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Urban Fruit and Vegetable Supply in Dar es Salaam

Abstract

This study examines the processes by which fruit and vegetables are distributed to and within an urban environment. It uses an integrated approach to examine in detail the various channels of supply, particularly the role of the legal wholesale market. It argues that adopting a traditional approach to the study of such a highly complex topic, may result in anomalous, or biased results. This paper is based on a wider study which examines the processes of fruit and vegetable production, distribution and marketing in the case of Dar es Salaam. Its results suggest that the informal sector has expanded to take over the increasing demand that the wholesale market, Kariakoo, has been physically unable to deal with. Kariakoo is hindered by insufficient trading floor space, acute congestion, and operating at twice its designed-for capacity since the early 1980s. It estimates that by 1989 the formal sector accounted for only about 50 per cent of the fruit and vegetable wholesaling for the city, the remainder being dealt with by informal wholesalers or being sold by producers or rural-based traders direct to retailers. In addition, the formal sector has become increasingly specialised in its handling of vegetable produce, at the expense of fruit. The evidence suggests that this is a result of complementarity of the facilities offered by the formal wholesale market on the one hand and the more flexible informal sector on the other. The paper concludes by proposing that Kariakoo can best be characterised as operating in competition with the informal sector for wholesale produce. It is therefore proposed that future planning for urban fruit and vegetable marketing, should incorporate this thinking and learn from the operating advantages of each of the different sectors.

Key Words: Tanzania, food supply, food marketing, fruit and vegetables, informal sector.

The Context of the Study

The urban areas of most developing countries have experienced very rapid and concentrated growth, creating an ever swelling demand for food. The food supply systems become increasingly complex as the demand and the area required to supply this demand expands, such that it could be argued that an adequate and reliable food supply for the growing cities of Africa is the key urban problem today for that continent (Drakakis-Smith, 1991). As Sporrek puts it: "Few conditions can so easily deteriorate into a situation of social unrest as a malfunctioning urban food system" (Sporrek, 1985; p.12). Urban food supplies have crucial political implications, as in, for example, Sudan, Tunisia, Zambia and Egypt, where recent food riots have taken place. In each of these four examples, the urban unrest has placed enormous political pressure on the respective governments. "This may be explained by the fact that the city has the highest concentration of government officials, expatriates and diplomats and has the highest wage labour force. These three groups exert considerable pressure on the state to ensure the city's food supply" (Bryceson, 1985; p.504). Paddison et al (1992) suggest that the development and viability of cities in developing countries depends on the availability of sufficient food supplies for their population. The scarcity of the literature on urban food supply is highlighted by Drakakis-Smith: "The sparse nature of research of this topic stands in marked contrast to the literature on housing which is more voluminous, and yet urban social protest is far more likely to be initiated by food shortages or price rises than by housing problems" (Drakakis-Smith, 1991; p.51).

There is evidence in Tanzania that the decline in agricultural productivity, which took place during the period from the mid 1970s to the mid 1980s, is characterised by the withdrawal of peasant producers from the cash economy and their reversion to subsistence agriculture to ensure household reproduction (Hyden, 1980; Griffiths, 1980; and Raikes, 1986), or to producing for partial sale on an informal market or only within the local market (Bryceson, 1990). The benefit to the nation of this is that it ensures that the rural areas and nearby towns always have sufficient

food supply, whatever happens in the urban formal markets. The disbenefit is that the agricultural potential of the country is not fully realised and the result is a lack of food for non-producing households such as those in cities.

It is clear, then, that politicians, planners, local authorities and participant groups must have a comprehensive understanding of the urban food supply system, including production, if they are to have any positive influence on it.

Approaches to Urban Food Supply Studies;

The recent tendency to attempt to fuse perspectives of the various disciplinary approaches to food marketing, or food policy becomes clear from an initial review of the literature (see, for example, Hansen and McMillan, 1986; Gittinger et al, 1987; Guyer, 1987). This seems to be as a result of two factors. Firstly, previous strictly disciplinary research may arrive at erroneous, or simplistic conclusions because of an incomplete analysis of the food systems under consideration.

