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**Multi-channel food supply systems  
to francophone African cities**

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## **Acronyms and abbreviations**

**SSA**            Sub-Saharan Africa

<b>CILSS</b>	Permanent Interstate Committee to Combat Drought in the Sahel
<b>FAO</b>	Food and Agricultural Organization of the United Nations
<b>ONCAD</b>	Office national de la coopération et de l'assistance au développement
<b>OPAM</b>	Office des Produits Agricoles de Mali
<b>WFP</b>	World Food Programme
<b>GDP</b>	Gross Domestic Product
<b>DC</b>	Developing country

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## INTRODUCTION

The issue of supplying food to African towns will remain a major challenge in the coming years in view of the steep urban growth, the small increase in extensive agricultural production and the risks of bottlenecks in the supply and distribution circuits.

Yet it is very difficult to summarize this issue for French-speaking Africa. The situations vary widely and are reversible. Information systems are rather unreliable. Any analysis of supplies to Sub-Saharan African towns raises problems for the inquirer in terms of measurement, the scale of the phenomena being investigated and the time scale.

The first problem is quantifying the economic and demographic flows. The lack of accurate information is due to the fact that records are poorly kept in societies without reliable statistics. This has to do with own consumption and economic circuits which work outside the reach of the law. Africa's areas are poorly integrated which gives rise to a wide variety of different prices and quantities. With the official systems in crisis, domestic circuits and undocumented flows develop. It is hard to understand how the towns are supplied unless these informal circuits are taken into account. Price and exchange differentials and differences between policies explain the parallel trading flows between Nigeria and the surrounding Franc Zone, or between Zaire and southern Africa.

African societies are also highly unstable in terms of food production, flows and prices. The movement of goods and migration can be reversed. This makes it very difficult to gather statistics. The variances between monthly, annual and multi-year developments and trends can be huge. Apart from the fluctuations, it is a very difficult to define medium and long-term trends.

Global statistics, lastly, constitute a major challenge to the authorities, particularly when they are drawn up to receive certain forms of aid. They are often "purpose built" as a result. The macroeconomic estimates of food consumption or production used by FAO must therefore be handled with care. Production is estimated by taking yields and acreages that have been evaluated from a number of samples and applying them to rural populations, of which very little is really known. Agricultural production calculated in terms of the rural population clearly falls as the rural population falls. Relating urban population statistics to agricultural production therefore creates a skewing in the method of calculation. Food consumption or availability is obtained following the remainders method, which only compounds the errors.

A second methodological problem is the scale of the phenomenon under review and the area of reference.

Analysts and observers face a twin risk: the risk of taking a global view exterior to the African societies, ignoring the "inner dynamics", and raising the question from the point of view of foreign operators or the means of joining the international market; or conversely the risk of a making partial or biased reading, confined to certain societies, making up isolated monographs whose representativity or significance is unknown.

One of the central methodological issues is to articulate the international, inter-African, national, sub-regional, local and family supply systems. Food security arises at the national, regional, local, household and individual levels.

The towns, as places for joining international circuits, are also related to their own hinterland. The analysis of the "hierarchically ranked space" makes it possible to draw a distinction between the locomotive urban centres which create external effects and economies of scale, and the peripheries where the dynamics are induced by these locomotive centres or, conversely, which are caught up in a process of marginalization. Then there is less opposition between the town and the country than there is between the urbanized and the non-urbanized spaces.<sup>1</sup>

Many factors are involved in fostering the supply from small farmers and guaranteeing the articulation between the towns and the countryside. These include distance, the existence of infrastructure facilities, and the dynamics of the commercial, financing, transport and storage networks. Agricultural production is closely linked to urban market access.

The towns also give rise to speculative foodcrop farming within their catchment areas. Although without any land pressure African peasants choose as their commercial crop the one which best remunerates the labour time supplied, the fact that the land is saturated is forcing them to choose high-yield crops: intensive cropping feeds them and extensive cropping brings in the money (Pelissier). The locomotive effects of the town therefore differ fundamentally, depending upon the "comparative rarity value of the factors involved".

The third methodological problem is the heterogeneous nature of time.

The question of food supplies refers both to the long-term urban population growth rates which will double in ten to fifteen years and the question of the very unstable supply, demand, food pricing, and also the unstable populations.

From a historical viewpoint a distinction can be made between the continuity and breaks. Food imports account for the same proportion of total imports as they did during the colonial period. But they are not the same commodities today. The pre-colonial towns, such as Yoruba or Antananarivo, do not have the same modes of operation as the towns that have mushroomed such as Abidjan and Yaoundé whose expansion dates back only thirty years. The chronological series or the crosswise analyses of Africa do not seem to confirm the "urban demographic transition laws" (for example the nuclearization of family nuclei in the towns) or the "food transition laws" (for example, the growth of richer nutritional regimes as incomes rise).

Returning to the ranking proposed by Braudel (1979) to divide up societies into

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<sup>1</sup> We shall use the term 'urbanized space' to mean a space in which towns have the effect of linking and leading the rural zones.

different periods, one may consider that the daily practices adjust their timing to the phenomena of food product monetization or to agrifood capital accumulation processes in which money is not only the medium for exchange but becomes a self-valuing capital. Although the domestic, merchant and capitalist spheres do not follow the same timescaling, their dynamics are not mutually independent. Moreover, the State is an essential element of regulation with its own time horizon.

