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Famine early warning organizations have yet to devote serious attention to monitoring the food situation in Africa's cities. The largely rural focus of Africa's early warning systems is related to a limited appreciation of hunger problems in urban areas as well as conceptual and technical impediments to the monitoring of urban hunger. A larger proportion of the continent's population still resides in non-urban areas (WRI 2000). And rural areas have a more notable history of famines. Yet the favored status of the urban resident has eroded considerably since the late 1970s. Twenty years of structural adjustment policies have reduced the number of government employees and curtailed many public subsidies, changes that directly affect many urban livelihoods (Becker et al. 1994; Ridell 1997; Potts 1997). Currency devaluations disproportionately impact the food security of urban populations by increasing the price of certain foodstuffs relative to urban wages (Dioné et al. 1997; Tefft et al. 1997). In many instances, rural incomes now exceed those in urban areas and as a consequence, rural-urban migration has slowed dramatically (Potts 1995, 1997). In spite of the falling status of Africa's urban poor, there is "an alarming lack of information on the patterns and determinants of (urban) food insecurity ...[and] the data and analytical base for public policy formulation in urban areas is surprisingly weak" (IFPRI 1996, 85).

Three methods have been used for monitoring food shortages in Africa—the food balance sheet, an indicator-based approach, and systems approaches. In 1973, the United Nations' Food and Agricultural Organization first employed the food balance sheet for its Global Information and Early Warning System (GIEWS) (Maxwell and Frankenberger 1992). This approach compares demand (population multiplied by per capita food need) to supply (sum of agricultural production, stocks, and imports) to determine if surpluses or shortfalls exist at the national level. The indicator-based approach has been most fully developed and used by the US Agency for International Development (FEWS 1998; Moseley and Logan 2001). USAID's Famine Early Warning System (FEWS) relies on food prices, crop conditions, production data, health conditions, labor prices, and other indicators to predict potential food insecurity. Systems approaches attempt to determine aggregate need through an understanding of processes operating at the household level. One example
of this method is the household food economy approach developed by the Save the Children Fund (UK) (Hutchinson 1998; SCP 2000; Moseley 2001a).

Household sources of food and income as well as asset levels, surplus production, coping strategies, and markets are used to establish baseline profiles for poor, modal, and rich households as distinct economic categories.

While the food balance sheet and indicator-based approaches have dominated food security monitoring in rural areas—certainly remain problematic in these contexts—they pose additional problems when applied in urban areas. The food balance sheet approach is a particularly questionable method for cities because it fails to address varying abilities to access food (e.g., households that are too poor to buy food even if it is available on the market) (Sen 1981; Dreze and Sen 1989). Recent research suggests that most food insecurity in African cities is no longer a problem of absolute supply as it had been at times in the past, but limited access to food due to poverty (Maxwell 1999). The primary weakness of adopting an indicator-based approach for urban areas is that data inferences are made without a structured attempt to understand the context of the information. Data on urban gardening, for example, is useful if what proportion of a typical household's food needs are satisfied through gardening is known. Of the three methods, the systems approach is the best suited to monitoring urban food security because it seeks to understand the relative access of different types of households to food supplies. It attempts to make operational Amartya Sen's entitlement theory (Sen 1981; Seaman 2000). This study surveys key elements of urban food economies in sub-Saharan Africa, starting point for assembling the baseline information necessary for hunger monitoring in African cities and the subject of increasing interest on the part of Africanists, including geographers (e.g., Guyer 1993; Ellis and Sunberg 1998; Maxwell 1999; Friedberg 2001). I conclude by linking the characteristics of urban food economies to potential intervention strategies.

**The Character of Urban Food Economies in Sub-Saharan Africa**

There are a number of key differences between rural and urban food economies. The main, historical difference has been that rural people produced the majority of their own food whereas urban people were more dependent on food purchase (IFPRI 1996, 18). Hence, urban food monitoring systems need to pay special attention to sources of income and food prices. Second, urban areas often do not possess the same degree of cultural, ethnic, and occupational homogeneity as their rural counterpart. In a rural area, for example, if the majority of people are farmers (as opposed to pastoralists or fishfolk), then one can begin to examine how drought may affect that common livelihood. Third, the coping strategies that households employ in times of food shortage may be very different between rural and urban areas.

