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THE FOOD ECONOMIES OF URBAN MIDDLE AFRICA: THE CASE OF GHANA*

One of the most striking features in the recent course of Middle African development has been the growth of urban centers. Encouraged by great improvements in communications, enlarged investment, and the increasingly commercialized character of African life, many cities here have doubled, tripled, or even quadrupled in size since World War II. This is not to suggest that Middle Africa is as yet anything like an urbanized region. At midcentury this vast area was thought to contain only 108 cities with populations in excess of 20,000, and these centers together accounted for only about five per cent of the region's 122 million people (*6*, pp. 131–32, Map 41, Table D). But, as a comparison of the prewar and postwar population estimates given in Table 1 makes clear, a strong movement of people to the cities is definitely under way, and it is accelerating rapidly.

Urbanization within the African milieu poses a multitude of problems, not the least of which relates to food supplies. African food farming is still an extremely primitive operation. Until very recently excluded from the assistance programs of most governments, it has changed but slightly with time. The hoe persists as the principal implement, and shifting cultivation is still almost exclusively relied upon for fertility maintenance. To such a system, obviously, a growing population of town dwellers presents a major challenge. Not only will the needs of an increasing number of nonself-suppliers have to be met by a re-

* The present study is one of several prepared under the sponsorship of the Human Environments in Middle Africa project of the National Academy of Sciences—National Research Council. Following the definition agreed upon by the senior staff of that project, "Middle Africa" is taken here to mean that portion of the continent which has as its southern limit the southern boundaries of Tanganyika and the Congo (excluding Katanga) and which extends north to include Ethiopia, the Sudan, and all of the former French West African territories save Mauritania. So defined, it refers to that portion of tropical Africa which is still primarily agricultural, most of the countries or regions with major mining or industrial sectors having been excluded.

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TABLE 1.—MIDDLE AFRICA: PREWAR AND POSTWAR POPULATION OF SELECTED CITIES*

(*Thousand persons*)

City	Territory	Prewar[a]	Postwar[a]
Abidjan	Ivory Coast	10 (1931)	128 (1955)
Addis-Ababa	Ethiopia	150 (1939)	400 (1952)
Bangui	Ubangi-Shari	14 (1937)	85 (1957)
Brazzaville	Middle Congo	40 (1937)	99 (1957)
Dakar	Senegal	93 (1936)	231 (1955)
Dar-es-Salaam	Tanganyika	33 (1931)	99 (1952)
Freetown	Sierra Leone	55 (1931)	77 (1956)
Ibadan	Nigeria	387 (1931)	459 (1952)
Kano	Nigeria	89 (1931)	130 (1952)
Khartoum	Sudan	45 (1938)	93 (1956)
Lagos	Nigeria	126 (1931)	312 (1956)
Leopoldville	Belgian Congo	36 (1938)	300 (1955)
Monrovia	Liberia	10 (1938)	41 (1956)

* Data for postwar years from United Nations (UN), Dept. Econ. and Soc. Aff., *Demographic Yearbook, 1957* (1957), pp. 150–51, except for Bangui for which estimate is from French Equatorial Africa, High Commis., *L'A.E.F. Economique et Sociale 1947–1958* (Brazzaville, 1959), p. 8. Prewar data from Walter Yust, ed., *Encyclopaedia Britannica World Atlas* (prepared by G. D. Hudson, Chicago, 1942), pp. 182–211, except for Abidjan which is from B. F. Johnston, *The Staple Food Economies of Western Tropical Africa* (Stanford, Calif., 1958), p. 5. As most African population estimates are notoriously unreliable, the foregoing statistics must be accepted only with reservation.

[a] Figures in parentheses are the year of census or estimate.

duced number of growers, and the means adapted through which foodstuffs may be moved considerable distances at reasonable costs: at the same time per capita demand will in all likelihood increase. One of the familiar features of economic development is a change in dietary patterns (*3*, pp. 224–25). As income levels in the cities rise, more and more people will be able to afford foodstuffs in greater quantities and of a "preferred," more expensive type.

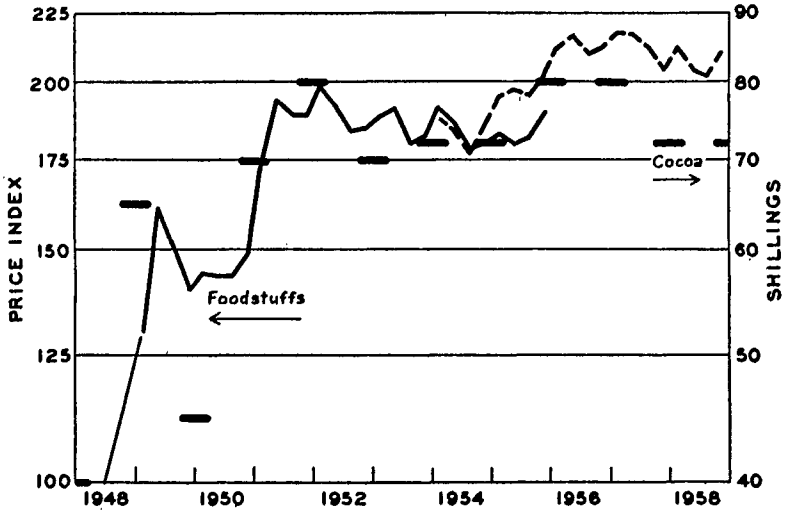
Whether this challenge can be met without sizable imports from more advanced regions is a much debated question. Though several closely documented studies have recently suggested that African agriculture is much more viable than it was once thought to be (cf. *27, 28*), the consensus remains none too optimistic. Indeed, the postwar period has witnessed a rash of almost panicky "Grow-More-Food" campaigns and price-fixing schemes intended to stimulate production.

As an example of this general feeling of apprehension, one may cite the reaction to a series of sharp increases in urban food prices which occurred about a decade ago in Ghana,[1] the country with which we shall be concerned here. Though at least partially cognizant of the special circumstances which underlay these rises, one party of visiting economists interpreted them as clear evidence that "the production of food for market has not increased fast enough to meet the enormous increases in demand associated with growing population, rising

[1] Though Ghana did not become an independent state and adopt that name until March 1957, I shall not labor the point by calling it the Gold Coast in references to the period when it was actually so designated.

CHART 1.—GHANA: INDEX OF RETAIL PRICES OF LOCALLY PRODUCED FOODSTUFFS IN SEVEN CITIES, AND PRODUCER PRICE OF COCOA, 1948–1958*

(Av. 1948 = 100; shillings per 60-lb. load; logarithmic vertical scale)



* Retail price index is a composite of indices for Accra, Kumasi, Sekondi-Takoradi, Tarkwa, Tamale, Keta, and Ho weighted according to their populations in 1948. In 1954 a new index using a revised market basket was begun with that year as the base period; here it has been related to the older one using 1954 as the year of comparison. Quarterly data for 1949–51 from Dudley Seers and C. R. Ross, *Report on Financial and Physical Problems of Development in the Gold Coast* (Accra, 1952), p. 23; for 1952 from Gold Coast, Min. Fin., *Economic Survey, 1953* (1954), p. 19; for 1953–58 from Gold Coast (or Ghana), Off. Govt. Stat., (*Quarterly*) *Digest of Statistics* (various issues).

Cocoa prices are fixed prices paid by the Cocoa Marketing Board for a 60-lb. load of Grade I and II dry beans at collecting stations during the September–March primary crop buying season. 1947/48–1954/55 prices from Gold Coast, Dept. Agr., *Annual Report . . .* (various issues); 1955/56–1958/59 prices from Ghana, Min. Fin., *Economic Survey* (various issues).

money incomes and the rapid growth in the number of people working in the towns" (*38*, p. 23).

Food prices in Ghana are closely related to the price paid producers for cocoa. This relationship, illustrated graphically in Chart 1, exists for several reasons, the most important being the dominant role cocoa plays in the economy.[2] Regularly accounting for over two-thirds of the country's exports, it is by far the most important source of Ghana's wealth. If cocoa prices are high there is prosperity, if they are low, depression; and the prices of other items, foodstuffs included, respond accordingly. Indeed, it is reported that in many parts of the country the cocoa price is used directly as a yardstick, other prices being adjusted immediately following announcement of the price to be paid by the Cocoa Marketing Board (*38*, p. 23). Thus it was in 1948/49, albeit to an unprecedented extent. In that year the Board announced that the price to producers would be increased from

[2] Involved also is the fact that, unlike their Nigerian opposite numbers, a majority of Ghana's cocoa farmers grow most of their own food (*27*, p. 16). In years when cocoa prices are particularly favorable, however, they tend to slight their food plots, preferring instead to buy for cash—thereby both heightening demand and reducing supplies. This happened in both 1948/49 and 1950/51 (*38*, pp. 21–25).

40 shillings per 60-pound load to 65 shillings. Food prices quickly followed suit, rising according to the newly devised urban food price index by 45 per cent during the year. Although the following season witnessed a slight decline—the cocoa price having been reduced to 45 shillings—the same chain of events was repeated in 1950/51. Following an increase in the cocoa price to 70 shillings (the effects of which were reinforced by an attack of rust which severely damaged the maize crop) food prices rose again, this time climbing to a level almost double that which prevailed in 1948.

Coming so quickly in succession, these two steep rises in the prices urban consumers were compelled to pay for their foodstuffs created a great deal of official as well as private anxiety, particularly as they occurred at a time when the authorities were already faced with considerable civil unrest in the cities. Especially alarmed was the Department of Agriculture, which voiced in its report for 1949/50 the fear "that if something were not done the country would be faced with a chronic food shortage and greatly inflated prices" (*15*, p. 3).

Such extreme fears would seem to have been at least temporarily allayed by the situation since 1950/51. As Chart 1 indicates, urban food prices have been reasonably stable (save for one general rise following an increase in the cocoa price in 1955/56), while the Department of Agriculture has repeatedly expressed its satisfaction with the over-all level of food production (cf. *11*, p. 3). Nonetheless, gloomy inferences continue to be drawn from the experiences of 1948/49 and 1950/51. Writing in 1954, for instance, F. J. Pedler remarked on the wide seasonal variations in the prices individual foodstuffs commanded in Ghana's cities in 1950/51 (*35*, p. 51), noting among others the following (in shillings per hundredweight):

Foodstuff	Accra			Kumasi			Sekondi-Takoradi		
	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
Maize	81	26	50	62	25	43	89	27	54
Rice	89	72	82	84	72	80	95	76	86
Yams	50	32	40	36	19	27	—	—	—
Manioc	22	9	15	8	4	6	10	6	7
Cocoyams	37	23	31	23	13	19	31	21	25

Such sharp variations, he concluded, could only be "an indication that too little food is produced to meet the needs of the people through the year. Traders know this, and they buy food at harvest time to hold it until prices rise. They are often blamed for high prices and scarcity, but their action is the result of shortage, not the cause of it" (*35*, p. 51).

It is difficult either to defend or refute reasoning such as this with certainty. In many respects Africa is still the Dark Continent; the economist, particularly, is confronted with an extreme paucity of evidence on which to apply the tools of his trade. About the price elasticity of food production, so vital to the long-run question of urban provisionment, for instance, next to nothing is known; and so it is throughout most of the economic spectrum. Given such a situation, manifestly, the first steps forward must hinge not on unsupported though incisive opinion, but rather on exploratory descriptive outlines. It was with this in mind that the present study was undertaken. How wide an area do African

cities presently draw on for their food supplies? What is the make-up of urban diets? And what changes in consumption patterns occur seasonally and with rises in income? Light must be shed on these and related questions before reasoned attempts are made to see into the future.

The choice of Ghana for detailed study warrants explanation. Inquiries into the economics of Middle Africa have typically been of two general types: macrostudies dealing with a particular economic problem on a continental basis, and microstudies examining economic phenomena in so far as they bear on the social structure of a particular tribe or people. The present inquiry was originally conceived as being of the first type. A thorough review of the available evidence soon suggested, however, that the time was not yet ripe. Although food-consumption sample surveys are now available for a sizable number of urban centers,[8] complementary evidence on the supply side remains excessively sketchy. Apart from Ghana, the only country for which any reasonably complete picture of supply characteristics can be built up is Nigeria, and here one is obliged to depend chiefly on railroad statistics, which throw light only on long-distance movements. Favoring Ghana, moreover, was the number of consumption surveys available for its cities. Surveys of this type, and by African standards good ones, have been carried out in all three of its principal cities, a situation equaled elsewhere in Middle Africa only in Senegal and Uganda.

The study falls into three main sections. The food-consumption characteristics of Ghana's urban dwellers form the subject matter of the second of these; the supply side is taken up in the third. Preceding them is a brief description of Ghana, its agricultural resources, and its chief cities.

GHANA

Economically, Ghana ranks among the more advanced countries of Middle Africa; in fact, it is probably the most advanced if territories with substantial European settlement are excluded from consideration. Far and away the world's largest producer and exporter of cocoa (a position held since 1913), it is also the home of a major mining industry. Gold has been mined by European concerns for over 80 years, while more recently the country has become one of the principal suppliers of industrial diamonds and manganese. All this has made for a relatively high level of investment, both private and public, and a fairly high level of living. The stock of overhead capital facilities, such as railways and roads, is among the most complete on the continent, while, according to estimates published by the United Nations, gross output per capita (the equivalent of $194 [U.S.] in 1957) is exceeded in subsaharan Africa only in the Union of South Africa (*42*, p. 15).

This is not to say, of course, that Ghana has as yet passed beyond the first stages on the path to sustained economic growth. Despite impressive gains in the extractive and mercantile sectors, the economy remains predominantly agricultural. In 1948, the most recent year for which complete census statistics are available, almost three-quarters of the adult male population still depended di-

[8] Namely: Abidjan, Accra, Dakar, Dar-es-Salaam, Enugu, Freetown, Ibadan, Jinja, Kaduna, Kampala, Kumasi, Lagos, Leopoldville, Nairobi, Saint-Louis, Sekondi-Takoradi, Thies, and Zaria.

rectly and exclusively on farming for its livelihood (*18,* p. 370). Moreover, a substantial fraction of the peasantry is still made up of subsistence growers participating little, if at all, in the national economy. Development and underdevelopment are relative things. Although in the forefront as far as tropical Africa is concerned, Ghana's economy is nonetheless primitive indeed.

Agricultural Resources[4]

Like Caesar's Gaul, Ghana is divided into three parts—three major and sharply contrasting natural regions which reflect in turn differences in vegetation and in climate (Map 1). They are the Northern Savanna, the Forest, and the Coastal Savanna. Of these, the largest by far is the Northern Savanna, comprising about two-thirds of the country's area. Rainfall here is relatively low—averaging almost everywhere less than 50 inches—and is restricted to one clearly defined rainy season (March–October). During the remaining four months of the year the hot, desiccating harmattan winds from the northeast prevail, and the region turns exceedingly dry. As a consequence of this brief but intense aridity, the natural cover is typically a more or less continuous carpet of short grasses with occasional stunted trees intermixed.

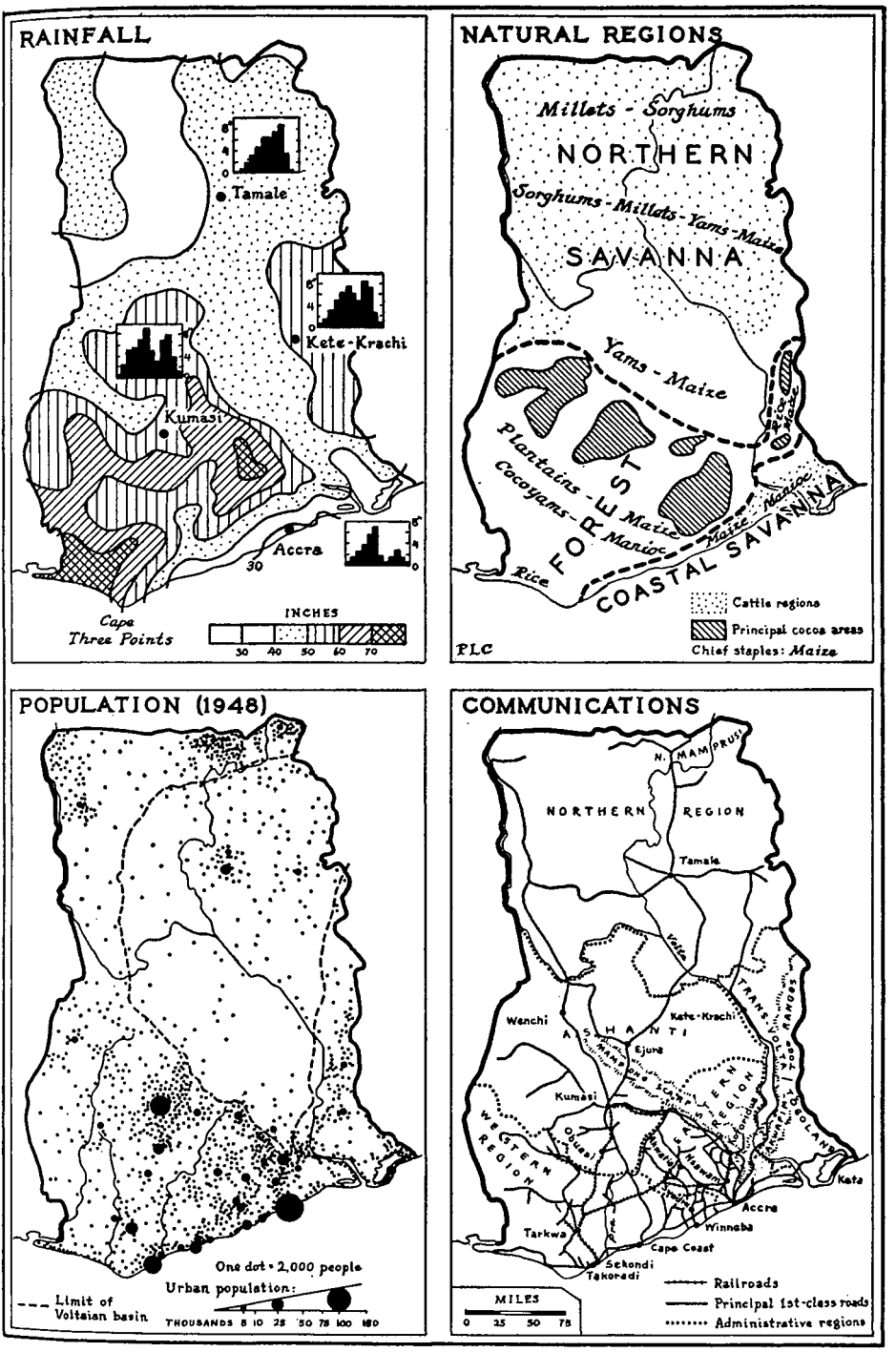
The Northern Savanna is the least advanced section of Ghana. It is also the least densely populated; with something like 1.8 million inhabitants (according to provisional findings of the 1960 census), the zone contains only slightly over a quarter of the country's 6.7 million people (*13,* p. 1). This low density primarily mirrors a poverty of soil resources. Most of the area falls within the Voltaian Basin, a rather featureless depression underlaid by porous sandstone. The soils derived from this material are generally shallow and infertile and have little moisture-retaining capacity. During the harmattan season they tend to dry out rapidly and form a hardpan, whereas during the rainy period they are subject to heavy surface runoff. It is in the area of these soils that population densities are the lowest, averaging for the most part less than 15 persons per square mile. Only in the peripheral plateau sections of the Northern Savanna, where soils of granitic origin prevail, are densities comparable to those found to the south. The extreme example is the northern portion of Mamprusi District. Here are concentrated almost half the inhabitants of the Northern Region,[5] the density in places exceeding 200 per square mile.