What is necessary is to seize on the breaks that are currently occurring, because the adjustment periods can lead to dysfunctions in the food supply and distribution systems, as well as in innovations. This presupposes that account must be taken of circuit segmentation. Time does not pass at the same pace in the African countryside, the towns and the international world. How can the biotechnological revolution or progress made with packaging which is metamorphosing the agrifood change with *daba* or *angady* used by the peasantry and the new meal preparation technologies or product-processing technologies found in the towns?

Likewise, changes in urban dietary patterns do not take place at the same rate (Bricas, 1996; Requier-Desjardins, 1989); a transformation occurs in the products, the procedures, social organizations, raw materials and outlets, at different times. Like soil tectonics, feeding habits are made up of different strata which move at different speeds, and which can both coexist and cause splits.

We will begin from the most simple relationship of all which shows the parallelism of the agrifood crisis, urbanization and the resorting to external food supply circuits (see Chapter 1), before proposing a space-based analysis in terms of the variety of different circuits, networks or supply channels (see Chapter 2).<sup>2</sup>

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<sup>2</sup> We have co-edited a number of works on this issue, and in particular: ALTERSIAL/CERED/ORSTOM (1986), *Nourrir les villes en Afrique subsaharienne*, Paris, L'Harmattan; Hugon, Coussy & Sudrie (1991), *Urbanization et dépendance alimentaire en Afrique*, Paris, SEDES; Hugon & Pourtier (1993), *Les villes africaines*, La Documentation française.

## **1 - URBANIZATION AND RESORTING TO EXTERNAL FOOD SUPPLY CIRCUITS**

### **1.1 - APPARENT PARALLELS BETWEEN HUGE URBAN GROWTH AND AGRIFOOD IMPORTS IN SUB-SAHARAN AFRICA (SSA)**

It is obvious to many people that the urban explosion of the African countries is a major factor in the food crisis, creating a food deficit and making it necessary to resort to external food supply circuits.

#### **1.1.1 - The crisis in the agrifood systems**

According to official statistics, which are very inconsistent, Sub-Saharan Africa suffering from a crisis in the agrifood system as a whole, resulting in a sluggish growth in the availability of agricultural and food products. The nutritional status of the population appears to be declining. The number of people suffering from chronic undernutrition has apparently risen from 96 million (out of a total of 268 million in 1969/1971) to 204 million (out of 500 million in 1990/1992), which is over 49 per cent, and is likely to affect 300 million by the year 2010 (FAO forecasts). Average food availability was estimated to be around 2 150 calories a day in 1970 and only 2 200 in 1990 (FAO source cited by Azoulay & Dillon, 1993). Yet there are large differences between countries. Average food availability in Mozambique, Angola outside the French-speaking zone and Chad, Comoros, Burundi and Rwanda in French-speaking Africa is less than 2 000 calories.

Extensive agriculture, using fairly unsophisticated techniques, are vulnerable: according to FAO per capita food production, which remained constant throughout the '60s, has been falling by 1.2% per year since the early '70s. Taking 1970 as 100, the food production fell to 80 in 1991. Per capita food production for the whole of the SSA fell in terms of annual output (cereals, root crops) from 297.4 kilos (1974/1980) to 274.7 (1985/1987) and further still to 252.2 kilos (1990/1994). However, several other surveys have challenged these figures. WALTIPS, for example, has estimated that the agricultural surplus marketed since 1960 has actually grown each year by 2.6%. Africa also has major supply problems within the various agrifood compartments (trade, storage, transport, processing, distribution, the lack of fluidity and rapidity in supplies, infrastructure, inappropriate legislation and the low productivity of small-scale units).

It is nevertheless necessary to define more accurately what is meant by food. Should it merely refer to a nutritive function, or should it also be seen as a system of social and symbolic relations? Should the agrifood chain merely analyse material operations of processing agricultural products, or should it be seen as an industrial process in which there are a variety of different branches and in which agriculture plays what is sometimes a secondary role? Is food insecurity due to a lack of food availability, to great instability in time and space, or is it not, as has been suggested by Sen (1981) due to a lack of rights (based upon trade, output from work, and gifts/transfers) giving rise to food access problems?

#### **1.1.2 - Agrifood imports**

The crisis in Africa's agrifood systems can be gauged from the deteriorating agrifood balance.<sup>3</sup> Whereas food self-sufficiency stood at 98 per cent in 1960, by 1972 the figure had fallen to 90 per cent. In terms of value, agricultural imports increased 5.4-fold between 1970 and 1980, and food imports 7.2-fold. In terms of quantity, net cereals imports, which were negligible in the '50s, rose by 9 per cent per year throughout the '60s and '70s to reach 10.8 million tonnes of wheat and 4 million tonnes of other cereals by 1983/84, from 1974's 5.1 million tonnes. Conversely, they fell back to 10.5 million tonnes in 1990 (World Bank). Cereals imports (maize, rice and wheat) appear to have risen from 507 million dollars at current prices in 1973 to 2 183 in 1980, 2 014 in 1985, 1 909 in 1991 and 2 631 in 1992. The actual figures, not counting Nigeria, were respectively: 446.9, 1 527, 1 526, 1 756 and 2 388. Food aid in the form of cereals totaling 2.4 million tonnes in 1980 rose to five million tonnes in 1984/85, before falling back to 2.8 million tonnes in 1990.

These figures, however, need to be seen in proportion. Food imports account for less than 10% of food consumption. The SSA food trade balance (in terms of nutrition value) is in equilibrium, and per capita food imports are low compared with other regions. Cereals imports rose as a percentage of goods and services exports by 3.8% (1973) to 3.8% (1980), 5.5% (1985), 4.2% (1991) and 5.2% (1992). Developments in French-speaking Africa vary enormously (see Table 1).

