td>
<td>511</td>
<td>448</td>
<td>396</td>
<td>343</td>
<td>284</td>
<td>223</td>
<td>168</td>
</tr>
<tr>
<td></td>
<td>Avg.</td>
<td>477</td>
<td>508</td>
<td>578</td>
<td>580</td>
<td>575</td>
<td>511</td>
<td>448</td>
<td>396</td>
<td>343</td>
<td>284</td>
<td>223</td>
<td>168</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>-----</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>-------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td><strong>COAST PROVINCE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tana, Kipini Town</td>
<td>4.09</td>
<td>2.46</td>
<td>0.98</td>
<td>11.83</td>
<td>8.94</td>
<td>1.06</td>
<td>1.52</td>
<td>0.92</td>
<td>0.00</td>
<td>0.05</td>
<td>2.50</td>
<td>6.36</td>
<td>41.71</td>
</tr>
<tr>
<td>92-4000</td>
<td>0.99</td>
<td>0.27</td>
<td>1.38</td>
<td>4.95</td>
<td>13.70</td>
<td>5.19</td>
<td>3.02</td>
<td>1.61</td>
<td>2.00</td>
<td>1.87</td>
<td>2.42</td>
<td>3.25</td>
<td>40.85</td>
</tr>
<tr>
<td>Avg.</td>
<td>413</td>
<td>911</td>
<td>62</td>
<td>239</td>
<td>65</td>
<td>20</td>
<td>50</td>
<td>57</td>
<td>3</td>
<td>103</td>
<td>196</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Malindi District Office</td>
<td>0.60</td>
<td>0.09</td>
<td>4.06</td>
<td>1.94</td>
<td>14.17</td>
<td>2.32</td>
<td>2.48</td>
<td>1.87</td>
<td>0.70</td>
<td>0.31</td>
<td>0.00</td>
<td>1.47</td>
<td>30.01</td>
</tr>
<tr>
<td>93-4000</td>
<td>0.39</td>
<td>0.23</td>
<td>4.64</td>
<td>14.52</td>
<td>6.53</td>
<td>2.38</td>
<td>2.13</td>
<td>1.92</td>
<td>1.10</td>
<td>2.19</td>
<td>1.19</td>
<td>1.09</td>
<td>41.40</td>
</tr>
<tr>
<td>Avg.</td>
<td>204</td>
<td>193</td>
<td>356</td>
<td>67</td>
<td>127</td>
<td>20</td>
<td>44</td>
<td>16</td>
<td>12</td>
<td>32</td>
<td>27</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Kwale Agricultural Department</td>
<td>0.50</td>
<td>0.50</td>
<td>5.50</td>
<td>2.55</td>
<td>2.00</td>
<td>2.40</td>
<td>2.40</td>
<td>2.50</td>
<td>2.40</td>
<td>2.40</td>
<td>2.40</td>
<td>2.40</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.25</td>
<td>1.00</td>
<td>5.90</td>
<td>2.55</td>
<td>2.00</td>
<td>2.40</td>
<td>2.40</td>
<td>2.50</td>
<td>2.40</td>
<td>2.40</td>
<td>2.40</td>
<td>2.40</td>
<td></td>
</tr>
<tr>
<td>Avg.</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td></td>
</tr>
<tr>
<td>Taita, Wesi Hospital</td>
<td>0.50</td>
<td>0.50</td>
<td>5.50</td>
<td>2.55</td>
<td>2.00</td>
<td>2.40</td>
<td>2.40</td>
<td>2.50</td>
<td>2.40</td>
<td>2.40</td>
<td>2.40</td>
<td>2.40</td>
<td></td>
</tr>
<tr>
<td>93-3805</td>
<td>0.50</td>
<td>0.50</td>
<td>5.50</td>
<td>2.55</td>
<td>2.00</td>
<td>2.40</td>
<td>2.40</td>
<td>2.50</td>
<td>2.40</td>
<td>2.40</td>
<td>2.40</td>