[4] In writing this section I have relied heavily on the two recent geographies of Ghana: W. J. Varley and H. P. White, *The Geography of Ghana* (London, 1958); and E. A. Boateng, *A Geography of Ghana* (Cambridge, 1959).

[5] So many changes have taken place in the last several years with respect to the names and boundaries of Ghana's administrative regions that it is necessary that the various ones recognized in this article be clearly identified. Under British rule the Gold Coast was originally made up of three divisions: the Gold Coast Colony, Ashanti, and the Northern Territories. Following the first World War Togoland was added as a League of Nations mandate, the southern portion being administered through the Colony, the northern section through the Northern Territories. Except for the formation of Trans-Volta/Togoland in 1952, this structure remained unchanged until the country received its independence in March 1957. Under the new constitution five regions were recognized: the Northern Region (the Northern Territories plus the northern half of Togoland); Ashanti (retaining its former boundaries); the Western Region (the western half of the Colony); the Eastern Region (the eastern portion of the Colony save that part which lay east of the Volta); and the Trans-Volta/Togoland Region (southern Togoland plus the section of the Colony east of the Volta). The limits of these five regions were as shown in Map 1.

This structure lasted only two years. By the end of 1958 the constitution of 1957 had been heavily amended and the Government's "federalist" opponents almost completely silenced. In April 1959 the northern and western portions of Ashanti, their former stronghold, were detached (to-

MAP 1.—GHANA: PRINCIPAL FEATURES*



* Rainfall, natural regions, and communications adapted from E. A. Boateng, *A Geography of Ghana* (Cambridge, 1959), pp. 33, 34, 63, 119; population distribution after W. J. Varley and H. P. White, *The Geography of Ghana* (London, 1958), p. 274.

Agriculture in the Northern Savanna is characterized by the rearing of livestock and the cultivation of those annual crops which can either mature before the onset of the dry season or are relatively resistant to it. In the zone's northern portions this almost exclusively implies the millets and sorghums. It is difficult to overemphasize the importance of these grains here; a detailed survey of farms in northern Mamprusi revealed that over 90 per cent of the cultivated land was planted to them (*30,* p. 22). As one moves south, and rainfall becomes higher and more evenly distributed, other crops begin to appear, notably yams, maize, and peanuts. South of the Volta the predominance of the millets and sorghums gives way altogether, their place being taken by yams, maize, and, to a lesser but increasing extent, manioc. Yam production is especially intense along the borders of the Forest zone, this more densely covered transition belt offering near ideal conditions for the crop.

With few exceptions, farming in the Northern Savanna is a subsistence operation; and where movements of foodstuffs take place they are chiefly to satisfy local needs. The only exports of consequence to the more populous and prosperous southern parts of the country are livestock and yams. Cattle come principally from the northern portions of the zone (which adjoin the rich cattle area of Upper Volta), while the southern portions provide most of the yams. Particularly around Wenchi, Ejura, and Kete-Krachi the production of yams for sale is pushed vigorously. As we shall see later, a large fraction of the yams consumed in the cities of the south comes from these regions.

Succeeding the Northern Savanna to the south is the second of Ghana's three major natural regions, the Forest zone. This is the principal source of the country's wealth. Here is grown the cocoa—about one-third of the world's total output—which so dominates the Ghanaian economy. And here too are found most of the mineral resources: gold, around Tarkwa and Obuasi; diamonds in the vicinity of Akwatia; and manganese, again in the neighborhood of Tarkwa. Over half of the population—about 3.6 million people in 1960—is concentrated in this zone (*13,* p. 1). Unlike the Northern Savanna, this region is relatively well provided with both rail and road facilities.

The Forest is a zone of high rainfall. Annual precipitation averages between 50 and 70 inches over most of the area, with portions of the southwest receiving more than 80 inches. The seasonal distribution is that of the intertropical convergence zone: two rainy periods (March–July and September–November) separated by brief dry seasons. In its topographic aspect the area is comparatively high and broken, its northern boundary being a line of hills (the Mampong scarp in Ashanti, the Akwapim-Togo ranges to the east) rising about 1,500 feet above the Voltaian Basin. This surface configuration has an important influence on the region's climate. Acting as a barrier against the harmattan winds which

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gether with a small segment of the Northern Region) and formed into the Brong-Ahafo Region. Further changes were made effective July 1960: the Western Region was divided into the Central and Western Regions: the Northern Region into the Northern and Upper Regions; and Trans-Volta/Togoland was renamed the Volta Region.

In this study the various regions are referred to as they were constituted in 1957 and 1958. I do this mainly because the data collected in the 1957/58 Produce Movement Census (on which I draw heavily in the final part of the paper) had this structure as their basis. To do otherwise would result in a superabundance of footnotes and no small confusion for the reader.

sweep down from the north, it sharply limits the intensity of the dry seasons and has favored the growth of storied, semideciduous forest. (Man's action has, however, reduced much of this cover to low forest and secondary bush.)

As in the Savanna to the north, the production of food crops in the Forest is characterized by shifting cultivation. Clearing and burning prepare the land for cropping, and a given plot is exploited on a temporary basis. After only one, two, or, at the most, three years, a combination of weed intrusion and fertility exhaustion reduces yields to an uneconomic level and forces abandonment; a new plot is then cleared, while the previous one is returned to "bush fallow." But beyond adherence to this basic system there is little similarity in the agriculture of the two zones. In the Northern Savanna production is closely geared to the seasons, with planting taking place at the beginning of the rains each spring and harvesting being done in November and December. In the Forest, on the other hand, year-round cultivation is practicable. Accordingly, a wide variety of perennials as well as annuals can be grown: cocoa, plantains, bananas, kolas, oil palms, manioc, cocoyams, maize, rice, and yams, to mention the most important.

In contrast to the Northern Savanna, where individual or small clusters of dwellings are often widely dispersed, most of the Forest people live in comparatively large villages, with their compounds grouped closely together. Generally surrounding the village is a more or less continuous belt of small vegetable gardens, beyond which lie, helter-skelter, the farm clearings proper. Except for cocoa and rice, which are commonly grown alone, mixed agriculture prevails here, several crops that reach maturity at different times of the year being planted in the same plot. With a new clearing the cycle begins in late March or early April. In a typical sequence maize and manioc are then planted, to be followed a month or so later by plantains and cocoyams. The brief dry period centered in August sees the early maize collected, and often a second crop planted. October–December is the main harvest season. Plantains and cocoyams, however, are gathered almost continuously, as is manioc, which can be harvested as required. As a result food is plentiful throughout the year; so plentiful in fact that manioc and cocoyams, which are generally considered "inferior" foods, are frequently treated as reserve crops and often only partially harvested (*43,* pp. 89–90).

Some impression of the relative importance of the various food crops grown in the Forest is to be had from the area estimates published for 1950 by the Department of Agriculture (*11,* p. 32). In preparing these estimates both political and natural boundaries were respected, except that in Ashanti the forested and savanna portions were not distinguished; the Forest, accordingly, is best represented by that part which falls within the former Gold Coast Colony (the Eastern and Western Regions plus the southern quarter of Trans-Volta/Togoland). Here plantains are eminently the most important crop in terms of acreage, occupying 43 per cent of the area reported in the major staples. Next come cocoyams with 27 per cent, followed by maize and manioc, accounting for 16 and 10 per cent respectively. Yams and rice together were thought to take up no more than 4 per cent of the total. The Forest is by no means a homogeneous area, however, and though this general ranking is probably valid for the zone taken as a whole,

there are marked differences in local cropping. Rice, for instance, is a key crop in the very moist southwestern corner of the zone, as it is in the forested area which extends across the Volta into southern Togoland; indeed in the latter area the 1950 estimates have it occupying a quarter of the land in staple foods.

The importance of food-crop production for sale in outside markets also varies considerably within the zone. Though commercial participation by food farmers in the Forest is almost everywhere greater than in the Northern Savanna, it is greatest in the closely settled portions near the larger towns. These areas commonly enjoy a distinct competitive advantage, notwithstanding the fact (to be brought out later) that the larger centers draw their food supplies from considerable distances. Not only are they nearer the final markets; they also enjoy superior road facilities. Particularly in the densely peopled southeastern corner of the Forest between the Pra and Volta rivers (especially in the Swedru-Nsawam-Koforidua sector, where the effects of Swollen Shoot disease have been most heavily felt by cocoa farmers) and within a radius of about 30 miles of Kumasi, production of food crops for the market accounts for a substantial share of total output. In contrast, many of the more distant sections of Ashanti and the Western Region contain extensive tracts of excellent farm land which are exploited entirely on a subsistence basis.

The third and smallest of Ghana's natural regions is the Coastal Savanna. Reflecting the dry conditions which obtain along the West African coast east of Cape Three Points, this zone, with its scrubby vegetation, presents a sharp contrast to the adjacent forest. West of Accra it is confined to a narrow strip never more than 10 to 15 miles wide; but to the east it broadens out to embrace a comparatively wide plain. With a population of about 1.3 million, it is the most densely settled of the three regions. Including as it does both Accra and Sekondi-Takoradi, the country's chief ports and first- and third-ranking cities, it is also the most urbanized. According to preliminary returns from the 1960 census, these centers, together with Cape Coast, Winneba, and Keta, contain well over a third of the inhabitants of the region (*13*, p. 1).

The Coastal Savanna's only important resource is its location. Strategically situated between the Forest and outside markets, it has historically offered attractive opportunities for trade and settlement. Agriculturally, its capabilities are quite limited. Rainfall is the lowest in the country, averaging between 30 and 40 inches. Nonetheless, several factors combine to make production somewhat more flexible than in the Northern Savanna. Precipitation, in the first place, is more evenly distributed over the year, following the bi-modal pattern found in the Forest, while seasonal aridity is less intense, the full effect of the harmattan being avoided.

Two crops, maize and manioc, completely dominate agriculture in the Coastal Savanna, occupying, according to the estimates of the Department of Agriculture, 47 and 43 per cent, respectively, of the land in staple foods (*11*, p. 32). Though both crops do well here (they are about the only staple crops that do), manioc is the more widely dispersed. Tolerant of both poor soils and drought, it is almost the sole crop of the dry, overcropped plains around Accra. Maize, on the other hand, has slightly higher moisture requirements and is chiefly found in the more humid portions behind Keta and along the escarpments which border the

plain on the north and which coincide with the beginning of the Forest. In these regions two crops a year are possible. In contrast to the Forest, where the tsetse fly limits the livestock population to sheep, goats, and fowl, cattle are also raised in the Coastal Savanna. They are kept more for prestige purposes than for sale, however, and slaughterings are limited (*44,* p. 77).

As would be expected in view of the semiurban and mercantile character of the Coastal Savanna, food crop production here has become increasingly commercialized. Along the roads leading into the principal towns especially, market cropping of both vegetables and staple foods is a major industry. The zone is, however, capable of meeting only a fraction of the needs of these centers; and, as we shall see below, they rely heavily on the Forest and beyond for their food supplies.

Urbanization

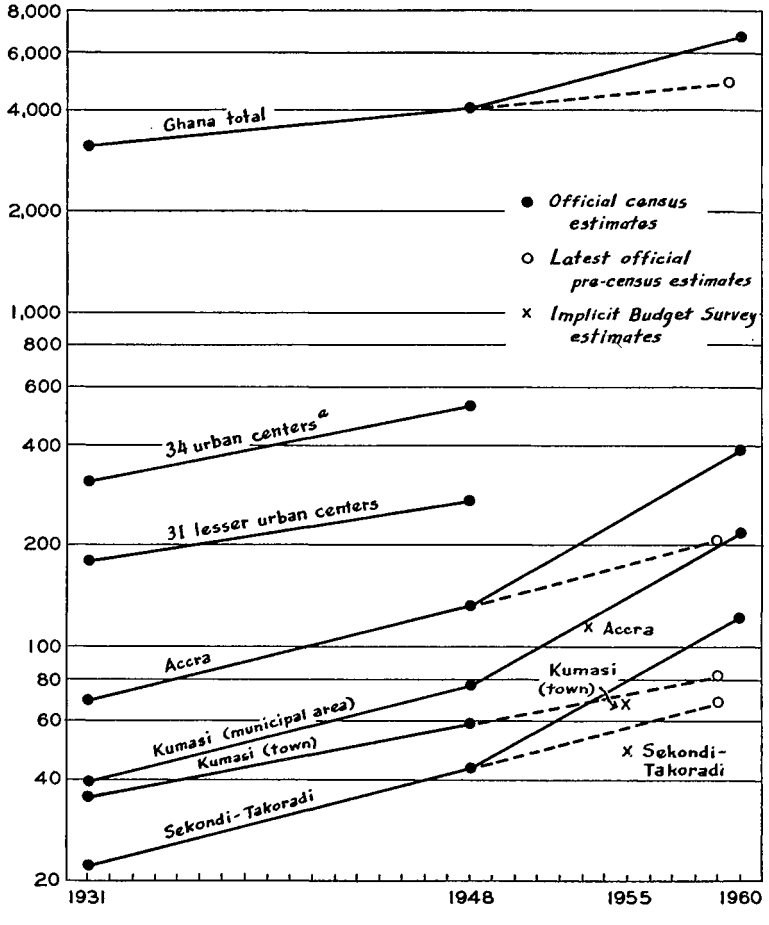
As in Middle Africa generally, urbanization in Ghana has been proceeding at a rate far faster than over-all population growth. How much faster is, unfortunately, not entirely clear. As with many less-developed countries—African ones particularly—the population data for Ghana leave much to be desired. This is not to say that there have been no censuses; there have. But the results have been so inconsistent as to seriously limit their usefulness as indicators of historical trend.

Consider Chart 2. In it are plotted various estimates of the country's total population and the size of its principal cities. Connected by the solid lines are the figures reported in the last three censuses: that of 1931, "the first in which the entire population was individually counted" (*18,* p. 7); that of 1948; and that of 1960, for which only provisional and incomplete returns are yet available. Also shown are the latest estimates which were made prior to the 1960 count—estimates which, though for the cities were based on water-consumption data, closely followed the trend suggested by the 1931 and 1948 figures. The discrepancies between the 1959 estimate and the 1960 count are huge. In mid-1959 the country's population was officially reckoned at 4.9 million. The 1960 census returned a provisional figure of 6.7 million. In 1958/59 it was considered that the Accra and Sekondi-Takoradi water systems supplied populations of 208,000 and 68,000, respectively. The 1960 enumeration suggests that 388,000 and 121,000 would be better estimates. For Kumasi the comparison is less easy, because unlike Accra and Sekondi-Takoradi, whose municipal areas are almost entirely urban in character, the domain of the Kumasi Municipal Council includes both the town proper and a semirural suburban area. Nevertheless, a striking difference in the estimates may be perceived. The 1958/59 water figure gave the town 82,000 persons, as opposed to 221,000 for the municipal area in the 1960 census. It is generally agreed that the town's population accounts for well over two-thirds of the municipal total.

Manifestly the three censuses cannot be used together: either the 1960 figures are gross exaggerations, or the 1931 and 1948 counts understated reality by a considerable margin. In all probability the latter is the case, though it would be foolhardy to suppose that the level of accuracy attained in 1960 was anything like that achieved in more advanced countries. But the 1960 enumeration, preceded

CHART 2.—GHANA: VARIOUS ESTIMATES OF TOTAL AND URBAN POPULATION, 1931–60*

(Thousand persons: logarithmic vertical scale)



* Data for 1931 and 1948 from Gold Coast, Off. Govt. Stat., *Census of Population, 1948, Report and Tables* (1950). Data for 1960 are provisional and are from Ghana, Off. Govt. Stat., *Quarterly Digest of Statistics,* June 1960, p. 1. Estimate of total population, mid-1959, from *ibid.,* March 1960, p. 1. Estimates for urban areas, 1958/59, from Ghana, Min. Fin., *Economic Survey, 1959* (1960), p. 47. Implicit budget survey estimates were obtained by multiplying by four the number of persons enumerated during the "population enquiry" phases of the surveys, as these purported to cover close to 25 per cent of the populations. Multiplicands are from Gold Coast, Off. Govt. Stat. (Stat. and Econ. Papers), *1953 Accra Survey of Household Budgets* (No. 2, December 1953), p. 3; *Kumasi Survey of Population and Household Budgets, 1955* (No. 5, March 1956), p. 18; and *Sekondi-Takoradi Survey of Population and Household Budgets, 1955* (No. 4, March 1956), p. 16.

[a] Communities reported to have 5,000 or more inhabitants in 1948.

by a "census education" campaign of almost six-months duration (which reached a climax with countrywide festivities on "census night")[6] and carried out with the assistance of United Nations' experts, was almost certainly the most accurate count thus far taken (*14,* pp. 15–16). Both the 1931 and 1948 censuses, on the other hand, have long been suspect. Indeed, the officer in charge of the 1931

[6] An exceptionally clever device for allaying suspicions, by the way, and one which reflects credit on the census authorities.

enumeration called attention to numerous specific inaccuracies and stated that a majority of his subordinates "were of the opinion that the figures collected by them are lower than they should have been by from 2 per cent to 10 per cent" (*8*, p. 123).

There are grounds for believing the 1948 census was similarly incomplete, this despite the fact that the count was technically much better organized. Early 1948, when the census was taken, was a time of considerable civil unrest throughout the country. Cocoa growers were bitterly opposed to the government's program of compulsory cutting of trees affected by Swollen Shoot; and in the cities the discontent which was to culminate in the bloody riots of February and March was rife (*37*, pp. 15–16). This situation undoubtedly reinforced the African's traditional suspicion of the census taker (based on the not unfounded fear that his visit would be followed by one from the tax collector), and makes it highly likely that a sizable proportion of the population was at pains to avoid enumeration.[7]

As indicators of the course of urban growth in Ghana, then, the pre-1960 figures have only limited value. They are not totally useless, however. While apparently inaccurate in so far as absolute magnitudes are concerned, they probably reflect *relative* movements accurately enough. In any event they are all we have, so use them we must.

Again consider Chart 2. It will be seen that between 1931 and 1948 the population as a whole was thought to have increased from 3.2 million to 4.1 million, or by 30 per cent. (Such an increase would reflect an average annual growth rate of 1.56 per cent—not an unreasonable figure.) During the same interval, in contrast, the number of people thought to be living in the country's 34 urban centers rose by 68 per cent, from 314,000 to 527,000. But if the rate of over-all urban expansion was over double that of the total population, most of it was in the three principal cities. Accra, Kumasi, and Sekondi-Takoradi, which are together thought to contain about half of Ghana's urban dwellers, were each reported to have experienced a population increase of over 90 per cent during the period. The 1960 figures suggest that the rate since has been even faster.

Accra, the capital and largest city, owes its growth and pre-eminence to several factors. Like most of the other coastal towns, it had its beginning in the seventeenth century as a settlement surrounding one of the numerous European trading forts. These coastal communities grew and prospered directly with the ease and extent of their contacts with the interior. Thus, though Accra's future was assured by its choice in 1877 as the colony's capital (under the mistaken notion that it would prove a more healthful site than Cape Coast), its real rise to pre-eminence dates from the construction of the eastern rail line. Begun in 1905 and completed, after innumerable delays, to Kumasi in 1923, this line tapped the newly developing cocoa areas of the southeastern Forest. As its ocean terminus, Accra flourished; quickly becoming the chief exporter of cocoa, it dominated the trade until Takoradi harbor was completed in 1928. The 1931 census gave its population at almost 70,000, nearly four times the 1911 figure.