**Table 1 - Cereals imports as a proportion of exports of goods and services**

	1973	1985	1991
Benin	3.9	5.3	10.1
Burkina Faso	12	22.1	13.4
Cameroon	3.5	0.9	3.7
Congo	2.3	1.6	2.8
Côte d'Ivoire	5.8	3.0	4.9
Gabon	0.4	0.7	0.9
Mali	43.7	27.0	5.0
Niger	1.6	15.6	8.6
Central African Republic	7.9	3.2	6.7
Senegal	17.7	12.0	9.3
Chad	3.1	10.7	4.3

*Source: Makaya, 1996.*

There has, however, been a sharp fall in imports under the structural adjustment measures. In West Africa, food imports rose from six per cent at the end of 1960 to 14 per cent of the present calorie ration, after having peaked at around 20 per cent in the mid-'80s. The calorie deficit corresponds to a five-year gap between supply and demand. In the space of 30 years, the urban population of Côte d'Ivoire has risen ten-fold, while the total calorie demand is met by domestic production (WALTPS, 1994).

<sup>3</sup> Food products are the ones listed in Section 0.1 and 4 and Division 22 of the CTCI (food products and live animals, beverages, tobacco and oil seeds).

Food dependency cannot, however, be likened to a mere food balance deficit. It is not only a matter of finished goods but all the inputs and imported equipment throughout the agrifood chain. Should external food dependency be defined as the impossibility of directly or indirectly meeting the demand for food consumption of own resources, or does it imply a lack of control over external relations and over the strategic links in the agrifood chains? Food imports not only constitute a balance that making it possible to bridge the gap between production and consumption. They are also competing commodities, which can stimulate the supply and are a source of income for those who manage to control them.

### 1.1.3 - Rapid urbanization

The process of urbanization in Africa is taking place very rapidly. While the SSA is still the least urbanized sub-continent in the world, the growth rate of the urban populations there is not only the most rapid in the world but it has tended to increase (5.3% on average throughout the '60s, and 6% during the '70s) before falling back during the '80s to around 4.5% (namely, the average natural growth rate plus 1.5%), mainly due to the decline in migration flows. Whereas the SSA was less than 10% urbanized thirty years ago, it is now undergoing an average urbanization rate in excess of 35%, and over 40% of the population will be living in the towns by the year 2000. Even though West Africa is twice as urbanized as Central Africa (20% v. 40%) the same internal demographic growth rate and the rural emigration trends are pushing the continent along.

While the population of the SSA countries almost tripled between 1950 and 1990 (from 164 million to 478 million) the urban population increased over ten-fold during the same period from 15 million to over 150 million (see Table 2).

**Tableau 2 - Urban population growth in SSA**

	1930	1950	1960	1970	1980	1990	2000 *
Population of 45 SSA countries (m):	130	164	203	265	360	478	661
Rural population	122	149	176	207	257	323	400
Urban population (Population over 5000)	8	15	27	52	103	155	260
Urbanization rate (%)	6	12	16	22	30	33	40
Town size:							
> 1 million	0	1			10		
> 100 000	10	28			160		

\* CERED FORECASTS

Source: *Calculs à partir des statistiques Cour/ILTA, WALTPS, p. 7.*

It has been estimated (WALTPS, 1994) that the urban population of francophone Africa rose from 8.6 million in 1960 to 25.1 million in 1980 and 41.3 million in 1990, giving an urbanization rate respectively of 14.3% to 25.1% and 31.8% (see Table 3) which is close to the African average.

The urban explosion is accompanied by an uneven spatial distribution, with megalopolises growing with a weak urban backbone. There is a prevalence of main towns as opposed to a relatively weak network of secondary towns, while the large towns are very weakly locked into their rural surroundings. In the majority of African countries, the main towns are growing more rapidly than the secondary towns: the rate for the main towns has risen over twenty years from 35 to 45 per cent (Hugon & Pourtier, 1993). In 1980, SSA had 12 towns with more than one million inhabitants, 160 with more than 100 000 and about 3 000 with over 5 000 inhabitants (see Table 2).

**Table 3 - Francophone Africa: total population, urban population (in millions), urbanization rate in 1960-1990**

**1960-1990**

	1960			1980			1990			Urban growth	
	Total population	Urban population	Urbanization rate	Total population	Urban population	Urbanization rate	Total population	Urban population	Urbanization rate	1980/90	
Benin	2.03	0.21	10.3	3.45	0.95	27.5	4.5	1.69	37.5	5.2	
Burkina Faso	5.32	0.53	10.-	7.19	1.34	18.6	8.68	2.05	23.6	10.0	
Burundi	2.46	0.09	3.7	4.12	0.19	4.6	5.33	0.28	5.2	6.9	
Cameroon	4.48	0.79	17.6	8.64	2.54	29.4	11.48	4.75	41.4	5.4	
Congo	0.83	0.29	34.9	1.64	0.91	55.5	2.30	1.64	71.3	5.9	
Côte d'Ivoire	3.18	0.53	13.7	5.28	1.49	28.2	11.44	5.57	48.7	5.4	
Gabon	0.45	0.09	20.-	0.73	0.27	37.-	0.94	0.55	58.5	6.0	
Guinea	3.19	0.46	14.4	4.41	1.09	24.7	5.27	1.41	26.7	5.7	
Mali	4.86	0.27	5.6	5.70	0.62	10.8	8.18	1.86	22.7	5.1	
Mauritania	1.00	0.10	10.-	1.55	0.50	32.2	1.96	0.82	41.8	7.6	
Niger	3.77	0.20	5.3	5.82	0.71	12.2	7.68	1.22	15.9	7.5	
C.A.R.	1.25	0.26	20.8	2.00	0.76	38.-	2.44	1.02	41.8	3.0	
Rwanda	2.41	0.05	2.1	5.11	0.23	4.5	6.92	0.36	5.2	4.9	
Senegal	2.85	0.85	29.8	5.60	2.15	38.4	7.29	3.11	42.7	4.0	
Chad	3.04	0.17	5.6	3.69	0.40	19.-	5.45	1.39	25.5	3.4	
Togo	1.47	0.26	17.7	2.60	0.63	26.-	3.45	1.00	29.-	5.3	
Zaire	16.65	3.46	21.-	28.15	7.46	26.-	36.60	12.55	34.-	-	