<td>2.40</td>
<td></td>
</tr>
<tr>
<td>Avg.</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td></td>
</tr>
<tr>
<td>Lamu Meteorological Station</td>
<td>0.40</td>
<td>0.40</td>
<td>4.40</td>
<td>1.40</td>
<td>1.00</td>
<td>1.24</td>
<td>1.24</td>
<td>1.40</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td>92-4001</td>
<td>0.23</td>
<td>0.23</td>
<td>4.23</td>
<td>1.23</td>
<td>1.00</td>
<td>1.24</td>
<td>1.24</td>
<td>1.40</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td>Avg.</td>
<td>177</td>
<td>177</td>
<td>177</td>
<td>177</td>
<td>177</td>
<td>177</td>
<td>177</td>
<td>177</td>
<td>177</td>
<td>177</td>
<td>177</td>
<td>177</td>
<td></td>
</tr>
<tr>
<td>Kilifi District Office</td>
<td>0.10</td>
<td>0.10</td>
<td>1.10</td>
<td>0.10</td>
<td>0.00</td>
<td>0.18</td>
<td>0.18</td>
<td>0.20</td>
<td>0.18</td>
<td>0.18</td>
<td>0.18</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>93-3904</td>
<td>0.10</td>
<td>0.10</td>
<td>1.10</td>
<td>0.10</td>
<td>0.00</td>
<td>0.18</td>
<td>0.18</td>
<td>0.20</td>
<td>0.18</td>
<td>0.18</td>
<td>0.18</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>Avg.</td>
<td>102</td>
<td>102</td>
<td>102</td>
<td>102</td>
<td>102</td>
<td>102</td>
<td>102</td>
<td>102</td>
<td>102</td>
<td>102</td>
<td>102</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td><strong>NYANZA PROVINCE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kisumu Meteorological Station</td>
<td>0.42</td>
<td>0.42</td>
<td>4.42</td>
<td>1.42</td>
<td>1.00</td>
<td>1.24</td>
<td>1.24</td>
<td>1.40</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td>90-3425</td>
<td>0.23</td>
<td>0.23</td>
<td>4.23</td>
<td>1.23</td>
<td>1.00</td>
<td>1.24</td>
<td>1.24</td>
<td>1.40</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td>Avg.</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td></td>
</tr>
<tr>
<td>Homabay</td>
<td>0.33</td>
<td>0.33</td>
<td>3.33</td>
<td>1.33</td>
<td>1.00</td>
<td>1.24</td>
<td>1.24</td>
<td>1.40</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td>90-3429</td>
<td>0.33</td>
<td>0.33</td>
<td>3.33</td>
<td>1.33</td>
<td>1.00</td>
<td>1.24</td>
<td>1.24</td>
<td>1.40</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td>Avg.</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td></td>
</tr>
<tr>
<td><strong>NORTHERN PROVINCE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garissa</td>
<td>0.29</td>
<td>0.29</td>
<td>2.29</td>
<td>0.29</td>
<td>0.01</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.08</td>
<td>0.04</td>
<td>2.08</td>
<td>1.98</td>
<td>11.81</td>
</tr>
<tr>
<td>0.40</td>
<td>0.23</td>
<td>1.00</td>
<td>0.23</td>
<td>0.66</td>
<td>0.19</td>
<td>0.66</td>