[7] Supporting this thesis are the findings of a social survey conducted in one of the older districts of Cape Coast in 1953. One of the few such surveys to be based on an actual count instead of a sampling of persons carried on the tax rolls, it revealed the population to be over double that reported in the 1948 census (*36*, p. 37).

Accra's growth during the last 30 years reflects more than anything else the over-all development of the country's economy. Though surpassed by Takoradi as the foremost port, it remains firmly established as Ghana's commercial and administrative center. As the political capital, too, it has profited immensely from the recent expansion of government's importance. The municipal area has had to be enlarged repeatedly; and in 1960 its population was put at 388,000 (*1*, pp. 16–31; *13*, p. 1).

Kumasi, Ghana's second city and chief inland metropolis, is the capital of the Ashanti people—a fact which has contributed in no small part to its present position. Unlike the other peoples of Ghana, the Ashanti have long enjoyed a substantial measure of political unity; and as the seat of their king, Kumasi is today, as it was at least 200 years ago, the focus of their cultural and political lives. More recently, however, its importance derives mainly from its location at the hub of inland communications. Reached by the western railroad in 1903, it rapidly developed into a major collecting center for cocoa and the staging point for trade between northern Ghana and the Forest—positions that were further strengthened 20 years later with the completion of the eastern line. By 1931 the city and its suburbs were thought to include over 40,000 persons, as opposed to only 6,000 twenty-five years earlier. Since then, aided greatly by the westward migration of cocoa production and by construction of an extensive network of feeder roads, Kumasi has boomed. The 1960 census returned a provisional figure of 221,000 for the population of its municipal area (*10*, pp. 160–61; *33*, pp. 4–7; *13*, p. 1).

If railroads and cocoa largely explain the initial rise of Accra and Kumasi, the combination was railroads and gold in the twin cities of Sekondi-Takoradi, Ghana's third ranking urban center. Founded like Accra, in the shelter of European trading "factories," the towns' site enjoyed no special advantages over its many competitors until 1898, when Sekondi was selected as the terminus for the western railway. Originally built to serve the gold fields around Tarkwa, this line was soon extended to Kumasi and later, by a branch, to the diamond area around Akwatia. Drawing on such an extensive hinterland—rich in timber and cocoa as well as minerals—the town could not but thrive. Nonetheless, it did not really hit its stride until after the completion in 1928 of Takoradi harbor. As the country's first, and until 1961 only deep-water facility (all the other ports except the new one at Tema are open roadsteads, requiring the use of inefficient and costly surfboats), it immediately supplanted Accra as the chief port, drawing traffic even from east of the Volta. The 1948 census put the population at 44,000, an increase of 95 per cent over the 1931 figure. The provisional estimate for 1960 is 121,000 (*7*, pp. 2–3; *13*, p. 1).

As would be expected in view of the exceedingly rapid growth of Ghana's three major cities, a high proportion of their citizenry is composed of "migrants" (i.e., persons born elsewhere). This is particularly true of Sekondi-Takoradi and Kumasi, where, as Table 2 indicates, no less than 78 and 70 per cent, respectively, of the persons enumerated in 1948 were born somewhere else. In Accra the figure was somewhat lower, 46 per cent, but the extent of that city's growth during the last 12 years makes it not improbable that even there native-born persons are now in a minority.

This influx of newcomers has carried before it much of the cities' regional flavor. As Table 2 makes clear, the pull of Ghana's towns has made itself felt over a considerable portion of West Africa. The data suggest that fully 40 per cent of the migrants to Accra, for instance, come either from the relatively distant Northern Region or from other countries (chiefly Nigeria and the former French territories to the north of Ghana). Of the 62 tribal divisions of Ghana recognized in the 1948 census, all but two were represented in Accra; and the same count indicated that the indigenous Ga people accounted for only 52 per cent of the inhabitants (*1,* pp. 30–31). If similar breakdowns were available for Kumasi and Sekondi-Takoradi, they would almost certainly show that in these centers too the predominance of local tribes had become equally precarious.

As is true throughout Middle Africa, the stream of migrants into Ghana's cities is made up of many more men than women, with the consequence that there is a sharp imbalance in the sex composition of their populations. In Kumasi, for every 100 females in the 16- to 44-year age bracket enumerated in 1948, 136 males were counted. The disparity was even greater in Accra and Sekondi-Takoradi. There the census recorded, respectively, 140 and 152 working-age men for every 100 women (*18,* pp. 45, 51). Many of these men are unmarried; others have left their families behind. On arriving in town they tend either to rent living space from an established household (illegally if the dwelling is in a government-housing estate) or to cluster together in dormitory-type buildings, four or five or even more to a room (*40, passim*). The social instability which results is, of course, considerable; and it is aggravated by the fact that much migration is of a temporary character. Many of the migrants, especially the married men, remain in town only a year or so—until they can accumulate a certain amount of money or purchase certain goods—after which they return to their homes. An impression of the prevalence of these "target workers" may be had from Table 2. Roughly 60 per cent of the male newcomers enumerated in each of the three cities in 1948 stated that they had lived there for less than five years, and a quarter of them indicated that they had been there for less than one year.

The picture of Ghana's cities that emerges, then, is one of extremely rapid growth and of a heterogeneous citizenry which has yet to take root—of people whose ties to their place of residence are as often as not unreinforced by those of kinship or home. What bearing has this on the dietary characteristics of the communities? Prima facie, it suggests that one would probably search in vain to identify dietary preferences typical of all the people. It also suggests that among the high proportion of single people ready-made or easily prepared foods would find an uncommonly receptive market.

CONSUMPTION CHARACTERISTICS

Our insight into the dietary behavior of Ghana's urban dwellers rests mainly on the findings of three surveys of household budgets carried out some years ago in Accra, Kumasi, and Sekondi-Takoradi (*20, 21, 19*).[8] These surveys contain a

[8] A fourth survey has been conducted in the Volta River town of Akuse. Because Akuse, with a population according to the 1948 census of less than 5,000, hardly ranks as a true urban center, this survey is not considered here.

TABLE 2.—ACCRA, KUMASI, AND SEKONDI-TAKORADI: DISTRIBUTION OF POPULATION BY BIRTHPLACE AND DURATION OF RESIDENCE, 1948*

(Per 1,000 of total population)

City and Sex		Total	Born in city	All migrants	Birthplace of migrants					Duration of residence of migrants		
					Colony[a]	Ashanti	Northern Terr.	Togoland	Foreign countries	Less than 1 year	1–4 years	5 years or more
Accra	Total	1000	538	462	205	25	61	49	122	118	156	188
	Males	1000	463	537	207	29	88	52	161	149	166	222
	Females	1000	627	373	204	19	29	45	76	82	144	147
Kumasi[b]	Total	1000	297	703	189	271	134	22	87	177	228	298
	Males	1000	277	723	165	251	172	23	112	198	224	301
	Females	1000	321	679	217	293	90	20	59	152	232	295
Sekondi-Takoradi	Total	1000	219	781	498	31	69	25	158	174	277	330
	Males	1000	197	803	456	34	97	26	190	186	272	345
	Females	1000	246	754	552	28	33	22	119	158	285	311

* Based on data in Gold Coast, Off. Govt. Stat., *Census of Population, 1948, Report and Tables* (1950), pp. 16, 362, 366.

[a] The Eastern and Western Regions plus the southern quarter of Trans-Volta/Togoland.

[b] Excluding suburbs.

wealth of evidence, most of it covering matters which previously had been the subject of conjecture alone. They are, of course, not without their shortcomings. As with similar ground-breaking investigations undertaken elsewhere in Middle Africa, their usefulness is somewhat limited by the fact that they relate only to short periods of time and to restricted segments of the population. These and other deficiencies dictate that the surveys be interpreted with care and the data not pressed too rigorously.[9] But they are not such as to invalidate the basic worth of the more general findings.

The Budget Surveys

Ghana's three urban budget surveys were conducted in 1953 (Accra) and in 1955 (Kumasi and Sekondi-Takoradi). All were undertaken by the Office of the Government Statistician, and all had as their *raison d'être* that agency's desire to relate the weighting systems used in its indices of local prices to actual expenditure patterns. Although no two of the surveys were exactly alike, the same general procedures were followed in all.

The surveys consisted of two parts: a broad "population enquiry" and the detailed budget survey proper. The function of the first part, though instructive in itself, "was to provide a frame from which to select households for budget recording and to show precisely to what section of the community the budgets related" (*21,* p. 1). Toward this end it was based on a rather large sample, an enumeration of 25 per cent of the African population in each municipality (or town area in Kumasi) having been the objective. The sampling unit was the house; the municipal property tax lists the basis for selection. Every fourth address was visited, and each identifiable household—defined as "a group of persons living and feeding together, i.e., a group forming a definite economic unit" (*21,* pp. 1–2)—was questioned as to family size and structure, occupation and income, and the number of rooms occupied. The only intentional omissions were army barracks, government bungalows, and buildings classified as non-residential.

That anything even approaching a 25 per cent sample was actually achieved in any of the population inquiries is highly improbable. At the time it was thought that coverage was reasonably complete; now the evidence points clearly to the contrary. In all, 58,033 persons were enumerated—29,123 in Accra, 16,663 in Kumasi, and 12,247 in Sekondi-Takoradi (*20,* p. 3; *21,* p. 16; *19,* p. 18). If these figures are multiplied by four (as has been done in Chart 2) the results fall far short of the total populations suggested by the last two censuses; this remains true even if allowance is made for the small number of individuals (notably whites, transients, and members of the military) intentionally overlooked.

One can only speculate as to the causes of this understatement. It is not unlikely, however, that use of the tax books as the basis for selection was a contributing factor. As the 1960 census revealed, the three municipal councils, at the time of the surveys, had no idea of how many people they were administer-

[9] Accordingly, I intentionally pass over without comment many of the minor inconsistencies which will be readily apparent to the reader.

ing; and though they were probably not equally ignorant of the number of dwellings within their jurisdiction, it is quite probable that difficulties were encountered in drawing up the tax lists. We are informed that in Accra, for instance, to find a particular house is often a major undertaking, there being no map which shows all street names. Furthermore, in some wards there are no identifying house numbers, while in wards where there are numbers these are not consecutive, but refer to an arbitrary order in a sanitation district (*4*, p. 171). Under such conditions it would be surprising indeed to find that the tax lists were complete.

Also presumably involved were some of the same factors which led to underenumeration during the 1948 census: political tension—especially evident in Kumasi at the time of its survey (*19*, p. 2)—and the African's long-standing suspicion of strangers, particularly those acting in some official capacity. Not a few houses in urban Ghana, especially those occupied by migrants, contain upwards of 100 persons, and, as more than one government researcher has found, "it is common for the occupants to deny the existence of a person who is actually in the crowd of occupants expressing the denial" (*4*, p. 171). That many men either were successful in doing just this during the population inquiries or were otherwise missed by the enumerators appears likely. This conclusion is suggested by comparing the adult sex ratios found in the samples with those reported in the 1948 census (which, though it was also incomplete, was to all appearances a more reliable count). Such a comparison between the 1948 census figure and the population inquiry figures, multiplied by four, is made in the following tabulation (in thousand persons) (*20*, p. 55; *21*, p. 26; *19*, p. 30; *18*, pp. 45, 51):

Sex	Accra	Kumasi	Sekondi-Takoradi
	1948 Census		
Adult males[a]	49.5	20.9	17.7
Adult females[a]	37.3	14.9	11.2
	Population Inquiries, 1953–55		
Adult males[b]	27.6	18.7	16.2
Adult female[b]	31.3	19.1	13.1

[a] Persons 16 years and older.
[b] Persons 15 years and older, except in Accra where 19 and older.

The differences are startling. Whereas the census indicates a strong male predominance in all three cities, the population inquiries imply that in Accra and Kumasi women are actually in the majority and that in Sekondi-Takoradi they account for fully 45 per cent of the adult population. Manifestly you cannot have it both ways; and it is worth noting that to hold in favor of the population inquiries would involve some rather tenuous hypotheses. One would have to assume, in the first place, that women were grossly underreported in 1948. There is, in fact, evidence that some women did hide from the enumerators (cf. *1*, p. 38), but that they would do so in great numbers during the census and then not do so a few years later seems improbable. Furthermore, one would have to argue that men, who are away at work all day, find it less easy to avoid enumeration

during a *house-to-house* survey than do women. And finally, one would have to contend that for some unknown reason the sex ratio in Ghana's cities differs sharply from that prevailing elsewhere in urban Middle Africa.

All this rather strongly suggests that the "frames" provided by the population inquiries were biased toward overenumerating of women. Nonetheless, any atypicalities in the budget samples introduced at this stage were decidedly of a secondary nature. For in selecting the households to be used for detailed budget analysis no attempts were made to draw on cross sections of the populations. Instead the samples were intentionally constructed so as to relate only to clearly defined portions of the three communities.

The bases on which the three budget samples were selected are shown in outline form in Table 3. It will be seen that whether or not a given household was considered for one of the samples depended on both its size and composition as well as on the source and level of its income. The exact criteria differed somewhat between the surveys. Most significant of these differences pertained to income source. Households without wage earners were omitted from both the Accra and Sekondi-Takoradi surveys. In deciding on this restriction the authorities were guided by the fact that the surveys' chief end-products were to be weighting systems for use in preparing indices of local prices. Households depending mainly on wage incomes, it was reasoned, would be the ones primarily affected by price changes (the incomes of traders and the like being more responsive to the level of prices): if so, indices mirroring their expenditures would be the most instructive. This restriction, however, was not applied in Kumasi. The economic structure of Kumasi differs markedly from that of the other two cities. Both Accra and Sekondi-Takoradi contain appreciable numbers of wage earners: notably employees of commercial firms, the Government, and the port in the former; and of the port and the railroad in the latter. Kumasi, on the other hand, is still chiefly a trading center, and most of the workers are self-employed. Of the households enumerated during the population inquiry, only 34 per cent received income from wages (*19,* p. 4). To have limited the budget survey to just these households would clearly have defeated its purpose.

Otherwise, the factors governing the coverage of the samples were much the same in all three surveys. Unfortunately, households with either very high or very low incomes were not considered, all households in Kumasi and Sekondi-Takoradi with monthly wage incomes outside the range £5 to £15 having been disqualified, as were those in Accra whose heads earned less than £50 or more than £180 yearly (£4 4*s.* to £15 monthly). Still others were ruled out on "practical considerations": e.g., single persons and households lacking an adult female were omitted on the ground that they would obtain much of their food at snack bars or from cateresses, and households with nine or more members or with more than a few sources of income were excluded to avoid unduly complicated budgets. After these and a few other minor exclusions, there remained homogeneous groups of households which could be described rather closely:

> *Accra.*—Wage-earning households of 2 to 8 persons (excluding those of one adult and three or more children), with no more than two income earners, and with wage-earning heads in the income range of £50 to £180 per year (*20,* p. 4).

TABLE 3.—ACCRA, KUMASI, AND SEKONDI-TAKORADI: SELECTION OF BUDGET SURVEY SAMPLES, 1953 AND 1955*

Accra		Kumasi		Sekondi-Takoradi	
Households in Population Enquiry..	4,898	Households in Population Enquiry..	4,337	Households in Population Enquiry..	3,420
Households excluded (in sequence):		Households excluded (in sequence):		Households excluded (in sequence):	
1. Nonwage-earning heads	2,566	1. No regular income, or four or more incomes	323	1. Without wage earners	1,063
2. Annual income of head under £50 or over £180	735	2. Single persons	770	2. Monthly wage income under 100*s.* or over 299*s.*	606
3. More than one income earner besides head	192	3. Nine persons or more	198	3. Single persons	555
4. Single persons	260	4. Monthly wage income under 100*s.* or over 299*s.*	306	4. Nine persons or more	36
5. Nine persons or more	109	5. Without adult female	206	5. Without adult female	120
6. One adult and more than two children	24	6. Living in outskirts	55	6. Three or more nonwage incomes	17
Total households excluded	3,886	Total households excluded	1,858	Total households excluded	2,397
Households meeting Burget Survey criteria	1,012	Households meeting Budget Survey criteria	2,479	Households meeting Budget Survey criteria	1,023
as percentage of all households....	*21*	*as percentage of all households*....	*57*	*as percentage of all households*....	*30*
Budgets recorded	500	Budgets recorded:		Budgets recorded:	
		By 90 teachers	450	By 90 teachers	450
		By 20 staff members	120	By 16 staff members	96
Total useable budgets	453	Total useable budgets	570	Total useable budgets	546

* Data from Gold Coast, Off. Govt. Stat. (Stat. and Econ. Papers), *1953 Accra Survey of Household Budgets* (No. 2, December 1953), pp. 5, 9; *Kumasi Survey of Population and Household Budgets, 1955* (No. 5, March 1956), pp. 7–8; and *Sekondi-Takoradi Survey of Population and Household Budgets, 1955* (No. 4, March 1956), pp. 6–7.

Kumasi.—Households of 2 to 8 persons (at least one of whom was an adult female), with 1 to 3 incomes from all sources, but with any wage income in the range £5 to £15 a month, excluding those living in the outskirts (*19*, p. 7).

Sekondi-Takoradi.—Wage-earning households of 2 to 8 persons (at least one of whom was an adult female), with no more than two sources of nonwage income, and with wage incomes in the range £5 to £15 a month (*21*, p. 7).

From among these households the budget samples were chosen at random.

The effect of these selection procedures on the applicability and relative coverage of the samples defies precise appraisal. Table 3 shows the proportion of the households enumerated in each population inquiry which met the budget survey criteria. It will be seen that over-all coverage was greatest in Kumasi, where 57 per cent of the households qualified for the sample, and smallest in Sekondi-Takoradi and Accra, where only 30 and 21 per cent qualified. This difference mainly resulted from the exclusion from the survey in the latter two communities of households without wage earners. In Accra 57 per cent of the households received income from wages and the sample related to 36 per cent of them; in Sekondi-Takoradi the figures were 69 per cent and 43 per cent, respectively (*19*, p. 4).

Comparisons such as these are not particularly instructive, however, and beyond them there is precious little to go by. This because, though coverage *per se* was closely defined, next to nothing exists to which it can confidently be related. In so far as household size and composition is concerned, the 1948 census sheds no light, while the findings of the population inquiries were almost certainly biased in favor of women. That this bias was carried over to the samples may safely be assumed, and also that it was magnified by the exclusion of single persons. But apart from this, and the fact that the samples clearly covered households of larger than average size, further refinement is impossible.

The picture with respect to income coverage is similarly obscure. What the distribution of incomes is among Ghana's urban dwellers is just about anybody's guess. True, the households visited during the population inquiries were questioned as to income, but because of the difficulty of assessing nonwage revenue during a single interview, the scope was restricted to income from wages. The findings in all three cases were much the same. In both Kumasi and Sekondi-Takoradi it was observed that fewer than one per cent of the wage-earning households had monthly wage incomes of less than £5 and that roughly a quarter of them received more than £15 (*21*, p. 21; *19*, p. 24); while in Accra it was found that "the range of £50–180 per annum covered almost the entire lower income range and included nearly 70 per cent of all families with wage-earning heads" (*20*, p. 4). But if this suggests that the surveys related to households in the middle- and lower-income brackets, there is no evidence that they included any falling below the so-called "poverty line." This would imply that they did not have enough to eat; and it is brought out below that the average apparent caloric intake per capita reported for the Kumasi and Sekondi-Takoradi samples (quantity data were not collected in Accra) was quite adequate and varied little from

one expenditure class to the next. What effect (if any) the inclusion of households with nonwage incomes or multiple sources of revenue had on this rough picture is entirely a matter for conjecture; it can only be inferred that it was reasonably uniform. Per capita monthly expenditure differed little among the three samples: £3 14*s.* in Accra, £3 8*s.* in Kumasi, and £3 3*s.* in Sekondi-Takoradi (*21*, p. 11).