Keeping the aforementioned differences in mind, several key aspects of the urban food economy must be understood and coupled with indicator data such as food prices, wages, employment rates, urban garden production, and rainfall. To the extent possible, some general attempt is needed to divide the population into subgroups. This breakdown might include: income levels (rich, intermediate, and poor); common livelihoods (gardeners, civil servants, vendors); geographic locations (core, periphery, peri-urban); or, a combination of several criteria. The remainder of this section discusses four important aspects to a contextual understanding of urban food security such as direct food procurement, urban food markets, sources of urban household income, and coping strategies.

What proportion of an urban household's food is acquired directly through home and extended family production? Sources of direct food procurement in the urban context include urban irrigated agriculture, urban and peri-urban rainfed agriculture, food transfers from rural areas, and urban animal husbandry (IFPRI 1996; Moser 1996; Potts 1997). While agriculture has always been present in African cities (Guyer 1987), direct food procurement is increasing in importance (IFPRI 1996; Moser 1996; Potts 1997; Smith 1999). IFPRI (1996) estimates that 40 percent of Africa's urban population practice some form of farming. The percentage is considerably higher in specific cities (e.g., 68 percent in Dar es Salaam). Urban agriculture tends to be practiced on any open space throughout cities, very often within family compounds. More extensive forms of cultivation may occur in peri-urban areas at the fringes of cities. Urban agriculture is difficult to undertake in more densely populated cities (e.g., Lagos or Johannesburg), in spatially large cities where the periphery is further away (e.g., Kinshasa), or in places where the private market for land is so well established that illegal or informally arranged farming is more difficult (e.g., Harare). Yet conditions for urban agriculture are ideal in many African cities given their relatively low densities and small size (Potts 1997). My own field research in the peri-urban areas surrounding Lilongwe (Malawi) suggests that poorer households often rent their lands to city residents for farming. And wealthy Lilongwe residents may pay the villagers to cultivate the land they rent. This situation is due, in part, to the fact that some households in these communities are so poor that they do not have the means to purchase fertilizers and seeds in order to farm the land themselves (Earl and Moseley 1996). Similar research near Maseru (Lesotho) revealed that urban
agriculture — gardens, stall-fed animals, fruit trees, and chickens — is rapidly overtaking rural agriculture in terms of economic importance (Moseley and Earl 1997).

Food transfers from rural areas are stronger than ever. In the 1960s and early 1970s, urban households typically earned sufficient income to meet their food needs through purchase and still be able to send money to the rural homestead. With the decline of the urban income advantage, however, the direction of transfers is changing. Potts (1997, 466) notes “far more food is now being brought in from rural areas, which of course greatly enhances urban residents’ vested interests in maintaining their social and economic links to rural areas.” These relationships involve urban households sending cash to rural family members and food being sent from rural farms. In some instances, the nuclear household may actually be split between a female partner in one location and her male partner in the other. In other cases, extended households are divided between locations. Unlike a market transfer, these exchange arrangements are flexible and depend on the relative prosperity of the urban and rural components of the family. The reliability of food supplies from family members in the rural areas may fluctuate greatly depending on crop production in a given year. These “split-household” strategies are similar to other settings where African households straddle two different production systems to ensure that household needs are met (e.g., agro-pastoralists in Mali’s Ségou Delta) (Moorehead 1991).

The purchased portion of household is critical insofar as it represents the degree to which a household’s food supply is susceptible to price and wage fluctuations. Because poor urban households may obtain a greater proportion of their food needs through non-market means, they are, in one sense, less exposed to price fluctuations. However, they are also less able than wealthier households to cover the additional costs of purchasing food (because of limited surplus income and wealth). In order to understand a household’s access to purchased food, it is critical to understand both the labor market as well as the food market (IFPRI 1996). Understanding one is just as important as the other.

Common sources of income in Africa’s urban areas include government sector employment and other jobs in the formal sector as well as foreign remittances and several aspects of the informal sector (O’Connor 1991; IFPRI 1996). The mix of income opportunities that households exploit to meet annual food requirements varies from city to city. Africa’s urban labor market may be divided into the formal and informal sectors. The balance between the two sectors also differs from country to country. For example, the importance of the informal sector varies from 40 percent of the workforce in Kenya to 90 percent in Freetown, Sierra Leone (IFPRI 1996). African cities tend to be the centers of trade and government administration rather than being centers of industrial manufacturing. Bulawayo is an example of the former and Harare an example of the latter (O’Connor 1983). Because government jobs feature prominence in many African cities (particularly in capital cities), formal sector employment may be monitored best in terms of government jobs and other types of employment in the formal sector.