Source: Arnaud, 1996.

A macrocephalous situation (the concentration of the population in the largest towns) is emerging, even though this is sharply reduced when examining the situation in terms of regional groupings. Urbanization has gradually shifted towards the lower levels of the hierarchy. African urbanization obviously has its own specific forms (swinging population movements, the ruralization of many areas).

## **1.2 - Links between urbanization and international supply and distribution circuits**

It is evident that in terms of pace, dimension and the resulting structural changes, francophone African towns are making it increasingly necessary to resort to external food distribution and supply systems. Imported bread, rice and meat are rapidly

becoming commonplace.

Resorting in this way to external supply and distribution circuits is increasing as multinationals play an increasingly important role in the agrifood chain and since international prices are not equilibrium prices. This is largely the result of over-supply due to protectionist measures and subsidies practiced in the industrial countries. There has also been a long-term slump in world prices. Between 1980 and 1993 real prices fell by 51% for cereals, 68% for beverages and 53% for other food products. This, coupled with what has often been an upward exchange rate has encouraged recourse to food imports.

There is a certain parallel between food deficits and the urban explosion in sub-Saharan Africa. In 1982/1984 cereals imports made it possible to feed 50% of the urban African population. However this percentage fell to 32-33% in 1985/86 and 1990.

**Table 4 - Comparison of food deficits and urban expansion of the developing countries and in SSA**

	Cereals Balance (Millions of tonnes)		Population fed (millions)		Urban population (millions)		3/5	4/6
	(1) DCs	(2) SSA	(3) DCs	(4) SSA	(5) DCs	(6) SSA		
1934-38	-108.7	-	-	-	101	9	-	-
1948-52		- 0.3	30	1.5	189	15	16%	10%
1958-62		- 1.25	71	5.9	294	38	37%	20%
1968-72		- 3.15	115	15.0	457	53	37%	30%
1973-77		-	190	-	-	-	-	-
1978-82		- 8.80	709	42.0	706	102	44%	40%
1982-84		- 15.0	-	71.5	-	115	-	50%
1985-86		- 8.5	-	40.4	-	127	-	32%
1990		-10.5	1540	50	1823	150	29%	33%

(1) Excluding Argentina and China. (3)(4) According to the standard 210 kg/person.

Sources: Bairoch, for the developing countries (low and intermediate income economies). US Department of Agriculture for the SSA and the World Bank.

The urban explosion is also changing consumption patterns. It is causing a breakdown in former ways of meeting needs and is obliging the authorities to respond to the increasing demand through temporary or permanent imports. Some sources have estimated that 90% of food imports into Africa in 1980 were to supply the towns.

At the same time, the facilities and constraints created by opening up the dependent economies have often hastened urbanization: the blockages created by resorting to external fresh food supplies, the possibility of establishing "food security" in the towns with (free or purchased) contributions from abroad, the temptation to solve urban social conflicts by importing food and the difficulties found with marketing local products in the towns are all factors through which opening-up to external sources of supply reacts to the pace of urbanization and the forms it takes.

## **Figure 1 - The urban population and the cereals imports in Sub-Saharan Africa (1950-1990)**

Many authors, such as Lipton (1977), have stressed an "urban bias" which has led to over-evaluating the exchange rate, before the adjustment measures, and to undervaluing agricultural products in order to boost the urban purchasing power. Other authors have emphasized the income which the African authorities make from cereals imports.

### **1.3 - The rejection of false evidence regarding external urban supply circuits**

Statistical links and causal relations between urbanization and agrifood import circuits are by no means as obvious as the previous analyses seem to suggest. The complexity of the channels, the reversibility of the trends, the huge socio-economic disparities between African countries, and differences in the urbanization processes all make the magnitude of these external circuits relative.

This makes it necessary to set up typology groups. They lead to differentiating between the medium and long-term trends and factors of instability. They make it essential to reincorporate essential factors that have been ignored such as the instabilities in the agrifood systems and the mobility of the population, leading the agents involved to:

- ? adopt strategies to counter uncertainties;
- ? adopt different methods for regulation and to reverse the processed;
- ? cut off and segment the area, leading to a heterogeneity of agrifood supply circuits;
- ? informal economies operating outside the range of statistical data capture;
- ? effecting transfers linked to the rights and obligations of community membership which gets round the town/village rift (Mahieu, 1991);
- ? the role of economic policies.

In the long term there is no evidence of any significant increase in African imports of food compared with other types of imports. The '70s is an exception in this regard.