The budget surveys were carried out about a month after the population inquiries and in each instance covered a period of 30 days (during May–June in Accra, March–April in Kumasi, and February–March in Sekondi-Takoradi). The briefness of this period is to be regretted; as elsewhere in Middle Africa there are important seasonal changes in the dietaries of the urban Ghanaians. It was felt, however, that this shortcoming would be more than compensated for by the larger number of budgets which a single month's record would permit.

In all, 1,569 useable budgets were obtained—453 of them in Accra (where 47 had to be discarded), 570 in Kumasi, and 546 in Sekondi-Takoradi. Records of both income and expenditure were collected for each household. On the expenditure side[10] provision was made for data of two types—a daily accounting of all domestic outlays (excluding those of a purely transfer nature), and an estimate of the preceding twelve months' disbursements for clothing and durable goods. Because items of a durable character are purchased irregularly, the findings were used in conjunction in arriving at a figure for "normal" monthly expenditure. This was defined as "one-twelfth of the annual expenditure on clothing and durables plus the survey period expenditure on other domestic items" (*21*, p. 10). This definition is worth bearing in mind; on its terms the analysis of the budgets is grounded.

The day-to-day data collecting was done both by permanent members of the Government Statistician's staff and school teachers employed on a part-time basis. During the Accra survey the former acted as supervisors, while 100 teachers did the actual recording. Each was assigned responsibility for five households. These were visited every evening and their expenditures entered, item by item, in specially printed booklets. In the other two cities a slightly different procedure was followed. Again teachers—90 were employed in both instances—handled five budgets apiece, but in addition to their supervisory duties each of the permanent interviewers (20 in Kumasi, 16 in Sekondi-Takoradi) was made responsible for six households. These households were selected as a subsample from the main group and were dealt with in somewhat greater detail; in their case quantities as well as values were ascertained. For items not purchased by definite units, quantities were determined by weighing. The permanent interviewers were equipped with scales and arranged to meet the housewives daily after mar-

[10] The income side of the budgets has little relevance to the present inquiry. Net income per household can be estimated for neither the Kumasi nor the Sekondi-Takoradi samples. This because, though both wage and nonwage income was recorded, no account was kept in the nonwage ledger of changes in stocks and credit transactions. In Accra, on the other hand, each household was asked to estimate its net income. But, either because of an unwillingness or inability to state this figure accurately, these estimates were so unlikely (suggesting dis-saving was the rule in the higher income brackets, saving in the lower) that for Accra too the budgets were analyzed on the basis of expenditure rather than income class.

It is not possible, therefore, to infer anything about the precise extent of saving and dis-saving during the survey periods. Probably it was small.

keting. These quantity figures provided an exceptionally detailed picture of diet composition; accordingly, the Kumasi and the Sekondi-Takoradi surveys are somewhat the more valuable.

Expenditure Patterns

The over-all expenditure patterns revealed by the surveys were remarkably similar (Table 4). In all three cities food was by far the largest item of household expenditure, accounting for an average of 57 to 58 per cent of all domestic outlays. Next came clothing, taking up between 12 and 15 per cent of expenditures, followed by rent and taxes (5 to 8 per cent), fuel and light (4 to 6 per cent), and drink and tobacco (4 to 6 per cent). Services, household durables, and miscellaneous items together accounted for no more than 10 to 14 per cent.

That food should bulk so large in the domestic expenditures of Ghana's urban dwellers is not surprising; although an average per household figure of 57 to 58 per cent is considerably higher than one would expect to encounter in all but the lowest-income classes in advanced regions, it is wholly consistent with the findings of similar investigations undertaken in other low-income countries.[11] What is surprising (to one accustomed to analyzing Western budgets, at least) is the constancy of the figure throughout virtually the entire expenditure (income) range. This is brought out clearly in Chart 3. In both Accra and Kumasi the proportion of total expenditures allocated to food declined but slightly with an increase in total domestic outlays. The extreme observations are worth noting. In the lowest-expenditure class observed in Accra food absorbed 63.3 per cent of all outlays, whereas in the highest class it accounted for 58.3 per cent; in Kumasi the percentages were 56.2 and 52.7, respectively—all this among samples which embraced over a fivefold difference in total expenditures between the extreme classes. Only in the Sekondi-Takoradi sample was there a truly pronounced drop, with the proportion of expenditures allocated to food declining from 63.8 per cent in the lowest class to 42.5 per cent in the highest. But a word of caution about Sekondi-Takoradi. Over a third of the decline there was accounted for by the highest-expenditure class. This class included only 10 house-

[11] Some findings of a cross section of recent surveys (*23*, Tables AII and B11):

Country	Year	Coverage	Number of households	Per capita expenditure[a]	Per cent spent for food[b]	"Income" elasticity of food expenditure[c]
Egypt	1955	3 villages	493	70	70.7	.92
Ceylon	1952–53	All population	1,085	85	63.1	.82
Ghana	*1953*	*Accra*	*453*	*124*	*58.0*	*.98*
Portugal	1950–51	Porto	667	160	62.8	.72
Puerto Rico	1952	Urban wage earners	786	218	51.4	.80
Italy	1953–54	Nonfarm population	1,599	285	57.8	.66
Cuba	1951	Havana	881	549	43.8	.73
Canada	1955	5 large cities	787	1,298	26.8	.40
United States	1955	Urban population	2,241	1,504	32.5	.44

[a] Annual average per capita living expenditures in U.S. dollars, converted at official exchange rates, in 1955 prices.

[b] Per cent of total expenditures.

[c] Double-log coefficient of expenditure elasticity, the influence of household size having been eliminated.

holds, and we are advised that the pattern of their expenditures was distorted by some "irregular" payments for services and rent (*21*, p. 13). The inference is that in Sekondi-Takoradi as well, food items commanded a rather constant proportion of total outlays per household.

TABLE 4.—GHANA, URBAN HOUSEHOLD BUDGET SURVEY SAMPLES, 1953 AND 1955: DOMESTIC EXPENDITURE PATTERNS*

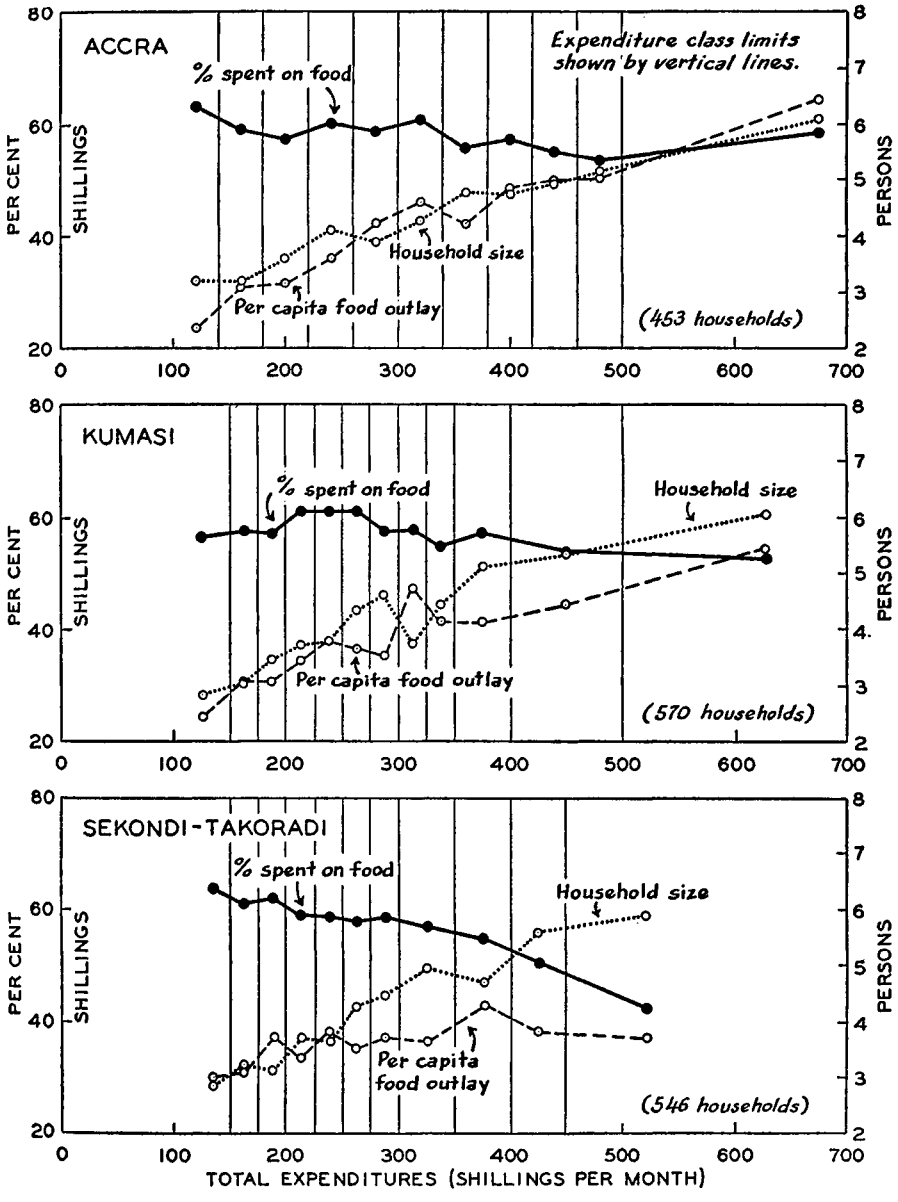
Item	Accra (May-June 1953)	Kumasi (Mar.-Apr. 1955)	Sekondi-Takoradi (Feb.-Mar. 1955)
Expenditures by Uses (*per cent*)			
Food	58.0	57.3	57.7
Clothing	12.1	13.8	14.8
Rent and taxes	5.4	7.5	6.0
Fuel and light	4.7	6.2	6.0
Drink and tobacco	6.1	4.2	5.1
Services	5.8	5.8	4.9
Durable goods	3.6	2.1	2.5
Miscellaneous	4.3	3.1	3.0
Total	100.0	100.0	100.0
Sample Characteristics			
Number of households	453	570	546
Average size (*persons*)	4.24	4.15	3.98
Average monthly expenditures (*shillings*)	314	282	249
Per capita monthly expenditures (*shillings*)	74	68	63

* Data from Gold Coast, Off. Govt. Stat. (Stat. and Econ. Papers), *Sekondi-Takoradi Survey of Population and Household Budgets, 1955* (No. 4, March 1956), pp. 11–12.

The explanation for this result is to be sought in terms of several factors, some clear-cut, some obscure. Chief among the latter, to be sure, is the question of the samples themselves and, more specifically, of the income sectors to which they pertained. This, it has been noted, is a point of singular elusiveness, our only firm bench mark being that data for wage incomes suggest that coverage was restricted to households in the lower- and middle-income ranges. But what about nonwage receipts? Were these sufficiently large to elevate some of the households to the upper-income echelons, and to provide a reasonable cross section of incomes? Certainly expenditures in the highest classes were not paltry. In Accra, for instance, the average monthly outlay in the highest-expenditure class was 675 shillings, pointing to annual receipts, if savings are ruled out, of the order of £405. This sum compares not unfavorably with the 1954 scale for Grade-5 civil servants, the highest grade in the Government to which an African could then normally aspire.[12] I suspect, nonetheless, that even these households fell not in the upper, but the middle-income reaches, for household income in

[12] In that year the lowest starting wage for Grade-5 civil servants was £220, with £580 as the possible ultimate salary (*1*, p. 67).

CHART 3.—GHANA, URBAN HOUSEHOLD BUDGET SURVEY SAMPLES, 1953 AND 1955: PERCENTAGE OF TOTAL DOMESTIC EXPENDITURES SPENT ON FOOD, PER CAPITA MONTHLY FOOD OUTLAYS, AND HOUSEHOLD SIZE, BY EXPENDITURE CLASS*



* Based on data in Gold Coast, Off. Govt. Stat. (Stat. and Econ. Papers) *1953 Accra Survey of Household Budgets* (No. 2, December 1953), pp. 10–12; *Kumasi Survey of Population and Household Budgets, 1955* (No. 5, March 1956), pp. 36–37; and *Sekondi-Takoradi Survey of Population and Household Budgets, 1955* (No. 4, March 1956), pp. 32–33. Positioning of data for extreme expenditure classes reflects actual average expenditures; for other classes the midpoint. Figures do not include expenditures on drink.

urban Ghana is a close function not only of the level of individual incomes, but of household size as well. Accepting this interpretation as correct, it may well be that had truly high-income households been included in the samples, the expected decline in the proportion of outlays allocated to food would have manifested itself more strongly.

Turning now to a less speculative consideration, there is the relationship just mentioned—that between income and household size. This is illustrated graphically in Chart 3, except that total expenditure rather than income is shown. Households in the lowest-expenditure class in all three samples had an average of roughly three persons apiece, whereas those in the highest classes were almost twice as large. Few households in urban Ghana rely on just one income earner. Not only will a man customarily work, but his wife as well; of the women 15 years and older enumerated in the Kumasi population inquiry, 77 per cent were gainfully occupied—chiefly as "mammy traders"—as were 64 per cent of their number in Sekondi-Takoradi (*21*, p. 30; *19*, p. 34). But this is not all. The African concept of a household is such a broad one that it may encompass many adults, all of whom contribute to total receipts. As income rises, then, so often does the number of persons who must be housed, clothed, and fed. Thus it was in the samples. Though the range of total expenditures among the extreme classes covered varied between four- and sixfold, the differences on a per capita basis were much less pronounced. Here are the figures (in shillings per month: *20*, pp. 10–12; *21*, pp. 32–33; *19*, pp. 36–37):

Expenditure class	Accra	Kumasi	Sekondi-Takoradi
Total Expenditures per Household			
Lowest expenditure class	119	124	135
Highest expenditure class	675	628	521
Total Expenditures per Capita			
Lowest expenditure class	37	44	47
Highest expenditure class	111	103	88

But the tendency for an increase in incomes to be accompanied by a rise in the number of mouths to be fed only partially explains why food items commanded so constant a proportion of total expenditures. Also involved, as would be expected and as Chart 3 reveals, is that as income goes up so do per capita outlays for food. This was most strikingly evidenced in the data for Accra and Kumasi. There, per capita monthly food expenditures rose from about 25 shillings in the lowest-expenditure classes (where total domestic outlays amounted to about 40 shillings per person) to an average of about 60 shillings in the highest classes (total per capita expenditures of over 100 shillings), and even then showed no signs of having approached a ceiling. These figures suggest that the demand for food is highly income elastic; indeed a double-log regression fitted to the Accra data gives a per capita constant expenditure elasticity coefficient of .98, and for Kumasi .86. A somewhat different situation is reflected in the data for Sekondi-Takoradi. Though there again per capita food expenditures increased with income, they did so rather less sharply than in the other two samples; the double-log method gives an elasticity coefficient of .55. Closer examination of the data indicates this disparity chiefly mirrors a rather low income elasticity of

demand in Sekondi-Takoradi for fish products. Before discussing this point, however, it is desirable first to examine the surveys' findings with respect to the broad characteristics of the diets of Ghana's city dwellers.

Diet Composition

In their essential features, the diets of urban Ghanaians closely resemble those of other Middle African peoples (*28,* p. 3). As is true over virtually all of Middle Africa, most meals are built around a mass of stiff porridge or doughy paste made from one of a small number of the starchy-staple foods—the cereals, the starchy fruits, roots, and tubers—bits of which are dipped into a sauce or thin stew before being eaten. The porridge or paste will invariably supply the bulk of the meal's calories, whereas the sauce, in addition to adding flavor, will contribute most of the protein, fat, vitamins, and mineral content. Sauces may be made from a wide variety of edibles. In the forested regions of Ghana, palm nuts and palm oil are standard ingredients, as are, to mention but a few, dried fish, beef, snails, peanuts, peppers, tomatoes, and onions.

Some idea of the relative contributions of the various food groups to the diet is to be had from Table 5, a rather unwieldy (but instructively detailed) tabulation of per capita purchases among the households in Kumasi and Sekondi-Takoradi from which quantity data were obtained. Its more striking features are summarized below in percentage terms:

	Kumasi		Sekondi-Takoradi	
Food group	Calories	Protein	Calories	Protein
Starchy staples	70.2	32.4	63.5	30.7
Meat	7.2	25.8	4.8	14.9
Fish	3.3	23.9	5.6	36.5
Nuts, fats, and oils	11.4	6.4	21.1	13.0
Vegetables and pulses	3.6	8.3	1.4	2.6
Drink	.8	.2	.4	.2
Miscellaneous	3.5	3.0	3.2	2.1
Total	100.0	100.0	100.0	100.0

Among other things, the data suggest that roughly two-thirds of the calories in the typical diet in Sekondi-Takoradi are derived from the starchy staples, while in Kumasi even more—70 per cent—come from this source.

Diets dominated by the starchy staples are characteristic not only of Ghanaians and other Middle Africans, but of poorer peoples the world over.[13] This for a

[18] Some examples, as of 1934–38, from other low-income regions (*3,* pp. 214–15):

Country	Percentage of total calories derived from starchy staples
China	77
Philippines	73
India	69
Mexico	55
Brazil	50

By way of contrast, it is estimated that the starchy staples contributed only 32 per cent of the calories consumed in the United States during the same interval.