Secondly, food systems themselves - due to the importance of food to survival - are the subject of study in such diverse disciplines as agriculture, anthropology, economics, geography, marketing, medicine, sociology and, doubtless, more besides. The result is an approach to food supply systems which highlights aspects of a particular interest, or which is easier for a discipline to study, given the acceptable research methods available to it. "In studying market place trade as an aspect of economic development different social science disciplines have focused on different aspects of the problem" (Epstein, 1982, p.209). For example, an anthropological approach examines its subject from the perspective of the groups of people involved in the system, requiring the researcher to visit and live in the rural producing area, making observations and interviewing the participants (see, for example, Cohen, 1971; and Vennetier, 1972). An economic approach, on the other hand is interested in the variations in price and supply, and the role of capital in the system and will seek to collect data measuring these factors (see, for example, Jones, 1972). An approach concentrating on the impact of the food marketing system on the urban population's welfare can over-emphasise the role of the state at the expense of the already efficient marketing system (see, for example, Croll, 1983; Lawson, 1967 and Sen, 1982). Geography has tended in the past to concentrate on the spatial patterns of the marketing system and the marketing outlets (Sporrek, 1985; Boekholt and van der Veen, 1985;), or more recently on the pattern of urban farming as a means of subsistence food provision (Maxwell and Zziwa, 1991). Legitimate though these approaches are within their discipline, they do not provide an overall view of the food supply system. For example, Hill (1963) demonstrates the difficulties of approaching the subject of markets in Africa from a quantitative point of view:

"It is not so much the heat, the glare, the bustle, the over-crowding, the noise, the shouting, (and consequent hoarseness), or even the sneezing caused by open bags of pepper and maize (for all this is compensated by the very courteous behaviour of Africans in markets) -- the difficulties are rather the extreme fluidity and complexity of the undocumented situation and the need to trouble informants at their moment of maximum anxiety, when they are concluding transactions.

Hill, 1963, P.445

Guyer (1987) argues that although this disciplinary diversity has provided researchers with varied insights into food supply, a juncture has been reached in its study where "...particular dynamics cannot be studied without a recomposition of the field" (p.6). Drakakis-Smith (1991) comments that research on food supply in "...geography, but also in related social sciences, has been patchy so that although some elements, such as the nutritional problems resultant from inadequate diets or the operation of markets, are reasonably well covered, it is difficult to formulate a comprehensive framework" (p.51).

In calling for an overall framework for the study of urban food distribution systems in Africa and Asia, Drakakis-Smith (1991) suggests that geographers are well placed to investigate the broad issues involved, since they "must focus not just on the commodity itself but also on the economic, social, cultural and political factors which affect the system" (p.51).

This paper uses an integrated approach to identify and analyse the chains for the marketing of fresh fruit and vegetables in an African urban environment. The focus for this approach will be the city of Dar es Salaam, Tanzania. The literature relating to food provision in Dar es Salaam has been sporadic. The early work of Mascarenhas and Mbilinyi (Mascarenhas and Mbilinyi, 1971; Mbilinyi and Mascarenhas, 1973) examined the supply chain linking the rural producers of individual commodities with the urban retail markets, concluding that the food supply system is very complex and disorganised and works to the disadvantage of producers. Sporrek (1985) carried out a comprehensive survey of the location of outlets of a wide range of commodities including food around the city of Dar es Salaam. More recently, work has focused on the activities of the consumers and the market traders. Firstly, Briggs (1990) researched the marketing of food crops in the peri-urban fringe of the city as part of a wider study of changes in the peri-urban fringe. This has demonstrated evidence of an increase in the value of land around the city as middle-income inhabitants seek land with which to grow crops for subsistence and, increasingly, for sale. Maliyamkono and Bagachwa (1990), in a review of the informal, or second, economy in Tanzania, devote considerable attention to the marketing of staple foods, their work will be referred to later in the paper.