Statistics on formal sector employment may be available, but they are more difficult to obtain for the informal sector. The rise and fall in numbers of formal sector positions may influence the level of informal activity, which tends to be dominated by petty trade, service, and production. This relationship is confounded in a situation where many urban residents are underemployed (IFPRI 1996), and, in effect, “share” informal sector jobs. As such, the observation that the informal sector has grown while the formal sector has shrunk, may actually be the spreading more thinly of informal sector activity.

With the exception of a few countries that have historically high producer pricing policies (e.g., Zimbabwe), the proportion of urban budgets now devoted to food purchases is abnormally high (Guyer 1987; Maxwell 1999). In Malawi, low-income households in Blantyre and Lilongwe spent nearly two-thirds of their income on food in 1987-88, as compared to one-fourth of their income in 1980 (Potts 1997). Urban food markets often have two principal components that behave differently — locally produced food items versus imported ones. Locally produced grains usually follow a predictable price pattern; somewhat cheaper just after the harvest and climbing steadily in price until the next harvest. Depending on the forecast for the next harvest, prices will either drop just before the new harvest if the predictions are good (as merchants try to sell off their old stocks) or hold steady if forecasts are bad. A poor harvest usually offsets an entire year of higher grain prices (unless the same grain or a substitute is imported).

In cities, vulnerability to food insecurity is first and foremost, vulnerability to fluctuation in the price of food and in income (IFPRI 1996, 73). The pricing of imported grains (e.g., rice or wheat) is linked to international production trends, but devaluation of local currency may suddenly increase the price of imported foodstuffs. A key question is whether or not the imported grain is a staple food for the masses (e.g., rice in Dakar) or a luxury item consumed by the rich (e.g., wheat in some cities). Imported grains move in and out of the market in response to ebbs and flows in local grain production, a pattern which has a price leveling effect. Urban grain prices are usually
more stable than their rural counterparts, in part, to the fact that larger markets often attract more suppliers.

Adaptive strategies among urban households are critical to obtain food when standard sources of income or food fall short of normal levels. As a result of their vulnerability to fluctuation in the price of food as well as income, “urban residents have developed strategies for reducing vulnerability that are markedly different from those of rural areas” (IFPRI 1996, 73). While urban households have less recourse to the natural environment in times of hunger, they have more opportunity for cutting costs. Common coping strategies include switching to cheaper foods, walking rather than taking transport, relying on extended family ties, sending family members back to the rural area, added use of credit, joining households with another close relative to pool income and space, and not paying school fees. That said, however, the margins for economizing may be very small for the urban poor given that food expenditures account for as much as 80 percent of income expenditures (IFPRI 1996; Moser 1996; Potts 1997). And O’Connor (1994) estimates that three-quarters of urban residents rent their dwellings in Africa. Hence, seeking additional income generating activities often features prominently as a coping strategy. The burden of additional employment typically falls on women and children. Selling household assets is often a strategy of last resort because selling a motorbike, poultry, or small livestock may diminish future income generation possibilities (Moseley 2001b).

Policy and Program Recommendations
Understanding key elements of African urban food economies informs policies and programs to improve the nutritional status of poor urban households. Four program recommendations stand out as potential candidates for alleviating urban hunger – intensive organic gardening, urban food cooperatives, improved water supply, and income generation projects for women.

After the Sahelian drought of 1985, many non-governmental and governmental agencies began trying to teach villagers how to grow vegetable gardens. By most accounts, these attempts at assistance were utter and dismal failures (Hancock 1989). Local villagers were often not accustomed to eating vegetables. Nor were there markets at which this produce could be sold. Water was scarce and labor-intensive techniques made little sense where land was plentiful. Yet the conditions in many of Africa’s cities are now different. Many urban residents consume vegetables and there is a significant market for this type of produce. Furthermore, land is scarce and the need for organic techniques is evident. Pesticide use poses additional hazards in densely populated areas. Organic compost is often abundant in the urban environment. Agencies seeking to foster more urban gardening might engage in technical assistance (just as agricultural extension services do in rural areas). Subsidies to open land and water sources for urban gardening associations are important forms of assistance. Because many urban gardeners are female, assistance in this activity may often translate into improved nutrition for children.