TABLE 5.—KUMASI AND SEKONDI-TAKORADI BUDGET SURVEY SAMPLES, 1955: AVERAGE DAILY PURCHASES OF FOODSTUFFS PER CAPITA, HOUSEHOLDS INTERVIEWED BY PERMANENT STAFF*

Foodstuff	Kumasi (120 Households) Quantity (*grams*)	Calories	Protein (*grams*)	Sekondi-Takoradi (96 Households) Quantity (*grams*)	Calories	Protein (*grams*)
Manioc and manioc products						
Fresh roots	222.2	243	2.0	418.8	456	3.8
Gari (meal)	13.5	46	.2	19.1	64	.3
Kokonte (dried roots)	62.6	212	.9	17.0	57	.2
Other[a]	4.9	10	–	3.4	7	–
Plantains	518.9	389	4.2	223.6	168	1.8
Yams	136.9	123	2.9	54.7	49	1.1
Maize and maize products[b]						
Kenky[c]	30.9	50	1.4	115.2	188	5.2
Dough[c]	21.4	43	1.0	24.7	49	1.1
Shelled maize	3.7	13	.3	11.8	42	1.1
Rice	28.2	101	2.1	31.0	111	2.3
Cocoyams	113.9	98	1.7	17.2	15	.3
Bread[d]	11.1	27	.8	18.8	47	1.4
Bananas[e]	13.7	9	.1	10.1	7	.1
Total starchy staples	*1,181.9*	*1,364*	*17.6*	*965.4*	*1,260*	*18.7*
Meat						
Fresh red meat	79.6	127	12.2	57.3	92	8.8
Canned red meat	1.6	4	.4	.3	1	.1
Poultry	1.1	1	.1	.3	–	–
Snails	20.4	8	1.3	4.6	2	.2
Fish						
Fresh fish	1.3	1	.2	17.6	12	2.2
Dried fish[f]	30.0	59	12.1	46.3	95	19.3
Canned fish	1.0	3	.2	.7	2	.2
Shellfish	2.6	2	.5	2.6	2	.5
Nuts						
Palm nuts	26.2	87	1.8	85.2	282	6.0
Other[g]	11.4	38	1.4	18.8	53	1.8
Fats and oils						
Palm oil[h]	6.9	52	–	5.0	44	–
Other vegetable oils[i]	5.6	37	.3	3.9	32	.1
Butter and margarine	.9	7	–	1.0	7	–
Vegetables						
Eggplant	42.9	8	.4	26.3	5	.3
Tomatoes	21.6	4	.2	21.5	4	.2
Onions	13.4	5	.2	13.1	5	.2
Peppers	18.0	4	.2	13.1	3	.1
Okra	9.7	3	.2	4.7	1	.1
Spinach	8.6	1	.2	6.1	1	.1

TABLE 5.—KUMASI AND SEKONDI-TAKORADI BUDGET SURVEY SAMPLES, 1955: AVERAGE DAILY PURCHASES OF FOODSTUFFS PER CAPITA, HOUSEHOLDS INTERVIEWED BY PERMANENT STAFF—(*Concluded*)*

Foodstuff	Kumasi (120 Households)			Sekondi-Takoradi (96 Households)		
	Quantity (*grams*)	Calories	Protein (*grams*)	Quantity (*grams*)	Calories	Protein (*grams*)
Pulses[j]	13.3	45	3.1	2.6	9	.6
Drink						
Beer	7.5	4	.1	5.5	3	.1
Palm wine	2.4	8	–	8.7	3	–
Soft drinks	1.2	1	–	4.7	2	–
Imported spirits	.6	2	–	.2	1	–
Miscellaneous						
Milk and milk products	14.9	29	1.4	14.0	26	1.3
Fruit[k]	13.8	6	.1	1.9	1	–
Sugar[l]	11.3	31	–	14.5	35	–
Salt	18.3	–	–	18.0	–	–
Eggs	1.1	2	.1	.3	–	–
Other[m]	.9	–	–	3.4	1	–
Total foodstuffs[n]	*1,570.0*	*1,943*	*54.3*	*1,367.6*	*1,984*	*60.9*

* Based on data in Gold Coast, Off. Govt. Stat. (Stat. and Econ. Papers), *Kumasi Survey of Population and Household Budgets, 1955* (No. 5, March 1956), pp. 48–49, and *Sekondi-Takoradi Survey of Population and Household Budgets, 1955* (No. 4, March 1956), pp. 44–45. Caloric and protein values computed by using conversion factors given in FAO, *Food Composition Tables—Minerals and Vitamins—For International Use* (Nutr. Studies 11, Rome, 1954), pp. 10–27; B. S. Platt, *Tables of Representative Values of Foods Commonly Used in Tropical Countries* (Gr. Brit., Medical Research Council Special Report 253, London, 1945), pp. 10–34; and Lucius Nicholls, *Tropical Nutrition and Dietetics* (3d ed., London, 1951), pp. 424–26, except in the case of palm nuts, for which values were derived by assuming 25 per cent waste and an oil content of the remainder of 50 per cent. Where quantities were given in terms of bottles rather than weights, the following bottle sizes were assumed: vegetable oils—half an Imperial gallon; beer, palm wine, and soft drinks—12 fluid ounces; imported spirits—one-fifth gallon.

[a] Dough and krako.

[b] Chiefly maize, but apparently also includes millets and sorghums.

[c] Calories and protein computed assuming kenkey (fermented dough balls) is 55 per cent water, dough 45 per cent water, as reported in Faye W. Grant, "Nutrition and Health of Gold Coast Children," *J. Am. Dict. Assn.*, July 1955, pp. 690–91.

[d] Includes biscuits and *togbei* (dough cakes).

[e] Bananas are not technically starchy staples, but as they are often prepared in the same way as plantains, they are included here as such.

[f] Includes smoked and fried fish.

[g] Coconuts, peanuts, tiger nuts, and kola nuts.

[h] Both palm-nut and palm-kernel oil.

[i] Coconut oil, peanut oil, and shea butter.

[j] Chiefly peas and beans.

[k] Oranges, limes, guavas, papayas, avocados, mangoes, and pineapples.

[l] Includes sugar cane.

[m] Coffee, tea, etc., and unspecified foodstuffs.

[n] Figures do not include allowances for meals taken out or snacks purchased away from home during the day.

very simple reason—their cheapness, whether expressed in terms of market price or production cost. As a general rule, less land and less labor expense are required to produce a thousand calories of energy value in the form of starchy staples than in the form of other foodstuffs. In southern Ghana, as Table 6 brings out, they are rivaled in this regard only by the oil palm. In Sekondi-Takoradi and Kumasi,

TABLE 6.—KUMASI (MARCH–APRIL 1955) AND SEKONDI-TAKORADI (FEBRUARY–MARCH 1955): AVERAGE RETAIL PRICES OF SELECTED FOODSTUFFS*

Foodstuff	Pence per thousand calories		Pence per kilogram	
	Kumasi	Sekondi-Takoradi	Kumasi	Sekondi-Takoradi
Manioc and manioc products				
Kokonte	1.37	2.26	4.63	7.66
Fresh roots	2.25	2.29	2.45	2.50
Gari	2.47	2.71	8.35	9.17
Maize and maize products				
Shelled maize	1.82	2.55	6.48	9.07
Kenkey	4.82	4.48	7.86	7.31
Plantains (fresh)	2.56	3.63	1.92	2.72
Palm nuts	2.90	1.34	9.60	4.45
Cocoyams	3.16	4.22	2.72	3.63
Rice (raw)	4.37	4.44	15.61	15.86
Yams	4.97	6.42	4.47	5.78
Bread	9.26	9.83	23.35	24.78
Smoked fish	26.19	24.11	53.42	49.19
Red meat (cheaper cuts)	28.94	22.29	46.31	35.67
Eggplant	39.70	50.45	7.94	10.09
Tomatoes	109.79	165.00	20.86	31.35

* Based on data in Gold Coast, Off. Govt. Stat. (Stat. and Econ. Papers), *Kumasi Survey of Population and Household Budgets, 1955* (No. 5, March 1956), p. 48; *Sekondi-Takoradi Survey of Population and Household Budgets, 1955* (No. 4, March 1956), p. 44; caloric values calculated using conversion factors given in the sources cited in the footnote to Table 5.

during the periods covered by the surveys, such other foodstuffs as meat, fish, and vegetables cost consumers between 10 and 50 times as much per calorie as did the principle starchy staples.

But if the diets of urban Ghanaians are those of poor people, it does not necessarily follow that they are poor diets. In Kumasi (see Table 5), recorded purchases per person amounted to the equivalent of 1,943 calories and 54 grams of protein daily, while for Sekondi-Takoradi the figures were 1,984 and 61. These totals, it should be noted, almost certainly understate actual consumption: estimated caloric and protein content were computed using the most conservative conversion factors, and meals and snacks taken away from home are excluded. They may understate actual intake by as much as from two to four hundred calories. But even at face value, they clearly point to a dietary which, at least in so far as protein and calories are concerned, is more than adequate. If, using the Oxford Scale, they are converted from a per capita to an adult-equivalent basis, the following picture emerges:[14]

City	Average daily intake per adult equivalent	
	Calories	Protein (*grams*)
Kumasi	2,841	79.4
Sekondi-Takoradi	2,841	87.3

[14] On the Oxford Scale of adult equivalents, the household head counts as one unit, other adults and children of 14 and over as .7 unit, and children under 14 as .5 unit (*41*, p. 7). Here, because of the age breakdown available, children under 15 have been taken as .5 unit.

Using the subsequently reduced 1948 recommendations of the Food and Nutrition Board as the basis for his calculations, Dr. Lucius Nicholls has suggested the following daily allowances for a 121-pound man living in the tropics (*31*, p. 315):[15]

Nature of work	Calories	Protein (*grams*)
Sedentary	2,100	60
Active	2,500	65
Very active	3,000	70

Though most meals follow day after day on the same broad plan, and are built around a limited number of staple foods, variety in the diet is not totally wanting. Not only does the sauce offer a great range for variation; the staple itself may be prepared in a number of ways. Although plantains, manioc, yams, and cocoyams are often merely peeled, boiled, and mashed before being served, the most common procedure is for the staple to be pounded into a flour or meal prior to cooking. With the cereals this involves either a grinding stone or a mortar and pestle; with the roots and tubers, slicing, drying, and sometimes cooking are also needed. Minor variations at this stage may result in totally different products. Manioc flour, for instance, is made by pounding roots which have been split and sun dried (*kokonte*), while the preparation of manioc meal (*gari*), altogether another thing, differs mainly in that, before drying, the roots are first grated and pressed (*28*, pp. 112–13). Once the flour or meal has been readied, many alternatives offer themselves. Simply by varying the amount of water that is added, for example, thin gruels as well as thicker porridges or pastes may be concocted. A Ghanaian cook book offers a comparatively wide range of dishes which may be prepared from a restricted number of staple ingredients.[16]

The brevity of the list of staple foods on which urban Ghanaians rely for the bulk of their calories is readily evident in Table 5. In Sekondi-Takoradi, just four crops—manioc, maize, plantains, and rice—supplied over 90 per cent of the calories derived from the starchy staples, while manioc and maize alone contributed almost 70 per cent. Much the same situation obtained in Kumasi, though as would be expected in view of its setting, the relative importance of the several crops was somewhat different. There, manioc and plantains were the chief calorie sources, together contributing two-thirds of those supplied by the staple foods, while yams, maize, rice, and cocoyams accounted for the bulk of the remainder. These figures must, of course, be taken with certain reservations; they relate to periods of only 30 days duration, and, as is shown later on, the relative contributions of the several staples change seasonally with local price and supply conditions. They are, however, indicative of a situation which prevails throughout the year.

[15] As this study went to press, an unpublished manuscript by Miss Pauline Whitby of the Medical Research Institute, Accra, was brought to my attention. In this manuscript, entitled "Calculations of Food Consumption and Nutrient Intake in Five Areas of Ghana," Miss Whitby offers some interesting estimates of the "normal" per capita caloric requirements of the populations of Kumasi and Sekondi-Takoradi. Using the standards set forth in the 1957 FAO *Report on Caloric Requirements*, these she put at 2,050 and 2,230 calories per day. Given the extent to which the survey data understate actual consumption, Miss Whitby's estimates offer further confirmation of the over-all adequacy of the caloric intakes suggested.

[16] For detailed descriptions of many common Ghanaian dishes and the methods of their preparation, see *24*, pp. 687–88 and *17*.

But restricted though the list of staples normally purchased by Ghana's urban dwellers may be, there is reason to believe that, because of their generally higher incomes, they consume a slightly greater variety than the rural population. This conclusion is suggested by Table 7, in which the findings of the Kumasi and

TABLE 7.—GHANA: RELATIVE CONTRIBUTIONS OF THE VARIOUS STARCHY STAPLES TO THE DIET IN KUMASI (1955), SEKONDI-TAKORADI (1955), SOUTH-EAST AKIM ABUAKWA (1952/53), AND THE ODA-SWEDRU-ASAMANKESE REGION (1955)*

Item	Urban		Rural	
	Kumasi	Sekondi-Takoradi	South-East Akim Abuakwa	Oda-Swedru-Asamankese
	Per Cent of Total Calories from Starchy Staples			
Manioc and manioc products.	37.5	46.3	50.4	41.5
Fresh roots	*17.8*	*36.2*	....	*40.8*
Processed items	*19.7*	*10.1*	....	.7
Plantains and bananas	29.2	13.9	17.7	29.6
Yams	9.0	3.9	2.2	2.9
Maize and maize products	7.8	22.1	5.6	7.7
Rice	7.4	8.8	—	1.2
Cocoyams	7.2	1.2	24.1	15.7
Bread	1.9	3.8	—	1.4
Total	100.0	100.0	100.0	100.0
	Total Calories from Starchy Staples			
Per person per day	1,364	1,260	1,435	1,312
	Sample Characteristics			
Number of households	120	96	832	1,080
Period covered	30 days (Mar.–Apr.)	30 days (Feb.–Mar.)	12 months (June–May)	3 months (Oct.–Dec.)

* Based on data in Table 5; and Gold Coast, Off. Govt. Stat. (Stat. and Econ. Papers), *Agricultural Statistical Survey of South-East Akim Abuakwa, 1952–53* (No. 1, September 1953), p. 10; and *Survey of Population and Budgets of Cocoa Producing Families in the Oda-Swedru-Asamankese Area, 1955–1956* (No. 6, July 1958), pp. 91, 98; caloric values calculated using conversion factors given in the sources cited in the footnote to Table 5.

Sekondi-Takoradi surveys are compared with those of similar investigations conducted about the same time in two rural areas—South-East Akim Abuakwa, extending northward from Nsawam for about 25 miles; and the Oda-Swedru-Asamankese region, similarly situated with respect to the town of Swedru. Though both of these areas are located in the Forest, Ghana's richest and most diversified agricultural region, in neither do we find quite the variety of staples observed in the cities, chiefly because neither rice nor bread was consumed to any appreciable extent. Both these items, it should be noted, are comparatively expensive and (though rice is grown in some parts of the Forest) imported.

That the surveys cited in Table 7 should point up manioc, a root crop, as the pre-eminent staple in urban as well as rural diets in southern Ghana warrants

a word of explanation. As a general rule, the starchy roots and tubers grown in Middle Africa do not lend themselves readily to commercialization. The cereals, concentrated and relatively imperishable, can be transported from place to place at little cost. Most of the roots and tubers cannot be. Though cheaply produced in humid regions, because of their bulky and semi-perishable nature, they tend quickly to lose their price advantage if moved any great distance. Thus, while cocoyams figured importantly in the diets of peasants in the South-East Akim Abuakwa and Oda-Swedru-Asamankese regions, they were too costly to do so in Kumasi and Sekondi-Takoradi.

Manioc, however, is a singularly versatile commodity. Unlike the other roots and tubers, it need not move to market in fresh form. Quite commonly, especially if the distance to market is great, it is processed into kokonte or gari before leaving the farm. Both of these products compare favorably with the cereals in price and caloric value per pound, and in addition have good storage qualities. They are, moreover, not without appeal to bachelors and other busy urban consumers because both products are virtually ready to eat; with gari, one need merely add water. Still other features commend manioc to a prime role in urban provisionment. The least demanding of the staples with respect to soil requirements, it may be grown on land too poor to support cropping of any other kind; accordingly it is admirably suited to the overworked land surrounding the cities. Then too, it is a reliable year-round source of calories. Because its roots may be left in the ground for as many as 24 months after reaching maturity they need be harvested only when required (*28, passim*).

The contribution the various foodstuffs make to the diet is, of course, only weakly related to the position they occupy in the food budget. Thus, while manioc and the other starchy staples easily make up the most important group of foods consumed in Ghana's cities in terms of calories, their cheapness makes their significance from the point of view of expenditures appreciably less (*20,* pp. 22–23; *21,* pp. 44–45; *19,* pp. 48–49). This is clear from the following tabulation:

	Percentage of expenditures on food and drink		
Food group	Accra	Kumasi	Sekondi-Takoradi
Meat and fish	34	42	36
Starchy staples	35	28	32
Vegetables and pulses	9	12	12
Nuts, fats, and oils	5	7	8
Drink	6	4	5
Miscellaneous	11	7	7
Total	100	100	100

In terms of percentage of expenditures on food and drink, meat and fish tend to stand in the premier position; during the survey periods these two items together accounted for between 34 and 42 per cent of all outlays for food and drink. True, expenditures on the starchy staples were almost as great; still their secondary role is clear. Compared with these two groups, outlays for other foodstuffs were minor. The various nuts, fats, and oils, the second-ranking source

of calories, commanded but 5 to 8 per cent of expenditures, and the vegetables and pulses only slightly more. Drink and miscellaneous items accounted for the small remainder. These figures, of course, are averages for all income groups; surprisingly enough, however, the general magnitudes to which they point persist with remarkable constancy throughout the entire observed range of incomes.

Dietary Changes with Income

That the broad pattern of food expenditures changes little with income is one of the most striking revelations of the three surveys. So common among budget investigations conducted in Western countries is the finding that a rise in income is accompanied by a decline in relative expenditures on the cheaper foodstuffs (particularly the starchy staples) and by an increase in those for the more expensive commodities (most notably meat products), that the relationship has come to be treated as virtually axiomatic. Not so in urban Ghana, or at least not so over the range of incomes for which we have data. As Chart 4 brings out, the proportion of expenditures given over to the various commodity groups was for all practical purposes completely independent of total food outlays. Whether in Accra and Kumasi, where per capita food expenditures rose sharply with income, or in Sekondi-Takoradi, where they did not, the findings were the same: in the highest-expenditure classes as well as the lowest, the starchy staples, meat and fish, and the residual group of other foods each accounted for about a third of the total food budget.

It follows from this that the income elasticities of demand suggested by the surveys were much the same for all of the major food groups (*20*, p. 14; *21*, p. 38; *19*, p. 42):

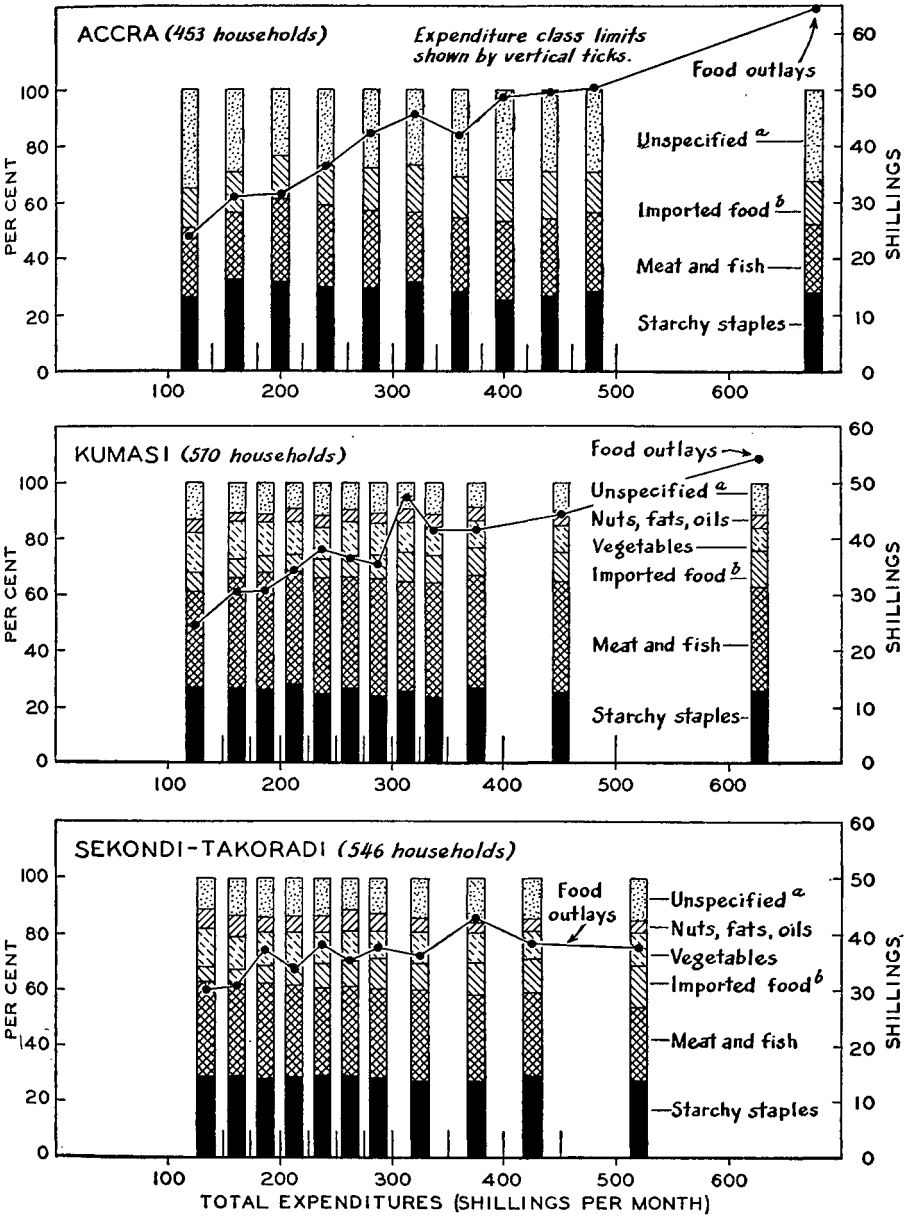
Food group	"Income" elasticity of demand[a]		
	Accra	Kumasi	Sekondi-Takoradi
Principal starchy staples	.89	.82	.77
Principal meat products	.92	.72	.80
Principal fish products	.82	.68	.35

[a] On a per capita basis. Computed by the double-log method, total expenditures rather than income having been used as the regressor.