Trends differ from one major region to another. The cereal-growing savanna-covered Sahelian regions have deficits which are not found in the forested equatorial African countries which grow root crops and tubers. Oil-revenue countries saw a sharp increase in imports throughout the '70s, contrary to the experience of the agricultural product-exporting countries. There are considerable sub-regional and local differences, too.

Once the false evidence is removed, one finds that the least urbanized countries in Africa are the ones that are comparatively the most food-dependent in the form of imports or food aid, and those which have the lowest value-added by agriculture per rural inhabitant.

African urbanization, which takes a wide range of different forms, has not generally led to a break in links between the towns and the countryside for a variety of reasons. The

agents belong to networks which overcome the town versus the countryside dichotomy. The large urban areas are places in which trade is intensified. The town is not only a place where agricultural surpluses are to be tapped, but above all a place for wealth creation through the division of labour and the market, and for setting up a demand that can be met. In the towns there is the diversity and lack of uniformity of food regimes with overlapping confrontation and dynamics of their own. The examples that are always given, namely bread v. rice, to characterize the "copycat models" must therefore always be taken in due proportion. There is a comparative ruralization of food consumption patterns (Requiers-Desjardins, 1989).

When one compares the demographic indicators of urbanization and food imports one can see the diversity between the results and the low level of correlation between these indicators.

The urban and rural African cereals circuit can be represented on the basis of Figure 2.<sup>1</sup>

**Figure 2 - The cereal macroeconomic circuit in Sub-Saharan Africa (magnitudes in terms of millions of tonnes for 1990)**

**Table 5 - Urbanization rates and food imports into Africa (1983/1992)**

	Urbanization rate		% food import/total imports	
	1983 (%)	1992 (%)	1983	1992 (%)
Benin	33.4	39.60	13.5	12.32
Botswana	18.3	27.30	14.3	9.76
Burundi	4.7	5.60	12.07	9.05
Cameroon	34.5	42.10	48.1	15.20
Cape Verde	24.9	30.00	28.7	25.83
Comoros	24.5	29.00	31.6	27.34
Congo	37.1	41.70	9.6	19.09
Côte d'Ivoire	37.7	41.70	18.8	15.33
Ethiopia	11.2	12.70	13.25	36.94
Gabon	38.9	47.40	12.7	12.37
Gambia	19.6	23.80	23.2	34.01
Ghana	31.2	34.90	16.7	14.70
Guinea Bissau	17.6	20.80	11.55	35.01
Equatorial Guinea	27.6	29.40	14.9	17.30
Kenya	18.3	25.20	8.3	12.52
Lesotho	15.5	20.90	16.9	12.12
Liberia	38.1	47.50	21.5	59.93
Madagascar	19.9	25.10	21.9	15.17
Malawi	9.9	12.50	4.93	17.04
Mali	17.7	25.10	15.3	12.25
Mauritius	42.0	40.60	20.9	11.22
Mauritania	34.5	49.60	51.2	32.44

<sup>1</sup> This figure is based upon strong assumptions. They provide magnitudes. The widely differing figures are cited by Azoulay and Dillon (1993) for 1980.

Mozambique	16.9	29.80	18.15	27.08
Niger	15.0	20.90	11.5	19.89
Nigeria	29.4	36.80	19.5	9.74
Uganda	9.1	11.70	5.52	4.75
Central African Rep.	40.8	48.30	27.7	18.19
Sao Tome & Principe	33.9	44.10	46.9	18.53
Sierra Leone	26.8	33.80	29.9	56.69
Sudan	20.2	23.30	14.7	18.19
Senegal	35.8	40.80	20.1	28.08
Seychelles	48.2	61.60	14.0	16.52

**Figure 3 - Comparative urbanization rates and food import rates (1983/1992)**

*Source: FAO, World Tables*

**Figure 3 - Linkage between urbanization rates**

**Figure 4 - Linkage between urbanization rates and value-added by agriculture per person (in dollars) (1980) and value-added per person by the primary and secondary sectors (1980)**

As a first approximation, the ratio between the urban and rural population is an indicator of agricultural production for marketing by the rural population to supply the towns. Obviously in a more finely-tuned analysis it is necessary to draw a distinction between the agricultural population and the rural population, to incorporate the agricultural component of the urban populations and take account of their different rates of activity. The urban/rural population ratio rose from 0.08 in 1930 to 0.18 in 1950, 0.19 in 1960, 0.28 in 1970 and to 0.41 in 1980; the growth rate of this ratio may be put at 3.2% for 1950 and 3.7% in 1980 (Cour/ILTA).

This ratio can be related to the value-added by agriculture ( $Y_a$ ) and the non-agricultural sectors ( $Y_{na}$ ). If one takes the strong assumption according to which these levels of productivity reflect the differences between the towns and the countryside, the "rural" and "urban" levels of productivity can be compared both in time and in space (see Figure 2).

For the whole of Sub-Saharan Africa, "productivity" in 1980 was about six times higher for non-agricultural activities than for agricultural activities (771 dollars per person compared with 131 dollars). Conversely, over time this gap narrowed: it fell by 20% between 1970 and 1980 (6.9 to 5.9). One may reckon that in Francophone Africa the value-added by rural inhabitant is around 340 to 400 dollars, compared with a value-added by urban inhabitant is around 1,100 to 1,990 dollars. The gaps narrowed sharply between 1980 and 1990 but they are still around one to three. It may be estimated that the agricultural surplus marketed in the towns by African peasants has more or less increased at the same rate as the ratio between the non-agricultural to the agricultural population (WALTPS, 1994). The gaps vary widely between different Francophone African countries; the productivity ratios vary from between 1.98 in Benin to 26.5 in Gabon. Apart from the oil producing countries (Congo and Gabon) the gap has narrowed, which suggests that the per capita urban income has been falling in

comparative terms.