Dar es Salaam, Tanzania

Dar es Salaam is the former colonial capital of Tanzania and remains still the administrative and economic core of the country. The 1988 census results indicate that the city's population is 1.4 million with 4.8 per cent per annum growth rate (Government of Tanzania, 1989). However, Briggs (1993) draws attention to several problems in the 1988 census which suggest serious undercutting, and proposes a more realistic estimate could be nearer to 2 million. Clearly this constitutes an area of enormous and rapidly growing food demand. Until 1984, the government-owned National Milling Corporation controlled the marketing of staple foods. In 1984 the NMC's monopoly was revoked, effectively liberalising the market. However, the production and marketing of fruit and vegetables have had limited controls, and relatively limited support. By law all fruit and vegetables entering the Dar es Salaam Region with the intention of selling commercially must be sold to licensed wholesalers in Kariakoo Market, who then sell it on to sub-wholesalers or retailers. Within the market, the dealers have operated in open market conditions, with prices varying according to supply and demand.

It is at this stage where the food enters Dar es Salaam it may pass on to Kariakoo, the only legal option, or it may pass through the illegal channels, either selling to wholesalers or retailers outside Kariakoo. These channels are most frequently located in other retail markets. This practice is so widespread that the law is rarely enforced and the description of informal rather than illegal is a more appropriate one.

A considerable and growing literature has examined the issue of defining the formal and the informal sectors of an economy (Maliyamkono and Bagachwa, 1990). In the case discussed here informal and formal refers to the channels of distribution, and in this case the distinction is clear at the wholesale level. However, when the food commodities emerge at the retail level it is anything but clear how street hawkers or city council provide stalls should be described. Technically retailers with licenses are involved in legal activities, wholesalers dealing outside Kariakoo with produce from another region are involved in illegal activities. However, whereas in the early 1980s the city took a strict line - arresting and 'rusticating' streetsellers without licenses or without identification cards issued only by formal sector employers, it has gradually become apparent that these traders are providing a service

to the city's population. Gradually the arrests and police harassment have declined. In addition, there has been a growth in the confidence of 'informal' street sellers, with the emergence of legal private sector staple food trading .

A further source of fruit and vegetables, becoming increasingly important for Dar es Salaam residents, is to adopt the strategy of growing their own crops in or near to the city. It is very difficult to estimate how important this practice currently is, but Briggs (1991) suggests that "By the start of the 1980s, it was common for people to keep chickens in their gardens and to convert previously unused land around their house to the cultivation of maize, bananas and vegetables" (p.329, my emphasis). In the mid 1980s, coinciding with the 'liberalization' of the Tanzanian economy, Briggs, identifies a shift in emphasis towards commercial production of these crops in the peri-urban fringe to supply the urban market. This suggests that the pressures on the population continued the increasing trend in initially urban subsistence production and more recently commercial production. A number of authors have identified recent trends in issues in this increasingly important strategy of food procurement in Third World urban cities (Wade, 1987; Rakodi, 1988; and Briggs, 1990, 1991). Maxwell and Zziwa estimate that urban agriculture constitutes a major economic activity for over one third of households in Kampala and accounts for approximately 20 per cent of the city's food supply. Bryceson (1985) reports that urban households in Dar es Salaam were found to be deriving 39 per cent of their staple maize consumption from 'non-farm' sources. This was higher among lower income groups. Although she discusses elsewhere in the paper residents receiving food from rural-based families, a proportion is clearly obtained from urban agriculture.

When it was constructed in 1975, the Kariakoo Market Complex was located in a central commercial district close to Dar es Salaam's central business district called Kariakoo. The district is a very densely populated and busy area, with a concentration of shops and a number of bus route termini. It has been described as a second central business district (Kaitilla, 1990). The market was intended as the only legally specified wholesale market for fruit and vegetables in Dar es Salaam, Kariakoo wholesale market was designed with 2,400 square metres trading area in the basement of the market complex to deal with approximately 30,000 metric tonnes of produce per year. Kariakoo Market Corporation records show a peak annual delivery of 92,787 tonnes between July 1980 and June 1981, and it has been handling approximately 70,000 tonnes annually since 1983. Given the continued growth of the city's population the growth in demand has clearly been met by wholesale sources outside Kariakoo. This has meant that most of the storage rooms and cold stores, and during busy periods part of the loading area, have had to be opened up for use as an extra 1,000 square metres trading floor space. The wholesaling of coconuts takes place in an area of 1,100 square metres in a side-street outside the market in order to relieve congestion.