In fact, the foregoing tabulation points to a demand for meat and fish which is no more income elastic (indeed perhaps a bit less) than the demand for starchy staples. This is exceptionally noteworthy. It is a widely held supposition that most Middle Africans have a strong craving for animal proteins which low income prevents them from satisfying. That the immediate extent of this desire may well be overestimated is implicit in our findings.

It also follows, given the over-all rigidity in the pattern of food expenditures, that most of the dietary changes which accompany rises in income are the replacement of cheaper and less preferred products by more highly regarded ones in the same commodity grouping. This is borne out by the data presented in Charts 5A and B, though it must be noted that with respect to the starchy staples the survey's findings on this point are rather less conclusive than might have been expected. (The heterogeneous character of Ghana's urban population prob-

CHART 4.—GHANA, URBAN HOUSEHOLD BUDGET SURVEY SAMPLES, 1953 AND 1955: PERCENTAGE BREAKDOWN OF FOOD EXPENDITURES, AND THE PER CAPITA MONTHLY FOOD OUTLAYS, BY EXPENDITURE CLASS*

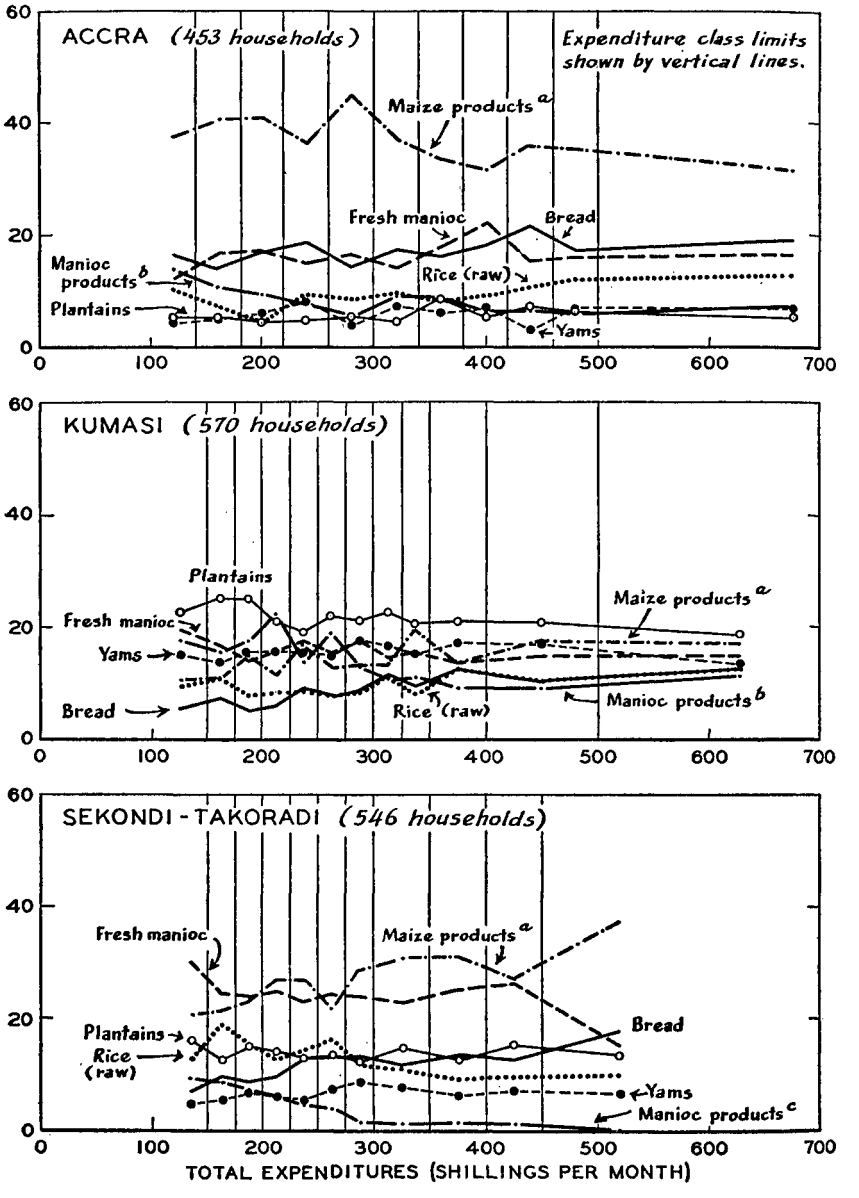


* Based on data in Gold Coast, Off. Govt. Stat. (Stat. and Econ. Papers), *1953 Accra Survey of Household Budgets* (No. 2, December 1953), pp. 10–14; *Kumasi Survey of Population and Household Budgets, 1955* (No. 5, March 1956), pp. 36, 37, 42; *Sekondi-Takoradi Survey of Population and Household Budgets, 1955* (No. 4, March 1956), pp. 32, 33, 38. Positioning of data for extreme expenditure classes reflects actual average expenditures; for other classes the midpoint. Figures do not include expenditures on drink.

[a] A residual figure. In addition to such truly unspecified items as snacks purchased away from home, it includes expenditures for the less important starchy staples, meat and fish items, vegetables, and nuts, fats, and oils. (For Accra, of course, it includes all outlays for items in the latter two groupings.) It is best thought of as being prorated among the major commodity groups.

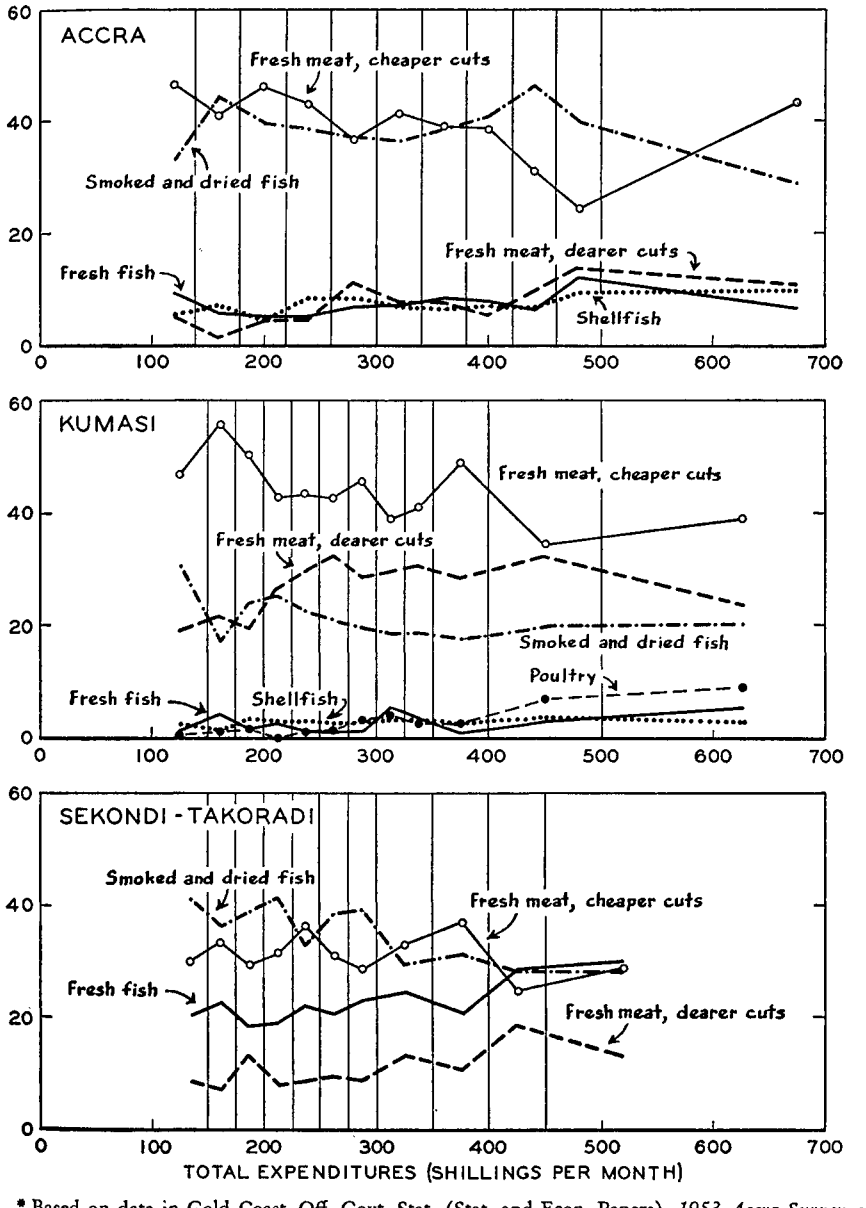
[b] Packaged imported items. It includes such things as sugar and canned meat and milk, but not wheat flour and the like.

CHART 5A.—GHANA, URBAN HOUSEHOLD BUDGET SURVEY SAMPLES, 1953 AND 1955: EXPENDITURES FOR SELECTED STARCHY STAPLES AS A PERCENTAGE OF TOTAL OUTLAYS FOR THESE ITEMS, BY EXPENDITURE CLASS*



* See source note on opposite page.
[a] Kenkey and dough.
[b] Gari and kokonte.
[c] Kokonte.

CHART 5B.—GHANA, URBAN HOUSEHOLD BUDGET SURVEY SAMPLES, 1953 AND 1955: EXPENDITURES FOR SELECTED MEAT AND FISH PRODUCTS AS A PERCENTAGE OF TOTAL OUTLAYS FOR THESE ITEMS, BY EXPENDITURE CLASS*



* Based on data in Gold Coast, Off. Govt. Stat. (Stat. and Econ. Papers), *1953 Accra Survey of Household Budgets* (No. 2, December 1953), p. 14; *Kumasi Survey of Population and Household Budgets, 1955* (No. 5, March 1956), p. 42; *Sekondi-Takoradi Survey of Population and Household Budgets, 1955* (No. 4, March 1956), p. 38. Positioning of data for extreme expenditure classes reflects actual average expenditures; for other classes the mid-point.

ably accounts for this result. With traditional food preferences differing from one tribal group to the next, it may well be that some of the less significant movements tended to cancel one another.) Thus, at first glance it is difficult to perceive in Chart 5A any clear-cut correlations between income levels and relative expenditures on the individual staple foods. Indeed, closer examination fails to reveal any significant tendencies whatsoever for yams and plantains, both thought to be highly esteemed by most Ghanaians; while relative outlays for maize products increased with income in Kumasi and Sekondi-Takoradi, but declined sharply in Accra. So too with rice, another comparatively dear commodity considered to enjoy a preferred position among urban consumers. Only in Accra did relative outlays for rice go up with income; in Kumasi no trend is evident, while in Sekondi-Takoradi expenditures actually fell off.

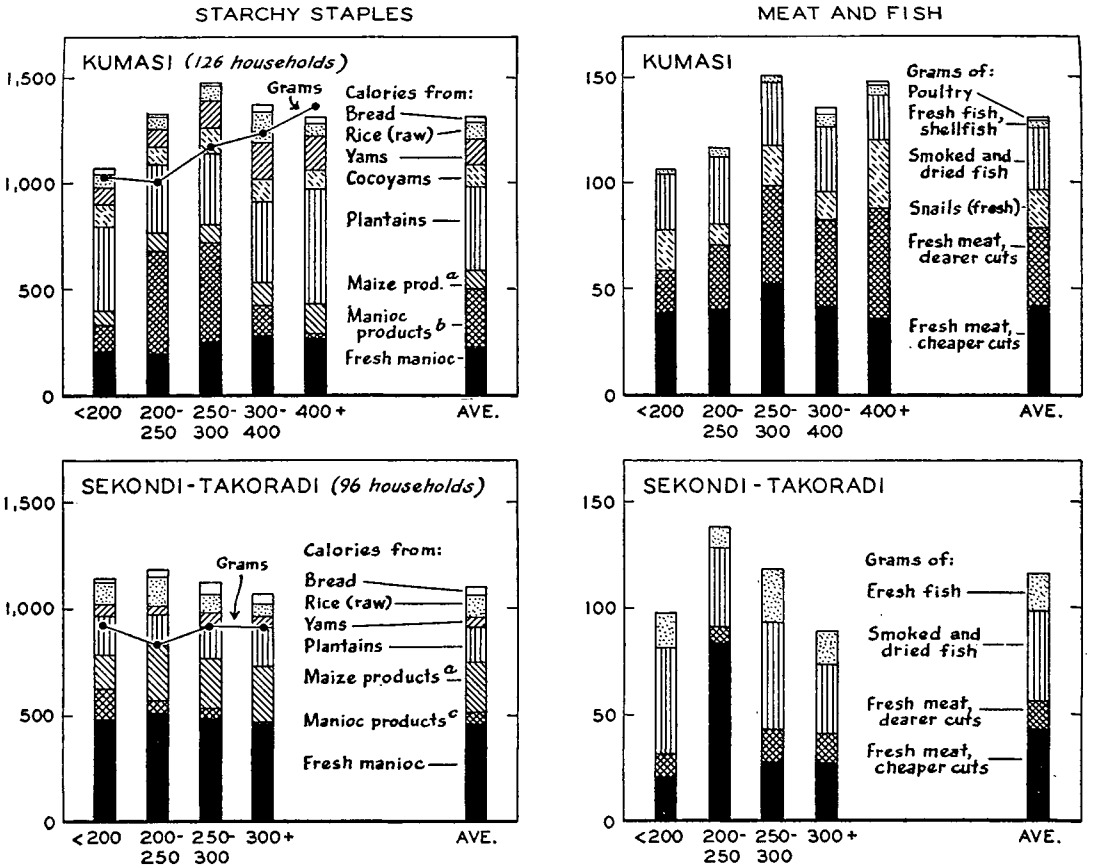
Still, two consistent tendencies are discernible. In all three samples, expenditures for bread rose significantly with income. The trend was particularly pronounced in Kumasi and Sekondi-Takoradi; there, income elasticities of 2.03 and 1.74 are suggested, as against 1.01 for Accra.[17] This preference for bread, by far the most expensive starchy staple in terms of cost per 1,000 calories, almost certainly mirrors the convenience it offers to urban consumers. Chiefly purchased for meals to be eaten on the job at lunch time, it is easier to carry, simpler to eat, and probably better liked than any of the prepared indigenous foods. Then too, considerable prestige is attached to eating bread; it has become the "modern" thing to do, and Ghanaians are no more immune to the challenge of keeping up with the Joneses than anyone else (*26,* p. 14).

The only other consistent correlation relates to the dry manioc products, gari and kokonte, and is an inverse one. Outlays for these products (in Sekondi-Takoradi the data are for kokonte alone) declined sharply as income rose, to the end that in the highest-expenditure classes they commanded only a trivial portion of the food budget. This apparent aversion to gari and kokonte (despite their ease of preparation) is most important, for, as noted above, manioc is probably the one foodstuff best suited to play a key role in the provisionment of Ghana's cities. Accordingly, it is almost with a sense of relief that one fails to find evidence of a similar lack of preference for fresh manioc roots. In fact, the Accra and Kumasi data suggest a tendency for fresh roots to be substituted for the dry products as income rises.

The extent of the dietary adjustments brought on by these two income-expenditure relationships is illustrated in Chart 6 (which relates to the subsamples in Kumasi and Sekondi-Takoradi from which quantity data were obtained). Changes in the quantities of bread purchased were negligible. In Sekondi-Takoradi, where the trend is clearest, apparent per capita consumption rose only slightly—from 25 calories per day in the lowest-expenditure class to but about double that amount in the highest. This, of course, reflects the costliness of bread; rather substantial changes in expenditures are needed to appreciably alter the quantity consumed. The opposite is true for gari and kokonte. Among the

[17] These elasticity figures have only limited significance. Much of the bread consumed in Ghana never reaches the home, but is purchased for snacks or for lunches on the job, and escaped inclusion in the bread item in the surveys. A comparison of flour import data with the bread quantity figures reported for Kumasi and Sekondi-Takoradi reveals a sharp discrepancy (*26,* pp. 10–11).

CAPITA DAILY PURCHASES OF SELECTED STARCHY STAPLES AND MEAT AND FISH PRODUCTS, BY EXPENDITURE CLASS*



* Based on data in Gold Coast, Off. Govt. Stat. (Stat. and Econ. Papers), *Kumasi Survey of Population and Household Budgets, 1955* (No. 5, March 1956), p. 44; *Sekondi-Takoradi Survey of Population and Household Budgets, 1955* (No. 4, March 1956), p. 40; caloric values calculated using conversion factors given in the sources cited in the footnote to Table 5. Because data relate to principal foodstuffs only, average figures do not add to totals given in Table 5.

[a] Kenkey and dough. [b] Gari and kokonte. [c] Kokonte.

cheapest sources of calories available in the city markets, a modest shift in expenditures for them results in large quantity differences. We may conclude, then, that the only truly significant adjustment in the staple dietary of Ghana's urban dwellers that can consistently be expected to accompany a rise in income is for consumption of the dry manioc products to decline.

Chart 6 is revealing in another respect: it sheds light on a question which has provoked a good deal of discussion among economists interested in Ghana. In a series of articles published a few years ago in the journal of the Economic Society of Ghana, Miss Polly Hill remarked on some of the findings of the urban budget surveys which she found puzzling (*25*). Chief among these was the suggestion, evident at first glance in the data for Kumasi and Akuse,[18] that rising incomes were associated with a marked increase in the quantity of staple foods consumed. Thus, in Kumasi, she noted that households which spent in total 400 shillings or more per month on all their domestic requirements, purchased around 1,350 grams of the starchy staples daily per person, as opposed to about 1,000 grams in households with total expenditures below 250 shillings. This apparent tendency to eat "more in bulk the richer one gets" she termed the "cassava law"[19] (*25*, Pt. 2, p. 6).

Unable to believe the "law" was actually true—for it implied that in even the highest-expenditure classes people behaved as if they were getting insufficient to eat—Miss Hill attempted to offer an explanation. This she succeeded in doing, quite convincingly, in terms of the African "extended family" system and the almost obligatory hospitality it entails. Where the traditional customs are still preserved, the canons of hospitality dictate that a man feed any of his or his wife's myriad relatives who happen to visit him, no matter how long they choose to stay, and generally too those individuals who chance to call near mealtime. Reasoning that this "family parasitism" applied particularly in urban areas, to which a steady stream of single men come to seek their fortunes, Miss Hill suggested that the apparent rise in staple-food consumption could most logically be accounted for by increasing kinship obligations; as a man's income went up, more and more relatives would find it convenient to call—a better meal would be expected. The implications of this were far reaching. In Miss Hill's words, "if it [the 'cassava law'] is to be explained in terms of gifts and hospitality, then the fears of the economists and sociologists are indeed well founded—our urban . . . society is such that only the exceptional man, the man who is prepared to ignore his social obligations and civilities to his fellows, can better himself by his own efforts" (*25*, Pt. 3, p. 7).