The '80s were therefore characterized by a sharp narrowing of the gaps between the value-added in towns and in the countryside due to the implementation of adjustment policies (Cour, 1985; WALTPS, 1994). The wages of unskilled workers in the modern sector have fallen more steeply than the average wages. The so-called informal sector nevertheless plays a part of which little is known in cushioning and maintaining urban incomes comparatively steady.

#### 1.4 Typologies

The international supply circuits vary widely from one country to another. It is the coastal Sahelian countries which are most dependent in West Africa on external supply circuits (Cape Verde, Senegal, Mauritania, the Gambia). Using the "normal" values for agrifood imports (in terms of population, per capita GDP and urbanization level) West Africa draws comparatively less on external food supplies than the standard figures suggest.

A spatial analysis creates a distinction between the "parasite towns" that live off the rural world, with the "towns of independent means" playing a role or otherwise of redistribution vis à vis the rural world, the "cut-off towns" incorporated into the international area without any links with the rural world, and the "locomotive towns", as poles of development vis à vis their hinterland. Depending upon their morphology, the magnitude of their networks and the different modes in which the space is structured, towns have different effects on supply channels.

The division of Africa into eight major regions<sup>2</sup>Nigeria. depending on a variety of geographic, economic, agronomic, demographic and food-related factors, shows a very uneven picture (Hugon, Coussy & Sudie, 1991).

In six regions out of eight, the increased urbanization rate was matched by a reduction in food import rates.

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<sup>2</sup> We draw a distinction between the following:

4 non-Sahelian countries in West Africa (Burundi, Kenya, Uganda, Rwanda);

4 Sahelian countries in East Africa (Djibouti, Ethiopia, Somalia, Sudan);

4 Indian Ocean islands (Comoros, Madagascar, Mauritius, Seychelles);

9 Southern African countries formerly belonging to SADCC;

6 CEMAC countries

8 CILSS countries

the coastal states of West Africa;

**Table 6 - Food imports and urbanization rates in terms of the main regions of SSA**

	1983 Imports \$	1983 Import rates %	1990 Imports \$	1990 Import Rates %	1980 Urbanization rates %	1990 Urbanization rates %
East Africa	2.30	8.29	1.70	6.51	9.50	13.50
SADCC	4.00	21.06	4.90	11.18	18.30	25.00
East Sahel	5.80	15.74	4.30	18.23	19.20	25.50
CILSS	8.30	11.34	7.70	9.91	22.20	32.00
Indian Ocean	2.20	11.41	2.20	15.35	23.30	31.70
Coastal West Africa	8.90	20.64	8.40	19.93	35.10	45.60
Central Africa	5.20	18.73	6.90	17.48	37.50	50.10
Nigeria	12.30	19.53	3.40	7.51	46.00	55.00

Value: billions of dollars; import rates % of food imports/total imports

Source: Makaya, 1996.

**Figure 6 - Urbanization rates and food imports in the main SSA regions (1990)**

Source: FAO ILTA, Makaya

#### 1.4.1 - The effects of membership of the Franc Zone and the devaluation of the CFAF

There is a substantial Franc Zone bias at the level of food imports. One may consider that the lack of any currency constraints, the convertibility of the CFAF and the fact that it was over-valued encourage food imports. The Franc Zone countries consumed on average 20 dollars per person of imported products during the '80s.

The countries with sustainable adjustment paradoxically imported more than the countries with non-sustainable adjustment or the non-reformers. Conversely, outside the Franc Zone, the adjustment effects do not seem to have cut imports.

**Table 7 - Average imported food consumption per inhabitant (in US dollars, 1981) during the '80s**

Country	1980's average
Non-franc zone non-reforming (devaluation < 20%)	1,90
Non-franc zone non-sustainable adjustment (devaluation > 20%)	6,70
Non franc zone non-sustainable adjustment	7,05
Zone Franc non-reforming	7,50
Non franc zone sustainable adjustment (devaluation > 20%)	8,95
Non franc zone non-reforming	9,64
Non franc zone sustainable adjustment (devaluation < 20%)	11,09
Non franc zone non-reforming	12,97
Non franc zone non-sustainable adjustment	18,72
Non franc zone sustainable adjustment	25,58

Non franc zone non-sustainable adjustment (devaluation < 20%)	53,25
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Source: Makaya, 1996.

The devaluation of the CFAF in January 1994 had the effect of substituting imported food by local products. This has created competitiveness in the meat supply circuits (Burkina Faso and Mali became competitive at Abidjan against European returned meat or Argentine frozen meat). The “isocost” line shifted in favour of Africa. However one can see that the increase in imported food prices, taken as a whole, was lower than the rise brought about by the mechanical effect of devaluation (around 70 per cent in the first year) and that the local prices increased sharply, sometimes matching the price increases of imported products (Cameroon). The margin trends were decisive, and explain why the trends varied so widely from one country to another (Hugon in CERED/DIAL, 1995).

#### 1.4.2 - The four effects of urbanization on external supply circuits

Relations between urbanization and the dynamic of agrifood circuits are modelled in terms of macro-economic variables or economic policies. We can draw a distinction between four effects: wealth, income, security and poverty. The wealth-related effects cause the towns to drag the agrifood chain, while the income effect, otherwise known as *Dutch Disease*, has the reverse effect. The security-related effects lead to increased food imports, when production falls, while the poverty effect leads to the reverse result (Hugon, Coussy & Sudrie, 1991).