Kariakoo Market Corporation (KMC), when it was formed in 1975, was given the task of managing the only legal wholesale market for fruit and vegetables in Dar es Salaam. The only legal controls or interventions in the marketing of fruit and vegetables are that, firstly, the wholesaling must be dealt with in Kariakoo by KMC-registered auctioneers; secondly, the suppliers delivering produce are subject to a 6 per cent commission payable to KMC; and thirdly, the KMC advise maximum and minimum prices for each of the commodities. In reality, however, there is limited monitoring and no regulation of the negotiated prices, and KMC is aware that their guidelines are frequently exceeded. The KMC set the guide-lines on the basis of interviews of what they call 'price leaders'. However, the differing sizes, qualities, and varieties of the commodities and the different conditions under which individual prices are negotiated, make this kind of price estimation very difficult. Within the market the wholesalers are free to act, and KMC has no direct marketing involvement. As the managing organisation, KMC provides market facilities in return for them through the commission charge.

The General Manager of KMC is aware that, at the time the new market complex came into operation in 1975, it accounted for an estimated 90 per cent of Dar es Salaam's fruit and vegetable wholesaling, whereas at the time of survey he estimated that it accounted for 60-70 per cent. Indeed, Kariakoo has not been able to absorb the increased fruit and vegetable trade because of the physical constraints of limited capacity. According to these estimates, up to

40 per cent of fruit and vegetables entering the city of Dar es Salaam may not be levied a commission.

The storage and movement of commodities, and the disposal of a large amount of organic waste resulting from both rotted or damaged produce, as well as the materials used for packaging, is an increasingly important problem in Kariakoo. The disposal of this waste becomes more crucial and more problematic, as the volume of goods and packaging material increases and the market becomes increasingly congested. The underground ventilation system is not adequate to cope with the high relative humidity (which can exceed 85 per cent), high temperatures (which can exceed 30

SYMBOL 176 \f "Symbol"

C), and the increased number of people and produce passing through the market.

Kariakoo was intended to bring the marketing channels under central control and protect the supply chain to the city population from speculators and racketeers. Sporrek discusses a number of stages in the development of an urban marketing chain system (Sporrek, 1985). Figure 1, presents a series of model supply systems, in which he argues that model A best describes the way Kariakoo was expected to fit into Dar es Salaam's food supply system. The models B and C are seen by Sporrek as previous stages in the development of a marketing chain resulting in a hierarchy of institutions involved in the marketing process. The previous stages involve, firstly, direct producer-consumer and producer-producer transactions, either by cash or by barter (Model C). Secondly, a system develops where a number of individuals with capital are able to begin trading full-time and facilitate the trade between the producers and consumers (Model B). The final stage is where an organised state intervention facilitates the marketing and at the same time regulates the prices, ensuring a minimum of exploitation by the middlemen.

Table 1

Clearly, in 1976, when Sporrek carried out his fieldwork, it could be argued that the Dar es Salaam fruit and vegetable marketing system had reached Stage A. Table 1 shows that a large proportion of retail sellers (95 per cent or more) buy from Kariakoo in twenty out of the twenty-five commodities listed. Since that time, however, Kariakoo has reached an apparent wholesale ceiling capacity of approximately 70,000 tonnes annually (Kariakoo Market Corporation, 1975 to 1987). The increase in demand for fruit and vegetables in Dar es Salaam can reasonably be expected to follow the growth of population. A Marketing Development Bureau report estimated that market demand for fruit and vegetables for Dar es Salaam was 146,000 tonnes in 1985 (Marketing Development Bureau, 1985). This suggests that the concurrent increase in demand for fruit and vegetables is being met through other channels. This being the case, Kariakoo will account for a decreasing proportion of the city's wholesaling activities, with suppliers seeking alternative sources for their produce. The same Marketing Development Bureau report projected that, based on constant population increases, demand for fruit and vegetables would increase to 506,000 tonnes by the year 2000. If this is to be met by supplies coming through a centralised wholesale system, it will require 17,000 square metres of wholesale trading floor space and the capacity to handle over 1,000 vehicles both collecting and delivering each day. This is why Kariakoo Market Corporation are considering relocating their activities to an entirely new site. A more peripheral location would provide more space and easier access for commodities arriving from rural areas. However, the Marketing Development Bureau projection suggests a site already purchased on Nelson Mandela Road (see Figure 6) would quickly become too small. According to the General Manager of KMC, a number of other options are being considered. A location in Manzese, near Tandale Market, is favoured but there is no available space. Sites on Pugu Road and Morogoro Road have been considered. The move to a new site will take place, but it has been delayed until a suitable site is found.