It would seem, however, that on this point at least, economists and sociologists can rest easy. Though admirably reasoned, the analysis contains one error, and it is a fatal one. For while it is undeniably true that the total quantity of staple foods purchased per person increased with income in Kumasi (and in Akuse), apparent per capita consumption expressed in terms of calories exhibited no such tendency. In fact, a glance at Chart 6 reveals that, after having increased somewhat in the lowest-expenditure classes, apparent per capita intake of calories derived from the starchy staples actually declined in the highest two.

[18] For reasons noted above the Akuse survey is not considered in this study.
[19] In the former British West African Territories, manioc is generally called cassava.

(Worth noting is the general constancy of the calorie figure throughout the entire range of incomes sampled in Sekondi-Takoradi). There is, of course, no conflict. All that happened was that as income rose, the dry manioc products were increasingly supplanted in the diet by the bulkier staples (chiefly plantains and yams),[20] thereby on a weight basis creating the impression of greater consumption. Exit, then, the "cassava law" and all its discomforting corollaries: they rest on an illusion.

Miss Hill also expressed puzzlement over the trends in meat and fish consumption evidenced in the surveys. In this connection, it can only be reiterated that the data fail to bear out the supposition that a rise in income is accompanied by a sharp upturn in consumption of animal proteins. In Kumasi a rising trend was evident, but it could hardly be considered the "strong consistent upward" movement for which Miss Hill was looking; while in Sekondi-Takoradi apparent intake in terms of grams was actually less in the highest-expenditure class than in the lowest. This last is indeed surprising and, other than pointing out that quantity data by expenditure class are available only for selected principal foodstuffs and that in Sekondi-Takoradi particularly, Chart 6 does not include figures for many of the more expensive products, I will make no attempt to account for it. A thesis by Miss M. Crossley is perhaps worth noting, however (*9*, p. 15). Observing that apparent meat and fish consumption tended to be highest among households with incomes in the middle range of those sampled, she has suggested that this might reflect some sort of "natural expression of the need" for certain persons to eat more of the protein-rich foods than others—her not unreasonable assumption having been that people with incomes in the middle range were chiefly manual laborers, as opposed to clerical employees in the higher brackets.

But apart from this seemingly anomalous behavior in Sekondi-Takoradi, there appears little basis for puzzlement. The data merely emphasize what has already been stressed—that throughout the entire range of incomes observed, the over-all dietary pattern changed little, meat and fish being no exceptions. The consumer, according to his own particular likes and dislikes, improves his diet as his income rises, but apparently feels no compulsion to alter its general composition. Whether this behavior carries over into the highest-income brackets is, of course, quite another matter. It may, or it may not; we simply do not know.[21] And, until additional and more representative investigations are carried out, it would be a mistake to speculate.

SUPPLY CHARACTERISTICS

The system through which foodstuffs flow into Ghana's cities is at the same time both simple and involved: simple because most commodities reach the consumer in exactly the same form as they leave the farm; involved because a given item commonly passes through several markets and through the hands of many intermediaries before arriving at it final destination.

[20] The tendency for gari and kokonte consumption to decline with income is also evident in the data for Akuse. See *28*, p. 201.

[21] It is interesting to note, however, that in their recent study of the elite in Nigeria, Hugh and Mabel Smythe found that "food has little relevance to social status." "The elite," they go on to say, "may be able to afford a finer cuisine than the rest of the population, but they usually adhere to the standard dietary pattern" (*39*, p. 145).

The Market Chain

The shop and the shopkeeper, as known in Western societies, play only a minor role in the economic life of Ghana. Instead, internal trade is conducted almost entirely through local markets. In the larger towns and cities these markets are vast, relatively elaborate affairs, attended by many thousands of persons[22] and extending over several blocks. In the countryside they are far less pretentious. The typical rural market occupies no more than an acre or two in the middle of a village or in a clearing between villages, and is equipped with few amenities save some flimsy lean-tos. In Ghana, where markets are indigenous and highly developed, most people live within a few miles of several such sites, and on market days they flock there to visit, court, and enjoy themselves as well as to trade.

These small rural markets serve as places for exchange both between local farmers and between farmers and traders who purchase for resale in the towns and cities. As feeder markets they are related to one another and to the country's consuming centers through what have been called "market circles." The name reflects the fact that most farm people think of themselves not as being served by just one market, but as being near the hub of four or more, each of which is held on a different day. These circles generally overlap, so that most markets belong to several. The result is that the countryside is crisscrossed by a sort of chain mail of circles, making it possible for goods to move appreciable distances, while allowing those who trade in them to remain comparatively close to home.

Usually within each circle or series of circles there is at least one major market. These larger country markets, now invariably reached by a road of some type, form the funnels of the exchange system, channeling processed goods to their satellite markets and acting as collecting centers for foodstuffs destined for the cities. Such a bulking point is the market at Asesewa, located some 60 miles north of Accra in the heart of an important maize-producing region. Here, on Mondays and Fridays, a vast multitude assembles, including an average of about 4,000 persons—local growers as well as intermediaries who have bought in outlying markets—selling only foodstuffs. Trading with them are bulk buyers who come with empty trucks from all parts of the country (but especially Accra) and who ship directly to the cities. It is estimated that a minimum of 150 trucks visit Asesewa on market days and that (because those traveling short distances make several trips each day) the number of daily departures averages about 800 (*29*, pp. 38–41).

Once the trucks reach the cities, the loads which have been so laboriously assembled are quickly broken down. Generally this bulk-breaking process is carried out by a further series of intermediaries, each one dealing in smaller lots, until the retail stall-keeper or hawker will offer for sale no more than a few piles of the commodities in which she trades. The upshot is that by the time an item is purchased by the urban consumer it has passed through at least three markets and been handled by perhaps a half-dozen intermediaries; and it is by no means unusual for double those numbers to have been involved.

This trade in foodstuffs is managed entirely by Africans. In Ghana, as in

[22] Of sellers alone, Accra's 11 markets count well over 25,000 (*34*, p. 7).

most other countries of western tropical Africa, an energetic group of traders has grown up, its members handling all stages of food collection and distribution. This class has long existed; but, encouraged by the trend toward urbanization and the concomitant expansion in the road network and cash cropping, it has grown greatly in size and affluence since the war. Today, the speeding trucks of African entrepreneurs are a characteristic feature of the Ghanaian scene, each one representing a major investment of hard-won savings, and each one attesting to the enterprise, if not the skill, of a new commercial élite.

Surprisingly enough to the outsider, the greater part of the food trade is conducted by women. With few exceptions—livestock products are the most significant—they dominate all of its aspects. It is the farmer's wife, not the farmer, who walks up to five or ten miles each day to market a headload; it is the "mammy trader" who assembles these small lots and sends them to town; it is she who prevails in the great city markets; and more often than not it is to one of her more prosperous sisters that the fancifully decorated truck—"mammy wagon" is not a misnomer—will belong. How women came to control this crucial sector of the economy is not altogether certain, though it doubtless in part reflects a legacy from a time (not so many years ago) when only women could venture far from their villages with impunity. But be that as it may, it is the women who now dominate the market place. "The market mammies occupy a very important position in this semi-capitalistic society of ours," President Nkrumah has been quoted as saying (*35*, p. 139). If anything, he is guilty of an understatement.

This indigenous system of urban provisionment is a source of considerable pride to Ghanaians, and justifiably so. Nonetheless, it has not been free of criticism (cf. *35*, p. 53; *7*, pp. 22–23). Not a few observers have contended that because the system lacks the centralized direction and the greater capitalization which the European firms and marketing boards dealing in export crops can bring to bear, it has been rather less effective than these entities in calling forth production. Also, because of the lengthy chain of intermediaries involved, some have argued that the system fosters unduly large differentials between producer and consumer prices.

As to the second of these criticisms, it may be noted that the number of its supporters has fallen off sharply within the last decade. For while the system is undeniably primitive from a technological point of view, as P. T. Bauer has emphasized at length (*2*), its heavy reliance on labor inputs is admirably suited to the present state of Ghana's economy. "So far from being wasteful," in his words, "it is highly economic in saving and salvaging those resources which are particularly scarce in West Africa (above all, real capital) by using those resources . . . [i.e., labor] for which there is very little demand. . . ." (*2*, p. 22). Increasingly it has come to be accepted that the large number and long line of intermediaries must find ample justification in the economies to be obtained from bulking and later breaking tens of thousands of tiny lots; otherwise they would have long since been bypassed.

More serious is the contention that the system is cumbersome and sluggish, that it fails to elicit from food producers the same response as do the more centralized and sophisticated buying organizations which purchase export crops. Here, regrettably, most of the argument on either side has lacked solid support

in empirical fact—and for good reason. Unlike the export trade, there has been for food movements an extreme paucity of data. Few are the sources to be tapped: hardly any of the thousands of traders keep records—even those who can read and write—and because most movements are internal, customs figures are of little value. Moreover, it has not been until the last few years that the trade has posed any serious problems for government administrators; few of them, accordingly, have felt any particular compulsion to encourage study of it.

Fortunately, a truly major step was recently taken toward correcting this state of affairs. This was a year-long census of produce movements conducted in 1957 and 1958 by the Office of the Government Statistician. Thanks to this census it is now for the first time possible to build up a reasonably complete picture of the sources and quantities of the foodstuffs which flow into one of Ghana's cities. It is also possible to infer something about the efficiency of the system through which they move. Strongly suggested is that the system permits both flexibility and regional specialization among supply areas, with the outflows from these areas changing over smoothly and efficiently from one season to the next.

The 1957/58 Produce Movement Census

Despite the fact that the census of 1957/58 yielded the first really serviceable results, the collection of food-movement statistics in Ghana has, by Middle African standards, a comparatively long history. Since as early as 1929 records have been kept of shipments passing over some of the Volta River ferries. In addition, on several occasions during the early 1950's both the Office of the Government Statistician and the Economic Research Division of the University College conducted brief traffic checks in the neighborhood of some of the larger towns and cities.[23]

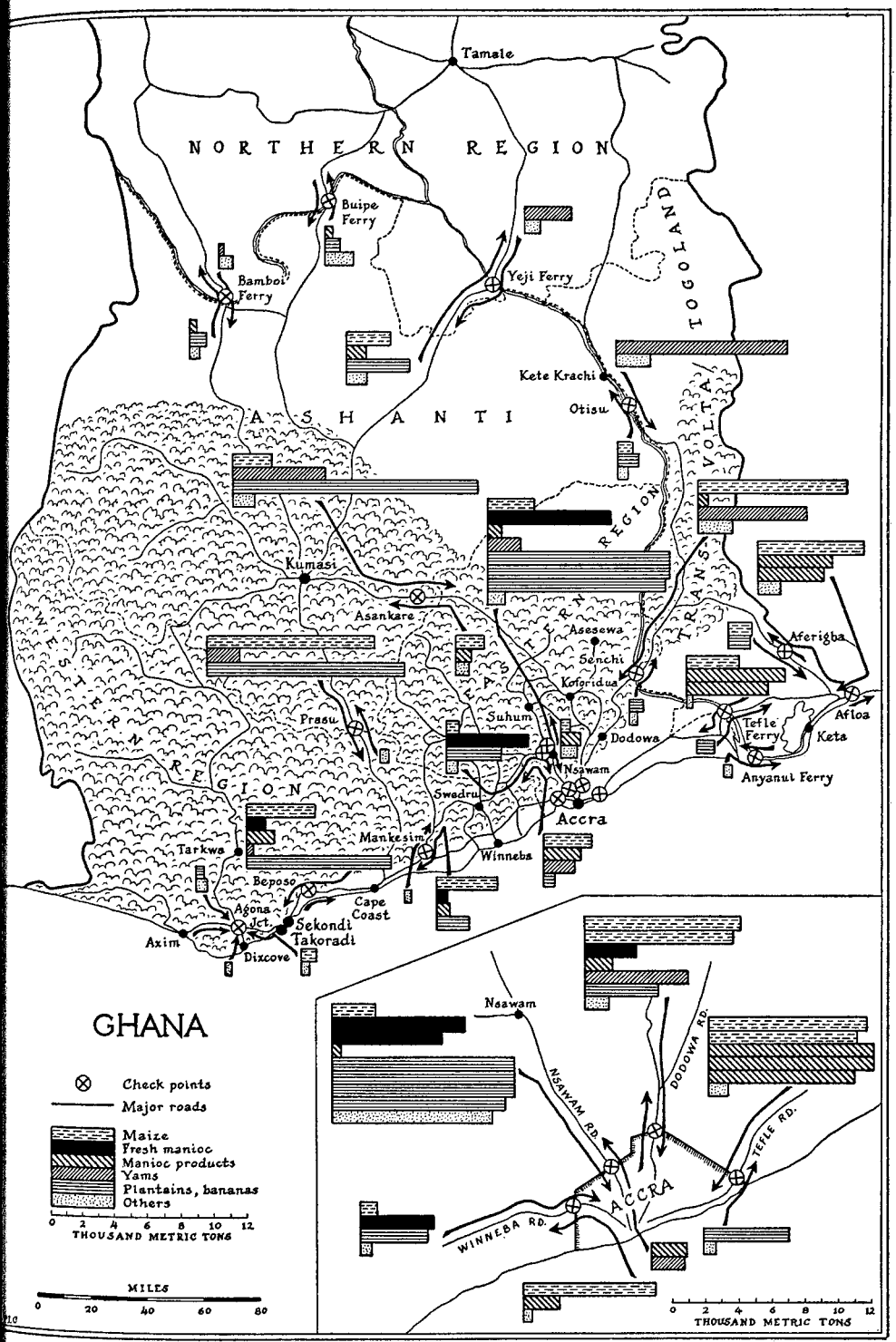
The data obtained, however, proved none too instructive: those from the ferry crossings mirrored only a tiny fraction of the total volume of foodstuffs moving toward the cities; those from the temporary surveys related to periods of not more than two-weeks duration. This situation the Government Statistician set out to rectify when, at the outset of the 1956/57 fiscal year, his Office was assigned exclusive responsibility for assembling statistics on produce flows. Beginning on October 1, 1957 the number of checking stations was greatly increased, and continuing through September 30, 1958 rather more information was collected at each than had been ever before.

Like the various short-term surveys which preceded it, the 1957/58 census was basically a record of the quantity of foodstuffs carried by truck.[24] In all, 20 check points were involved, a majority of them centered around Accra in the southeastern corner of the country (Map 2). Recording was done day and night, and at most of the stations all produce carriers were stopped. Traffic was so heavy at seven of the check points, however, that only sampling was feasible; at the six stations on the outskirts of Accra and Nsawam every tenth truck was halted, as was every third one passing the Asankare station. Each truck stopped was

[23] The findings of some of these short-term surveys are discussed in *45* and *32*.

[24] Rail movements were ignored because of their trivial quantity. During the 1953/54 fiscal year, rail shipments of specified livestock and food items (ex-cocoa) amounted to only 3,077 long tons (*22*, p. 55).

MAP 2.—GHANA, PRODUCE MOVEMENT CENSUS, 1957/58: ANNUAL FLOW OF STAPLE FOODS PASSING THE SEVERAL CHECK POINTS*



* Based on unpublished returns from the 1957/58 Produce Movement Census. Where data re-
ted other than by weight, tonnages were estimated using the following conversion factors: maize—
: 220 lbs.; rice—bag: 240 lbs.; millets—bag: 204 lbs.; sorghum—bag: 200 lbs.; manioc products—
: 150 lbs.; manioc roots—bag: 200 lbs.; cocoyams—bag: 150 lbs.; and yams—tuber: 7 lbs. Factors
m Ghana, Off. Govt. Stat., "Distribution Statistics—Produce Movements. . . . Conversion Fac-
" (n.d., mimeo.).
Movements of less than 400 metric tons not shown.

subjected to a thorough examination: origin and destination were ascertained, as was the size and composition of the cargo. This information was then entered into specially prepared forms, and at the end of each month summarized and forwarded to the central office in Accra.

Unfortunately, at this point an otherwise well executed program bogged down. Owing to an acute shortage of trained personnel, the central office was unable to give the incoming returns anything like the attention they deserved; unappraised, they were merely placed in files, and even now official analysis is thought to be some time away (*5*). The Government Statistician has, however, made the returns available to private scholars. Thanks to the courtesy of the Government Statistician and of my colleague, Mr. Marvin P. Miracle, I am able to set forth here some of the findings.[25] These relate to the starchy staples—the foods which, we have seen, comprise the basis of the Ghanaian diet.

Map 2 summarizes the total flow of staple foods recorded during the census. The over-all view it provides is revealing in several respects. Strikingly brought out, in the first place, is the trivial extent to which the consuming centers of the south draw on the northern half of the country for their staple food supplies. Apart from yams—the movements of which from the Kete Krachi area to Accra were recorded at the Otisu station—the region exported nothing of consequence. Indeed, the data for the Bamboi, Buipe, and Yeji ferries indicate the Northern Region was actually a net importer of staples during the year. This is unusual, however (*16*, p. 23). The 1958 season was an uncommonly dry one in the north, and during August and September the government was obliged to send there several thousand tons of maize and manioc products.

The map also clearly points up the urban areas on which the census sheds light. It will be seen that there were no check points in the vicinity of Kumasi; for this city, accordingly, little can be inferred. Much the same applies to Sekondi-Takoradi: the two stations in its environs were located rather too far (about 20 miles) from the urbanized area to record the total volume of movements destined thereto. For Accra, on the other hand, the check points were admirably situated. Four main roads link Accra to its hinterland, and on each of these a station was set up near the point where it crossed the municipal boundary. As food production within the city limits is inconsequential and may safely be ignored, the data collected at these four points, plus that assembled at outlying stations, permit us to construct a rather detailed outline of the origins and quantities of the staple foods consumed in Accra.

The Staple Food Supply of Accra

In all, the data indicate, a total of 144,000 metric tons of staple foodstuffs were imported into Accra during the census year. This total is altogether a reasonable one, and as such reflects favorably on the accuracy of the census. It represents, as Table 8 shows, the equivalent of 282 billion calories a year, or, assuming a 1957/58 population for Accra of about 370,000 persons, something like 2,088

[25] Because of the unique value of the census, the Food Research Institute has prepared a 20-page mimeographed summary of the basic statistics copied by Mr. Miracle. This includes a monthly, commodity-by-commodity statement of all starchy staples passing each of the 20 check points. Requests for copies should be addressed to the Institute.

TABLE 8.—GHANA, PRODUCE MOVEMENT CENSUS, 1957/58: NET ANNUAL INFLOW OF PRINCIPAL STAPLE FOODS INTO ACCRA*

Foodstuff	Net Annual Inflow (*Thousand metric tons*)	(*Billion calories*)
Plantains	41.6	31.2
Maize[a]	32.5	115.7
Manioc products	26.8	90.8
Fresh manioc	22.0	24.0
Bananas	5.5	3.7
Yams	4.5	4.0
Cocoyams	2.2	1.9
Rice	.6	2.0
Others[b]	8.3	8.7
Total	144.0	282.0

* Based on unpublished returns from the 1957/58 Produce Movement Census; caloric values calculated using conversion factors given in FAO, *Food Composition Tables—Minerals and Vitamins—For International Use* (Nutr. Studies 11, Rome, 1954), pp. 10–12, 18.

[a] Includes small amounts of sorghum.