#### Table 8 - The different effects of urbanization on the agrifood circuits

##### **Wealth effects** (Côte d’Ivoire)

Reduced labour force drain by urbanization below increased matchable demand. Increased food imports lower than agricultural production increase.

##### **Income effects** (Congo, Gabon)

Income effects hasten rural exodus: labour force drain effects exceed rise in meetable demand. Combined effects of increased food imports and decline in agricultural production over the SSR.

##### **Security effects** (Sahelian countries)

Falling incomes and global imports and agricultural production. Pressure of urban demand creating increased food imports. Combined effects of reduced agricultural output and imports on the SSR.

##### **Poverty effects** (Madagascar)

Combined effects of lower production, lower agricultural output, lower imports and lower food imports. Economic adjustment by reducing the nutrition regime.

Notes:

Y<sub>a</sub> = agricultural output

Y = GDP

P<sub>u</sub> = urban population

M = imports

M<sub>a</sub> = food imports

SSR = food self-sufficiency rate or production below domestic use (final

and intermediate demand)

## 2 - URBANIZATION AND THE DIVERSITY OF SUPPLY CIRCUITS

An internal understanding of African circuits is obviously complementary to, and probably more important than the external interpretation of it.

### 2.1 - The strategies of the agents, the organization and regulation of supply networks

Account should be taken of the strategies adopted by the agents faced with the instabilities giving rise to risk and uncertainty, and the way they are organized in an institutional environment (Hugon, Pourcet & Quiers-Valette, 1994). On the one hand, the markets are poorly integrated and trading relations are only one form of coordination amongst many others. On the other hand, the public circuits supervised by governments have failed. The towns are supplied through networks in which there are domestic, trading, public and industrial rationales at work (Hugon, 1985). These are implemented in the form of regulatory frameworks and in institutional contexts. The municipal and central government public decision makers have resources of varying magnitudes at their disposal to regulate these circuits.

The operators who actually supply and distribute commodities act in an unstable universe, fraught with risks or uncertainties. This is why the vagaries cannot be probabilized and the arbitrage between risk (probabilizable)/profitability gives way to the arbitrage between uncertainty (non-probabilizable) and liquidity. The preference for liquidity, combined with the precarious nature of different situations (the thirst for money) and the search for reversible processes, leads to a high level of flexibility and short-termism on the part of the operators (a more rapid rate of return on advanced capital investment) (Hugon, 1993). Technical efficiency and the fact of taking account of the long term are guaranteed by networked organizations, making the operation permanent and reducing uncertainties. These networks can be organized on family, religious or ethnic bases. They cut transaction costs, and make spatial, time and social proximity possible, and work on the basis of relationships of trust and reliability.

Conversely the imported foodstuff supply circuits reduce costs thanks to economies of scale for standardized products. But they do not provide accessibility unless they are dovetailed with the circuits which create divisibility to cater for customers with a very low purchasing power, and only if they adapt to very unstable markets, and hence by creating flexibility. The industrial rationale is articulated with more or less informal networks.

One therefore finds combinations between modes of organization which seek to reconcile flexibility and reversibility which are necessary to manage the factors of instability, and the permanency and irreversibility of the techniques needed to ensure efficiency (Hugon, 1977).

#### Table 9 - The organization of the supply circuits

Efficiency	Flexibility	Weak	Strong
Traditional <b>domestic</b> organization			

Channels of **industrial** organization (economies of scale, capitalist process)  
Small **trading production** (informal)  
**Networks**

The towns have a stabilizing effect by diversifying supplies, food variety, lower fluctuations in income than is the case in the rural world, and a better circulation of information making it possible for the operators to arbitrate better. It is also a place of innovation, spatial organization, and concentration of powers. Nevertheless the factors of instability which create uncertainty and risk which the agents providing the urban supplies have to endure are considerable (Hugon, Pourcet & Quiers-Valette, 1994). The informal urban incomes fluctuate very widely, imports of food products (rice, for example) are extremely volatile, and urban insecurity is high.

The result is an organization of the supply circuits that may be analysed from various points of view:

- ? **functional:** linking the different faces of production, collection, transport, storage, processing, distribution, preparation and consumption;
- ? **spatial:** organizing the flows in the space around the collection points, networks, short and long haul trade;
- ? **temporal:** managing predictable, probabilizable and non-probabilizable random factors; storage operations, speculation;
- ? **relational:** coordination of the agents by contract, association, cooperatives, family constraints, relations of trust and loyalty-building;
- ? **technical:** levels of sophistication of the equipment, the reversibility of technical choices, the importance of innovation (of products and procedures).

## 2.2 - Supply channels

We feel that the food supply system can be understood by analysing it in terms of several circuits, networks or specialized channels viewed as ideal types. We will draw a distinction between four “channels”. Their siting presupposes that there exists a relationship between the levels of organization, the techniques used, the scales and the benchmark spaces (local, regional, national, international); in this way we can differentiate the space of the channel, defined in terms of the siting of different operations and the geographical space (for example, the urban space), the place where the channels intersect, or in terms of segments of channels.