Figure 3 summarises the data collected from KMC regarding the deliveries of the different types of commodities to Kariakoo. This figure suggests that there is an initial period of relatively stable proportions between 1981 and 1983. However, after 1983 the category of 'Other Vegetables' begins to grow relative to the other categories. All the other categories show a trend of declining proportions.

There is a trend which has begun among market traders to seek their commodities from alternative, cheaper and more convenient sources. This may mean purchasing 'informally' from people who have transported commodities as far as a retail market and are selling them wholesale there. For example, retailers named markets such as Ubungu, Tandale, Tandika, and Buguruni as good sources for certain types of produce (see Figure 6). Traders in Mwenge were even reported to be going to Kunduchi, an area just north of the city, at certain times of the year, to buy tomatoes direct from producers there. The decline in the proportion of deliveries accounted for by tomatoes at KMC (seen in Figure 3) suggests that alternative channels may now be increasingly used.

The results of a survey of retailers in the six major retail markets around the city, identified in Figure 6 (Lynch, 1992), suggests that 64 per cent of Dar es Salaam retailers purchase their commodities from Kariakoo, and 36 per cent purchase their commodities from a variety of sources: 29 per cent from markets other than Kariakoo, 4 per cent from outside Dar es Salaam, and 3 per cent from other sources, such as their own farm (Figure 4). However, many retailers would have been reluctant to disclose that they had bought elsewhere, for fear that the information collected may be used by the police or city authorities. In addition, a large number of small scale street traders located around the city's streets are less likely to travel far for their produce. It is possible to conclude, therefore, that the percentage of 64 per cent may be an overestimate of Kariakoo's importance in the supply of fruit and vegetables to Dar es Salaam.

In an additional part of the wider study two thirds of the rural-based traders interviewed in one important vegetable producing area sold to a wholesaler, while the rest sold direct to a retailer (Figure 5). The latter proportion are, by implication, selling into the informal sector. Of the 66 per cent selling to wholesalers, a proportion will sell through Kariakoo (formal sector), while a proportion will sell to wholesalers in other markets (informal sector). This reinforces the interpretation that KMC's estimates are optimistic about their importance in the supply of fruit and vegetables to Dar es Salaam. A more realistic estimate of the proportion of the KMC's wholesale market importance would be 50 per cent, but a more accurate percentage would be impossible to calculate with the small amount of information available at present.

Suppliers interviewed in two key vegetable producing areas, reported that Kariakoo is the main market where they would consider selling their produce. It has unloading facilities where produce can be secured overnight, and it has a limited pool of registered buyers, whereas in other markets the facilities are not as good, while the buyers are not vetted and make no financial commitment in the form of licenses and so can enter and leave the wholesale business freely. There are greater risks involved in the informal sector for both the supplier and the wholesaler, both having to deal with someone unknown and both involved in an illegal activity. Only when the trader knows a wholesale buyer in the informal sector, or the price offered is sufficient to outweigh the risks, would the informal sector seem an attractive method of disposing of the produce. The margin achieved by avoiding Kariakoo sales commission and licensing charges and the costs of portage around the market, make the attraction of the informal sector more likely.