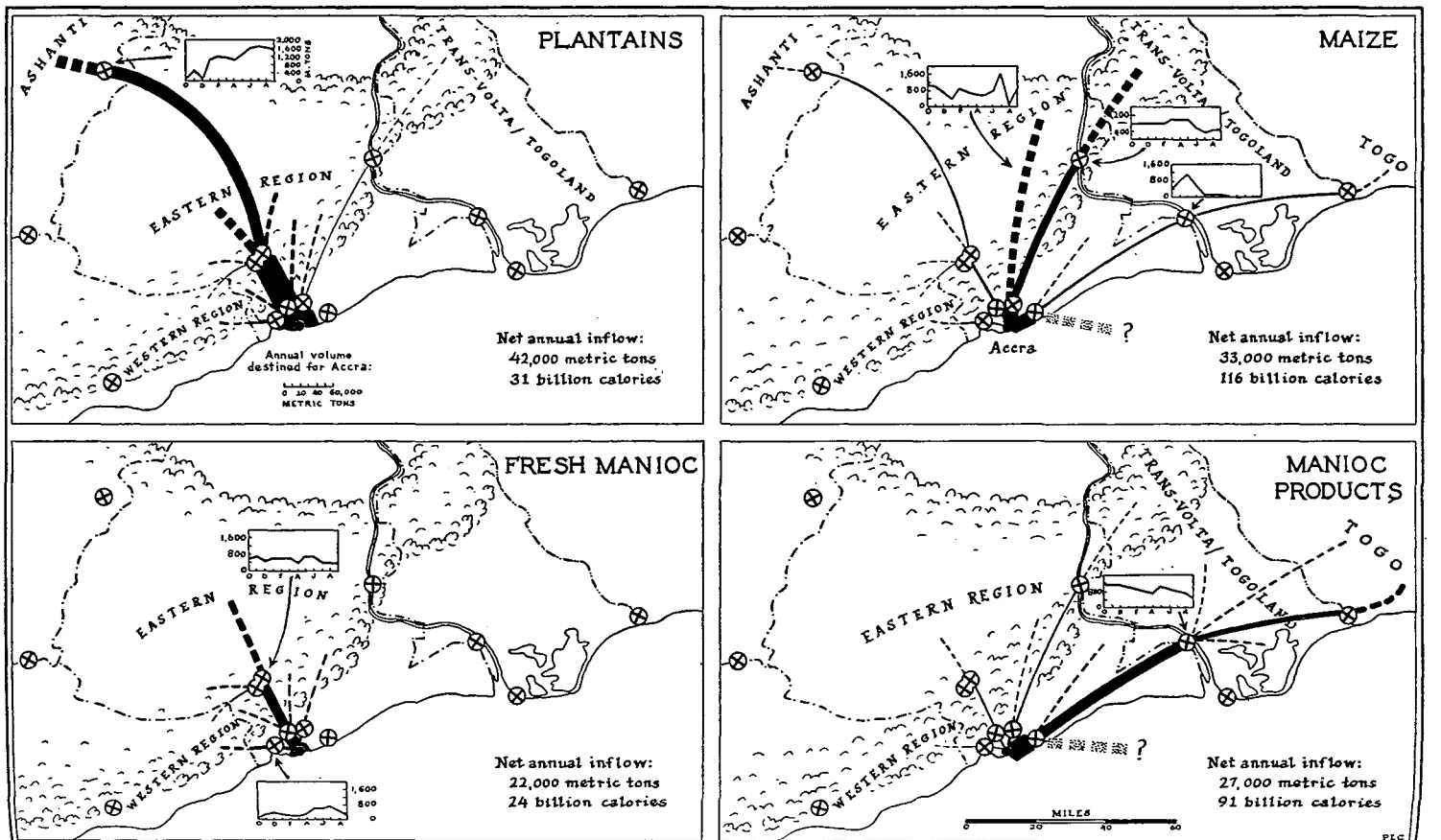
[b] Millets, "other cereals," and "other roots and tubers."

calories per person per day. While this last figure at first glance suggests a level of consumption considerably greater than that pointed to by the budget survey data for Kumasi and Sekondi-Takoradi (Table 5), most of the difference is surely illusory. Budget surveys by their nature invariably understate actual food availability and, as noted earlier, it is not unlikely that those for Kumasi and Sekondi-Takoradi did so by as much as from two to four hundred calories. Furthermore, it cannot be assumed that the full amount of the tonnage arriving in Accra was actually consumed. Some loss inevitably occurred, and though we have no basis for estimating how great this might have been, 10 per cent might not be an unreasonable guess.

As to the composition of this inflow, Table 8 offers further evidence of the limited number of staple foodstuffs on which urban Ghanaians depend for the bulk of their calories. Of the 395 metric tons of staple food products which arrived on the average in Accra each day, fully 85 per cent was made up of only four items: plantains (29 per cent; 114 tons), maize (22 per cent; 89 tons), processed manioc (19 per cent; 74 tons), and fresh manioc roots (15 per cent; 60 tons). Together these four items accounted for 93 per cent of the calories imported in the form of starchy staples—though by this criterion their individual importance was somewhat different. Because of their high water content, the combined caloric contribution of plantains and fresh manioc was but one-fifth of the total, whereas maize alone accounted for 41 per cent and the dry manioc products 32 per cent.

The areas from which Accra drew its supplies of these four main staples during the census year are shown in Map 3. This map, of course, is somewhat generalized, and as such should not be interpreted too literally. Since origin was recorded by administrative region rather than exact location, the dotted lines are meant only to be suggestive (although in positioning them I have made full

MAP 3.—GHANA, PRODUCE MOVEMENT CENSUS, 1957/58: DIRECTION AND ANNUAL MAGNITUDE OF INFLOW OF PRINCIPAL STAPLE FOODS INTO ACCRA*



use of available qualitative evidence). Otherwise, however, the findings of the census are faithfully portrayed. Where discrepancies occurred between check points (as happened only twice), the differences are indicated by a question mark.

Two things stand out in this map. One is the clear indication it gives of the distance over which the pull of the Accra market asserts itself. The area from which the city draws the foodstuffs extends far beyond its immediate surroundings in the Coastal Savanna. Indeed, the role this region plays is decidedly a secondary one, with the Forest and beyond supplying the bulk of Accra's requirements. About 55 per cent of the tonnage of the four main staples which arrived in the city during the census year came from places over 50 miles away, and some 30 per cent traveled 100 miles or more.

The other striking feature of Map 3 is the impression it conveys of the extent to which local specialization in commercial food cropping takes place. Apart from the Forest area to the northwest of the city, which supplies both fresh manioc and plantains, none of the regions provisioning Accra ships appreciable quantities of more than one major staple food item. Thus, while plantains and fresh manioc roots move in principally from the northwest, most of the city's maize comes from the north and northeast,[26] and the bulk of its processed manioc is imported from Togo to the east. That processed manioc should be brought in from Togo rather than from the same region as fresh roots warrants a word of explanation. The dry manioc products have achieved widespread acceptance among Ghanaians only within the past two or three decades. In Togo (and Dahomey), on the other hand, they have long been important staples; there, gari and kokonte processing has developed into a major industry, whereas in Ghana it is still in its infancy, with the quality of the output often decidedly inferior (*28,* pp. 77–80).

Togo also supplies maize to the Accra market; just how much, unfortunately, it is not possible to say. On this point, as the map shows, the evidence provided by the census seems conflicting. Specifically, the Tefle Road check point recorded far more maize arriving in the city from Togo than was noted at either the Tefle ferry or Afloa, the other two stations on the main road to Togo. This may or may not be valid; arguments can be offered both pro and con. The frontier between Ghana and Togo is long and poorly policed, and though the road through Afloa offers the quickest route to Accra, it is not unlikely that other routes are employed near the border to avoid payment of duties. Then too, shipment by water is not out of the question. On the other hand, however, the accuracy of the tally at Tefle Road cannot be considered above suspicion—if only because it was the sole check point that yielded data which cannot readily be reconciled with those of the others. As at the other three stations on the outskirts of Accra, checking at Tefle Road was on a sample basis, with one-tenth of the passing traffic having been stopped. The checkers were instructed to stop not any one of ten vehicles, but every tenth one. Conceivably, this order was improperly executed and a biased sample obtained. Much of the traffic from Togo reaches Accra late in the day when other traffic is light. Perhaps the checkers found it con-

[26] In line with the Department of Agriculture's belief (*12,* p. 90), I have indicated the Asesewa area as the chief source of maize in the Eastern Region.

venient to stop many trucks at that time to make up for omissions during the busier hours. This possibility notwithstanding, however, the price data for maize shown in Chart 7 suggest that the Tefle Road data are essentially correct. It will be seen that maize prices in Accra were at a minimum during the October–January period, the same months when most of the maize was recorded at Tefle Road. Were the bulk of this inflow from Togo illusory, it would be difficult to account for any decline in price; the opposite should have obtained.

The procedure followed in this study in computing aggregate inflow estimates for Accra has been to accept the questioned Tefle Road figures for both maize and processed manioc as they stand. Until official analysis of the full findings of the census is undertaken, we have no firm grounds for doing otherwise. It should be noted, however, that should the official appraisal reveal the Tefle Road figures to be in error by the amounts indicated in the map, it would have the effect of reducing the inflow totals given in Table 8 rather drastically—by about 70 billion calories, or something like 500 calories per person per day.

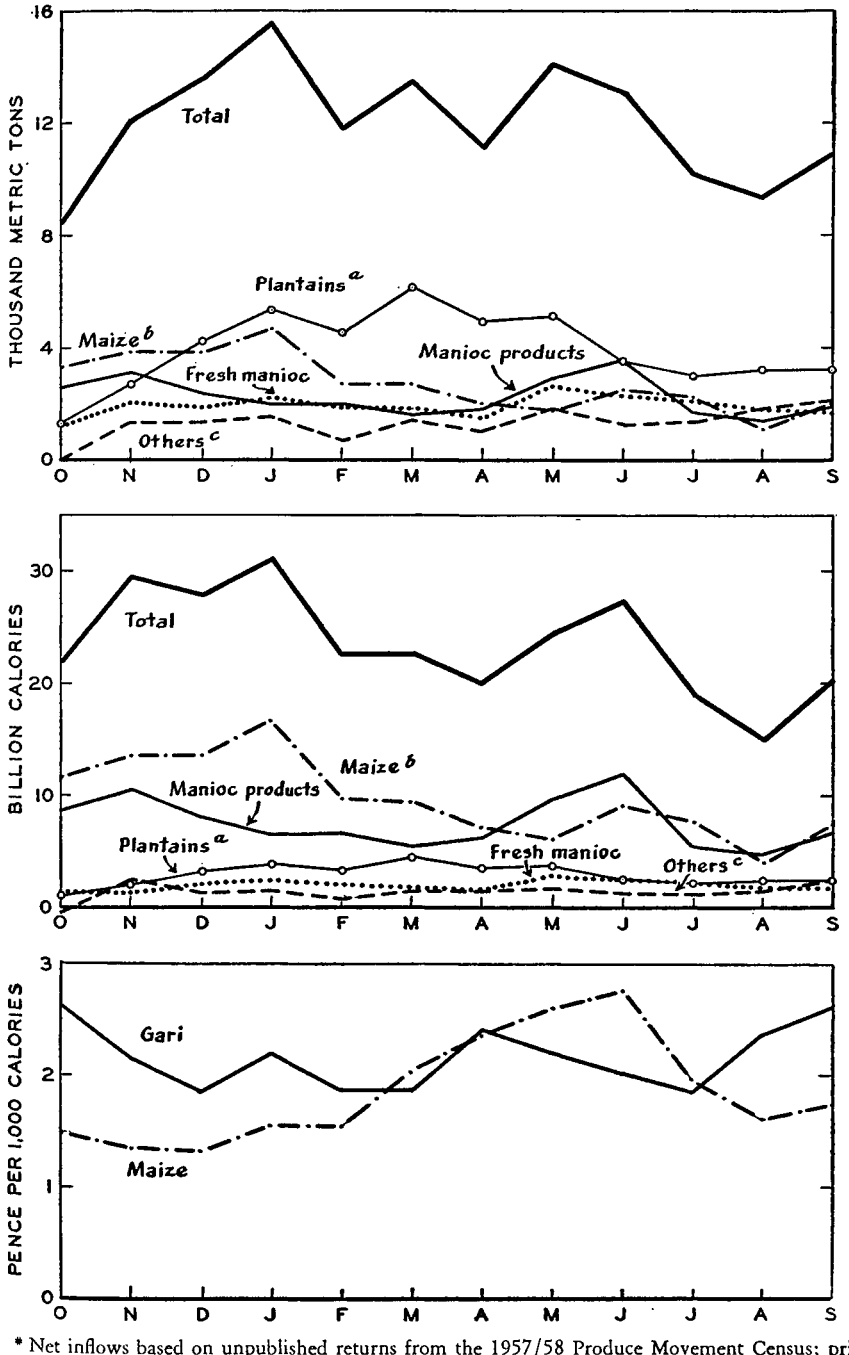
The various commodity flows illustrated in Map 3 are, of course, totals for the census year. As would be expected in view of the seasonal character of much of Ghana's agriculture, the individual magnitude of these flows varied from one time of the year to another. This is borne out both by the small charts within the map and by Chart 7, which summarizes on a monthly basis the net arrivals of the several staples in Accra.

Chart 7 is particularly worthy of examination: it contains the only direct evidence we have of the extent and nature of the seasonal changes which occur in the diets of urban Ghanaians. These, it suggests, are quite sizable. Arrivals of both maize and processed manioc, the two main suppliers of calories in Accra, varied greatly over the year, as did those of plantains, the third-ranking source. Plantains may be harvested virtually all year, the explanation for the variation in shipments probably lies in alternative uses for trucks. Most of the plantains consumed in Accra come from Ashanti and the forested area lying between that region and the city. These two areas also account for the bulk of the country's cocoa production. The main season during which cocoa is harvested and shipped to the coast extends from September through early January. It is during these months that plantain shipments to Accra were at a minimum.

The apparent variations in maize and processed manioc consumption almost surely reflect a combination of seasonal supply conditions and consumer preferences. Maize is harvested in southern Ghana and Togo during two periods of the year: midsummer, when the early crop of the forested regions matures; and October–January, when both the second crop from these areas and the only crop of the Coastal Savanna are collected. The result is that maize is in decidedly seasonal supply in the Accra market. Prices respond accordingly (Chart 7, bottom section). During the census year the price of maize was comparatively low between August and January, while it rose sharply during the spring and early summer months.

The effect of these price fluctuations on processed-manioc consumption seems clear. Though manioc is available for harvesting throughout the year, arrivals of the processed products in Accra were markedly seasonal. As the price of maize rose in the spring (to the point where it became rather more expensive

CHART 7.—GHANA, PRODUCE MOVEMENT CENSUS, 1957/58: NET MONTHLY INFLOW OF STAPLE FOODS INTO ACCRA; AND AVERAGE MONTHLY WHOLESALE PRICE OF MAIZE AND GARI IN THE ACCRA MARKET*



* Net inflows based on unpublished returns from the 1957/58 Produce Movement Census; price data from Ghana, Dept. Agr., *Monthly Report—Foodstuffs Supply Position* (various issues); caloric values calculated using conversion factors given in FAO, *Food Composition Tables—Minerals and Vitamins—For International Use* (Nutr. Studies 11, 1954), pp. 10–12, 18.

[a] Includes bananas.

[b] Includes sorghum.

[c] Rice, millets, yams, cocoyams, "other cereals," and "other roots and tubers."

in terms of calories than gari), imports of the dry manioc products increased greatly—to the extent, even, that they appear to have temporarily supplanted maize as the chief source of calories—only to drop off again a few months later when the relative price of maize declined. This complementary price-inflow relationship between maize and processed manioc is highly revealing. Not only does it offer further evidence of the less preferred position the dry manioc products occupy in the diet, it also strongly attests to the efficiency with which the marketing system responds to local price and supply conditions. The flexibility of the system seems such that urban consumers may confidently expect to receive adequate supplies of the cheapest energy sources available, no matter what the season of the year and no matter what their place of origin.

CONCLUDING OBSERVATIONS

The foregoing picture of the food economy of Ghana's cities is, of course, a partial and introductory one. Given the paucity of evidence on economic phenomena in Middle Africa, it could hardly be otherwise. Nonetheless, examination of the limited data now available has provided us with certain useful insights. Several of these, because of the extent to which they run contrary to previously held notions, seem important enough to justify reemphasis.

Among these, to be sure, are the broad conclusions which may be drawn regarding the functioning of the supply system. Despite its technological primitiveness, the efficiency of this system seems beyond doubt. Far from limiting Ghana's urban centers to hinterlands within a radius of twenty or thirty miles, it has, in conjunction with the recent improvement in the road network, enabled them regularly to draw staple foodstuffs from supply areas 100 miles or more away. Moreover, it has permitted producers in these areas to specialize in those crops for which their lands are best suited, and at the same time demonstrated a remarkable agility in responding to changing seasonal conditions. Manifestly it is a thing of value, as are the incentives which make it possible; cautious indeed should be any attempts (such as appear to be contemplated) to supplement or replace it with state controlled "cooperative" marketing ventures.

But if the operation of the supply system provides ample indication that Ghanaians are capable of responding efficiently and rationally to economic incentives, it does not follow that one can safely anticipate their future behavior merely through analogies with Western experience. This, perhaps, is the most significant revelation of the budget surveys. Particularly with respect to the type of dietary adjustments which accompany rises in income, a point of crucial future importance, we have observed a sharp divergence between reality and expectation: instead of incorporating greater amounts of animal proteins into their diets, the wealthier urban consumers apparently eat essentially the same type of meal as their less fortunate neighbors. The implications of this, of course, are all to the good from the point of view of production. Because the starchy staples are much easier and cheaper to produce than animal products, a continuation of present dietary patterns will lessen the demands on agriculture posed by urbanization. But why this rigidity should obtain remains obscure. Conceivably a whole new dietary must evolve (comparable to that which occurred a generation

or so ago in the United States when the salad course achieved widespread acceptance) before any appreciable changes in its composition can take place. But whatever the explanation, the pitfalls of blind extrapolation are obvious. Middle Africa is a world of its own. Essential to the accommodation of the problems of its future growth is an understanding of its present.

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MANIOC IN AFRICA: CORRECTION

Thomas T. Poleman's intensive study of the food economies of Ghanaian cities, published in this issue of *Food Research Institute Studies,* has uncovered two errors in the construction of Table 8–4 of my *Manioc in Africa* (Stanford, Calif., 1959). This table, entitled "Ghana: Average Daily Purchases of Manioc and Other Starchy Staples in Five Communities, 1954–56," is based in part on the same sources as Mr. Poleman's Table 5 and Table 7. My figures for Kumasi and Sekondi-Takoradi were based on summary tables in the original sources which failed to include some foodstuffs purchased in small amounts—krako, manioc dough, shelled corn (maize), prepared plantain, and prepared rice in both cities and gari in Sekondi-Takoradi. Inclusion of these products increases the total calories derived from starchy staples from 1,318 to 1,364 in Kumasi and from 1,104 to 1,260 in Sekondi-Takoradi. Calories from manioc as a per cent of all calories from starchy staples, however, are unchanged.

The data shown for South-East Akim Abuakwa in my table are also in error, apparently because they were calculated with an American short ton rather than the English long ton. The correct figures are given in Mr. Poleman's Table 7 and in my Table 8–5. They show manioc to account for 50 per cent of all calories from starchy staples instead of 46 per cent as shown in my Table 8–4.

W. O. J.