<td>0.19</td>
<td>0.23</td>
<td>0.53</td>
<td>0.23</td>
<td>2.55</td>
<td>11.65</td>
<td></td>
</tr>
<tr>
<td>Avg.</td>
<td>204</td>
<td>193</td>
<td>356</td>
<td>67</td>
<td>127</td>
<td>20</td>
<td>44</td>
<td>16</td>
<td>12</td>
<td>32</td>
<td>27</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Lodwar</td>
<td>0.50</td>
<td>0.50</td>
<td>5.50</td>
<td>2.55</td>
<td>2.00</td>
<td>2.40</td>
<td>2.40</td>
<td>2.50</td>
<td>2.40</td>
<td>2.40</td>
<td>2.40</td>
<td>2.40</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Avg.</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td></td>
</tr>
<tr>
<td>Lokitaung</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>0.48</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Avg.</td>
<td>21</td>
<td>0</td>
<td>130</td>
<td>8</td>
<td>178</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>483</td>
<td>4</td>
<td>79</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td><strong>Rift Valley Province</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baringo, District Office</td>
<td>0.97</td>
<td>1.78</td>
<td>2.81</td>
<td>7.15</td>
<td>6.35</td>
<td>5.41</td>
<td>8.19</td>
<td>8.97</td>
<td>3.31</td>
<td>2.22</td>
<td>3.26</td>
<td>2.04</td>
<td>52.66</td>
</tr>
<tr>
<td>89-3520</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.68</td>
<td>0.01</td>
<td>2.96</td>
<td>5.69</td>
<td>12.93</td>
<td>4.47</td>
<td>8.22</td>
<td>6.44</td>
<td>3.77</td>
<td>2.71</td>
<td>1.53</td>
<td>0.89</td>
<td>52.30</td>
</tr>
<tr>
<td>Avg.</td>
<td>0.97</td>
<td>1.78</td>
<td>2.81</td>
<td>7.15</td>
<td>6.35</td>
<td>5.41</td>
<td>8.19</td>
<td>8.97</td>
<td>3.31</td>
<td>2.22</td>
<td>3.26</td>
<td>2.04</td>
<td>52.66</td>
</tr>
<tr>
<td>%</td>
<td>276</td>
<td>0</td>
<td>105</td>
<td>80</td>
<td>197</td>
<td>83</td>
<td>100</td>
<td>72</td>
<td>114</td>
<td>123</td>
<td>47</td>
<td>44</td>
<td>99</td>
</tr>
<tr>
<td>Nakuru Meteorological Station</td>
<td>1.35</td>
<td>1.21</td>
<td>1.94</td>
<td>4.52</td>
<td>4.30</td>
<td>2.95</td>
<td>3.67</td>
<td>4.19</td>
<td>3.09</td>
<td>3.10</td>
<td>4.61</td>
<td>2.20</td>
<td>37.13</td>
</tr>
<tr>
<td>90-36236</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.35</td>
<td>0.68</td>
<td>2.57</td>
<td>5.37</td>
<td>4.55</td>
<td>3.23</td>
<td>2.24</td>
<td>5.17</td>
<td>2.34</td>
<td>3.71</td>
<td>3.57</td>
<td>2.36</td>
<td>39.14</td>
</tr>
<tr>
<td>Avg.</td>
<td>1.35</td>
<td>1.21</td>
<td>1.94</td>
<td>4.52</td>
<td>4.30</td>
<td>2.95</td>
<td>3.67</td>
<td>4.19</td>
<td>3.09</td>
<td>3.10</td>
<td>4.61</td>
<td>2.20</td>
<td>37.13</td>
</tr>
<tr>
<td>%</td>
<td>248</td>
<td>56</td>
<td>132</td>
<td>197</td>
<td>106</td>
<td>109</td>
<td>61</td>
<td>123</td>