Fruit and vegetables must be transported rapidly to Kariakoo, because of the problems of perishability and the lack of refrigerated transportation and storage facilities (Jones, 1986). Suppliers time their deliveries to arrive in time for early trading and to be rapidly passed down the distribution chain to the retailers. Long distance bus travel and road transportation in Tanzania is generally carried out overnight to avoid the high temperatures experienced during the day, often exceeding 30

SYMBOL 176 \f "Symbol"

C. This overnight journey also brings the produce to the market at the opening of the day's wholesale trading at 5 am.

Mwenge market could be described as a typical peripherally located retail market. It is situated on the corner of Bagamoyo Road and Sam Nujoma Road (Figure 6). The market began developing beside the important bus terminal, which is also located at this junction, in 1975. The site was officially taken over by the city authorities in 1977 and by 1989 the market had 75 registered retailers, who each paid TShs 500 per year or TShs 20 per day for their stall. This contributes to the provision of a secretary, water and access to a communal telephone. Another TShs 200 per stall per month was paid to the city council, who are responsible for maintaining the stalls and clearing rubbish.

The Mwenge market retailers generally buy their produce from Kariakoo wholesale market. Notable exceptions to this are those selling mchicha, a type of spinach, which is widely grown on waste land or urban garden plots around the city and between August and October, tomatoes are bought from Kunduchi village, a little further along the Bagamoyo Road. Typically traders purchasing from Kariakoo take a bus to arrive there at about 5 am every morning in order to purchase their produce as the lorries arrive from their overnight journeys from production areas. They then usually transport the produce by a hired handcart (mkokoteni), pick-up or car. Where smaller amounts are involved traders will either group together to hire a pick-up, or return individually with their produce by bus. In the main, the retailers preferred to go to purchase their commodities themselves, although this meant longer working days and the additional cost of transporting the commodities to the retail market.

In spite of Kariakoo having the legal wholesale monopoly, some retailers from Mwenge went to Tandika and Tandale markets in search of wholesale goods. However, it is difficult to estimate how many did this. Kariakoo remains the most important source for fruit and vegetables for retailers, followed by Tandale and then Tandika (Figure 6). One market secretary reported that, to some extent, the sources of produce depended on the season. For example, in the case of oranges, when oranges from Kilwa (Lindi Region, south of Dar es Salaam) are in season, Tandika is the best market, and retailers sometimes travel to purchase oranges there. When oranges from Tanga or Morogoro are in season, Kariakoo or Tandale are the better markets. For many retail market traders, Kariakoo is also the main source for cabbage, carrots, onions, peas and apples, and competes with Ubungo and Manzese for bananas, and with Tandale for mangoes. Potatoes mainly come from Manzese or Tandika (Table 2).

Table 2

Often those suppliers coming to Tandale have small quantities and do not wish to get involved with the bureaucracy and congestion of the Kariakoo wholesale market. It is easier to sell a small quantity undetected at a market such as Tandale. Nevertheless there are still those who prefer to go to Kariakoo because it provides facilities which are particularly useful for those with large loads. It is possible to lock the building at night, there is electricity for lighting, particularly important early in the morning when much of the produce is delivered by lorries from up country and bought by city retailers. In Tandale, according a KMC levy collector, sent there to try to obtain some level of commission charge, there is "... no light, no security, no nothing". KMC collectors are reportedly also operating in other markets, but rarely are they able to collect the full charge. Skilled negotiators would be able to obtain concessions for wasted goods, for not using Kariakoo's facilities and payments are often limited by what the supplier claims to have in cash.

There are approximately 100 wholesale traders operating in Tandale market, although the number varies throughout the year. There are no records of wholesale traders and so it is difficult to know how accurate an estimate this is. The wholesalers selling fruit and vegetables have constructed their own stalls, which generally consist of woven palm leaf dividers used to create a large, shallow basket into which the fruit is piled. The traders sit behind these piles and openly sell their goods. There is no attempt to stop them - the only indication that the authorities are interested in their activities is the presence of the Kariakoo Market Corporation collector.