Cooperatives are ideal for helping poor neighborhoods cope with high annual price fluctuations in basic foodstuffs by allowing the community to buy in bulk during periods of low prices. Often the urban poor can only afford to purchase small amounts of grain at a time. The nature of this demand has resulted in the proliferation of large numbers of grain sellers. As a consequence, a poor often pay considerably more for their grain than wealthier households, which can afford to purchase grain in bulk (Moseley 1995). This situation appears ideal for grain banks or food cooperatives to purchase basic commodities in bulk, sometimes directly from the producer, at considerable savings. Buying at times of the year when grain prices are lower increases savings. The grain bank distributes small quantities of grain to its members whose volunteer labor allows the bank to function at a cost high enough to cover expenses, yet considerably lower than the market price for a similar quantity of grain. Such initiatives require a secure place to store grain, a loan to use as starting capital, training in bookkeeping and accounting, and a sufficient degree of group cohesion.

Poor households typically reside in unplanned neighborhoods with little or no services. Inaccessibility to clean water in the neighborhood often means walking longer distances to a water source or obtain it through purchase. This expense (time and/or money) detracts from the household’s ability to feed itself (Moser 1995). Innovative ways to finance such infrastructure may be necessary, given the increasing inability of governments to provide services. While many non-governmental organizations have historically assisted rural communities with bore holes and pumps, it is time to expand these programs to poorer neighborhoods.

As formal sector employment has declined in Africa’s cities, the informal sector has taken on increasing importance, especially for women, who have less access to formal sector employment or credit and are often called upon to earn additional income when the labor of male household members is insufficient to cover food needs. Start-up capital is a critical constraint on such activities. Issuing micro-loans for small-enterprise – Grammen Bank-type schemes – would be ideal. In Egypt, research revealed that a 10 percent increase in mother’s wages resulted in a 15 percent decline in labor among children ages.
twelve to fourteen and a 27 percent decline among those ages six to eleven (World Bank 1995). Support of women's income generation also leads to improved nutrition among children.

**Conclusion**
The combination of increasing population, food prices, and poverty has led to a growing hunger problem in many African cities. Not surprisingly, urban agriculture is growing in importance as a source of food and income. Food transfers from the rural to the urban household are increasing as well. The continent's major food security monitoring systems have largely ignored the urban sector due to an under-appreciation of food insecurity in these areas as well as conceptual and technical difficulties in monitoring access to food in zones with a greater mix of livelihood strategies. Hence, this paper attempted to highlight key elements of urban food security in sub-Saharan Africa.

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**References**

Regional Conference of the International Geographical Union (IGU)

Conference Régionale de l’Union Géographique Internationale (IGU)
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Durban South Africa / Afrique du Sud

Website: www.turners.co.za/igu

"Geographical Renaissance at the Dawn of the Millennium"
La renaissance de la géographie à l’aube du troisième millénaire

We are pleased to extend an invitation to the next Regional Conference of the International Geographical Union (IGU), hosted by the African geographical community, to be held at the International Convention Centre (ICC) in Durban, South Africa. The conference is open to all scientists across the spectrum of the Earth, Environmental, Developmental, and Social Sciences. Most of the Commissions and Study Groups of the IGU will hold business meetings during the conference.

The organising committee, working around the theme “Geographical Renaissance at the Dawn of the Millennium,” has planned a highly interesting and innovative conference focusing on a variety of programmes to be presented under the auspices of Commissions and Study Groups.

The IGU will also be honouring the former president of South Africa, Dr. Nelson Mandela with the prestigious International Geographical Union’s “Planet and Humanity Award” at the Conference.

The challenges facing Geography as a discipline, both globally and regionally, are many and varied and are arguably of greater significance than ever before. Innovation, new technology and efficient networking are required to face the challenges posed, inter alia, by globalization, the sustainable and equitable utilization of resources, degradation and global warming. The Conference aims to present a forum at which these issues can be addressed. Participants can choose from a range of pre- and post-conference scientific excursions to some of the exotic destinations in southern Africa.

Lindiszwe Magi - Chair, National Scientific Committee

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