<td>76</td>
<td>120</td>
<td>77</td>
<td>107</td>
<td>105</td>
</tr>
<tr>
<td>Thomson's Falls</td>
<td>0.92</td>
<td>1.26</td>
<td>2.16</td>
<td>4.78</td>
<td>3.69</td>
<td>3.70</td>
<td>5.77</td>
<td>6.90</td>
<td>2.88</td>
<td>1.64</td>
<td>2.77</td>
<td>2.48</td>
<td>38.95</td>
</tr>
<tr>
<td>89-3622</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.24</td>
<td>0.09</td>
<td>3.07</td>
<td>3.87</td>
<td>6.33</td>
<td>3.09</td>
<td>4.42</td>
<td>5.95</td>
<td>4.90</td>
<td>1.90</td>
<td>4.07</td>
<td>1.80</td>
<td>41.73</td>
</tr>
<tr>
<td>Avg.</td>
<td>0.92</td>
<td>1.26</td>
<td>2.16</td>
<td>4.78</td>
<td>3.69</td>
<td>3.70</td>
<td>5.77</td>
<td>6.90</td>
<td>2.88</td>
<td>1.64</td>
<td>2.77</td>
<td>2.48</td>
<td>38.95</td>
</tr>
<tr>
<td>%</td>
<td>243</td>
<td>7</td>
<td>142</td>
<td>81</td>
<td>171</td>
<td>83</td>
<td>77</td>
<td>86</td>
<td>170</td>
<td>116</td>
<td>147</td>
<td>73</td>
<td>107</td>
</tr>
<tr>
<td>Naivasha District Office</td>
<td>0.81</td>
<td>1.38</td>
<td>2.33</td>
<td>4.20</td>
<td>3.35</td>
<td>1.61</td>
<td>1.30</td>
<td>1.74</td>
<td>1.75</td>
<td>1.82</td>
<td>2.32</td>
<td>1.41</td>
<td>24.02</td>
</tr>
<tr>
<td>90-3602</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.72</td>
<td>0.59</td>
<td>2.14</td>
<td>5.90</td>
<td>5.98</td>
<td>0.97</td>
<td>0.14</td>
<td>1.70</td>
<td>1.52</td>
<td>2.41</td>
<td>1.32</td>
<td>2.25</td>
<td>27.74</td>
</tr>
<tr>
<td>Avg.</td>
<td>0.81</td>
<td>1.38</td>
<td>2.33</td>
<td>4.20</td>
<td>3.35</td>
<td>1.61</td>
<td>1.30</td>
<td>1.74</td>
<td>1.75</td>
<td>1.82</td>
<td>2.32</td>
<td>1.41</td>
<td>24.02</td>
</tr>
<tr>
<td>%</td>
<td>459</td>
<td>43</td>
<td>92</td>
<td>119</td>
<td>179</td>
<td>60</td>
<td>11</td>
<td>98</td>
<td>87</td>
<td>132</td>
<td>57</td>
<td>160</td>
<td>115</td>
</tr>
<tr>
<td>West Pokot (Kapenguria)</td>
<td>1.39</td>
<td>0.00</td>
<td>1.36</td>
<td>3.05</td>
<td>9.25</td>
<td>3.12</td>
<td>9.48</td>
<td>5.80</td>
<td>6.67</td>
<td>2.67</td>
<td>3.57</td>
<td>0.70</td>
<td>47.06</td>
</tr>
<tr>
<td>88-3504</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.39</td>
<td>0.00</td>
<td>1.36</td>
<td>3.05</td>
<td>9.25</td>
<td>3.12</td>
<td>9.48</td>
<td>5.80</td>
<td>6.67</td>
<td>2.67</td>
<td>3.57</td>
<td>0.70</td>
<td>47.06</td>
</tr>
<tr>
<td>Avg.</td>
<td>0.59</td>
<td>1.17</td>
<td>2.88</td>
<td>5.99</td>
<td>7.78</td>
<td>5.20</td>
<td>7.47</td>
<td>7.94</td>
<td>4.22</td>
<td>3.16</td>
<td>2.28</td>
<td>1.19</td>
<td>49.86</td>
</tr>
<tr>
<td>%</td>
<td>236</td>
<td>0</td>
<td>47</td>
<td>51</td>
<td>119</td>
<td>60</td>
<td>127</td>
<td>73</td>
<td>158</td>
<td>84</td>
<td>157</td>
<td>59</td>
<td>94</td>
</tr>
</tbody>
</table>