Conclusions and Policy Recommendations

As a result of the research carried out for this study the following additional points are offered. The formal wholesale market must now consider itself to be operating in competition with alternative retail markets for both suppliers and buyers. As such, the formal sector has a number of advantages over its competitors, such as the 'good will' of regular traders, which has been built up over a considerable period of time. It has a central location, it has an organised structure of porters and auctioneers - although this has apparently become obsolete - it has loading bays and it has the protection of the building from adverse weather and theft when the market is closed for business. This study has demonstrated that the current supply chains are based on the contacts and knowledge of those involved in the buying and selling and not just in the physical roads buildings and vehicles. A complete shift in location of the formal fruit and vegetable wholesale market from a central to more peripheral location would result in immense disruption of these food distribution chains. The new market building and location may not offer the advantages required to attract suppliers who have already begun trading in the informal sector. Finally, any future planning must take into account the periodic fluctuations in daily, monthly and annual supply, as they have been described in this paper. Any solution suggested for the problems of congestion should be geared to the maxima of supply and demand, as well as to mean increases in the trade and also the needs of the suppliers and the buyers.

A more pragmatic approach to the problems of urban food supply in the light of this research may be the decentralisation of the wholesaling function to a peripheral location. This could be carried out both structurally, effectively handing over the wholesaling function to smaller scale wholesale markets, and spatially, where those markets are located on more peripheral sites. Thus following too main trends already established within the informal sector. The economies of scale associated with wholesale functions could be maintained if these markets were relatively specialised, concentrating on particular commodities. Again this is a tendency identified in the informal sector. Thus the KMC, in its capacity as a facilitator of wholesale activities, may be more effective if it targeted its activities at the flexible support of a diversified market system. Clearly, more detailed examination of this suggestion would have to be carried out, but the evidence presented in this paper bears out the hypothesis that, if the current plan of relocating KMC's activities were to go ahead, significant disruption to the food distribution chains would occur and it is unclear how beneficial a more peripherally located formal monopoly wholesale market may be.

Finally, the urban population have responded to declining real incomes by seeking alternative procurement strategies, as they have in other African cities. This includes kin-related exchanges involving food for cash, assistance of some kind, or accommodation. In addition, some urban residents have begun producing their own food, or food for sale. Evidence suggests this latter strategy has been successful. Researchers are unanimous in their conclusions that this is a potentially valuable source of urban food supply that has not been supported, indeed has been actively discouraged, and should be looked at carefully.

This approach, integrating the main aspects of the chains of supply of food to an African city, has provided a number of insights. The evidence presented in this paper has provided a number of insights at various levels. At the local level it has demonstrated a rise in the volumes of vegetables being delivered to Kariakoo and the decreasing importance of fruits, in terms of volume deliveries to the market. When presented alongside the increase in Dar es Salaam's population, this evidence points to a gradual process of specialisation at Kariakoo, as the retailers and consumers respond to the economic conditions. This is not the result of deliberate KMC policy, but the result of a combination of demand-led and supply-led movement of fruit marketing to alternative markets around the city. In other words this is evidence of the population's response to the adverse economic circumstances and to the increasing liberalisation of the Tanzanian economy since the mid-1980s that have affected the country and, in particular the city reflecting the changing political economy of the country. The established centralised formal

wholesale market has been found to be lacking the flexibility required by suppliers, wholesalers and retailers of certain commodities at least. As the city has grown in size, so there has been a spontaneous shift in food trading activities from the structurally and spatially centralised system to more peripheral independent wholesalers. Their flexibility has meant they have been able to adapt to the changing political economy and the effect of urban growth and change. The large scale of the formal sector, on the other hand, has meant that change is more capital intensive. The success of the informal sector has prompted the realisation in Kariakoo Market Corporation of the need to relocate their own activities to a more peripheral site. The evidence of the informal sector activities suggests that KMC should plan for greater flexibility perhaps by establishing more than one new site, specialising in particular commodities or perhaps supporting informal sector activities already developed.

This approach has also highlighted the need for greater understanding of certain aspects of the food system. Perhaps because of the lack of formality and cohesiveness, urban agricultural activities have until recently been neglected. It is important that research of these activities, as part of urban resident food procurement strategies, are integrated with research of their relationship with urban food supply. Clearly, some production is for sale, some for subsistence consumption, but what are the decisions and influences on such decisions? Bryceson (1985) suggests that the importance of non-market sources may have reduced the detrimental impacts of the removal of the maize meal subsidy in Dar es Salaam in 1984, but what are the more general longer term implications?

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