The meso-system, or the intersections between different channels, in an intermediate place in order to understand - beyond the sequence of technical operations upstream and downstream, the dynamic of the subsystems within which force fields operate, trading and non-trading relations are established, modes of organization are implemented together with the strategies of the agents whose objectives and means used to achieve them have different levels of compatibility or incompatibility. Within these channels there are strategic segments defined by the places for establishing values, through the control of technology or the control of accumulation possibilities (De Bandt & Hugon, 1988; Hugon in Benoit Cattin, Griffon & Guillaumont, 1994).

Adjusting the production systems to different modes of food consumption is carried out

by operations which take on board the changes in the raw material (processing), in space (transport), in time (storage), and in allocation (distribution). The forms of production, trading and consumption are based on techniques that are more or less capitalist: they are effected by units varying in size and are organized using different forms of coordination.

### **2.2.1 - Transport**

Transport from the farm to the urban market generally takes place in at least four stages:

- ? from the field to the village (the first storage site);
- ? from the village to the pooling or collection point;
- ? from the collection point to the silo;
- ? from the storage point to the urban market.

The towns, particularly those on the seaboard, are better linked to the external circuits (South-East Asia for rice, North America and Europe for cereals, Latin America or South Africa for meat, etc.) than to the national areas of production. This lack of a local linkage is even greater when the international transport costs are lower, while the national transport costs increase to keep pace with the cost of energy.

The decline in international transport costs and improvements made to domestic overland transport have done a great deal to change the supply circuits and have hastened the urbanization process. Thus the city of Kinshasa (three million inhabitants) is supplied by the large international hauliers of wheat, rice and imported meat. It is also supplied by peri-urban agriculture and by suppliers walking or travelling by taxis. But it is above all supplied by small transporters coming from all over Lower Zaire and a large area of Bandundu, which covers an area of 50 000 km<sup>2</sup>.

### **2.2.2 - Storage**

By shifting the supply in terms of time, storage plays a seasonal price stabilization role or is able to help guarantee food supplies from one year to the next; it can also be used to speculate on deliberately-created shortages. The question of buffer stocks managed by the public authorities (local) whether national or regional, or by private operators is a central issue.

### **2.2.3 - Marketing**

Marketing operations depend on the distance between the producers and consumers in terms of their timing and complexity:

- ? direct sale by the peri-urban producer on urban markets;
- ? retail intermediaries between producers and consumers;
- ? wholesaler intervention in the case of long circuits, etc.

The authorities have often tried, with limited success, to control the private marketing circuits or to replace them with public marketing agencies, out of a desire to protect

urban consumers and producers against irregular practices by intermediaries, or to acquire rural surpluses at source. Today, under the influence of the international fund donors, the public monopolies have been dismantled to give way to private trade.

We shall draw a distinction between four main channels, circuits or networks, in terms of their technology, organization, mode of regulation and spatial dimension:

- ? domestic (local);
- ? artisanal and trading (regional, infranational or supranational);
- ? governmental (national);
- ? industrial and capitalist (international).

### **Table 10 - Types of food supply circuits in Africa**

Dominant mode for regulating the channel

Production system

Transaction mode

Consumption mode

Space

Time

Main agents

Main coordination mode

Global functions

Objectives

Domestic

Traditional techniques.

Codified social relations (e.g. kinship)

Service, redistribution (barter, gift/counter gift)

Symbolic significance of subsistence goods (prohibited, customary rules), domestic consumption

Family and local (villages, districts)

Production uncertainty/control of circulation and use.

Intergenerational. heads of households, elder brothers, notables, kinship relations.

Communities

Codified rules *ex ante*. Custom, trust. Regulation system (village storage)

Human energy reproduction. Intergeneration of household units. Food security.

Trading artisanal or informal

Elements of the production system controlled by direct producers (land, technical work). Low-level capitalist technology.

Expensive trade because of the many operations and agents involved. The essential role of mediation. –

Processed food to reproduce human energy

Local, regional and inter-African markets.

Uncertainty regarding production and use.

Flexibility and mobility in relation to non-controlled time. Reversibility.

Small intermediary trading producers. Peasants. Private operators. Retail

and wholesale traders.

Prices on official or parallel markets. Competition on local markets. *Ex post* coordination by prices.

Exchange of equivalent. Access to monetary incomes and urban markets.

#### Government

Imported industrial technology. Wage or semi-wage earners. Administrative supervision. Capitalist technology.

Monopoly circuits. Constraint or integration relations. Stabilization funds. Public marketing boards.

Medium and high income urban food consumption (bypassing on parallel circuits. Exports.

Urban, national and international markets.

Medium and long-term planning in an unpredictable domestic and international universe. Stabilized relations. Irreversibility of technical processes.

State marketing corporations. Stabilization bureau. Public development agents.

Administered pricing. *Ex ante* coordination by regulation. Command economy.

Foreign exchange. Urban food security. Substitution. Imports, exports.

Mobilizing the small farmers' surpluses. Reproduction of the state apparatus.

#### Capitalist and industrial (agribusiness).

Technological revolution. Agro-industrial complexes. Wage-earner relations. Bank supervision. Technical innovation and apprenticeship. Capitalist techniques.

Inter-company integration relations, company/government agreements, oligopoly competition on international circuits.

Industrialization and world services. Standardized product consumption.

International and transnational.

Control of variables by controlling information and organization systems.

Medium and long-term strategies. Irreversibility of the technical process.

Multinational groups and governments of industrial countries. Supermarkets.

International oligopoly markets. Intercompany integration relations. Company agreements. Governments. Transaction costs cut by internationalization.

Capital enhancement, accumulation. Disposal of surpluses. Expansion of multinational groups.

### **2.2.3.1 - Domestic circuits**

The domestic circuits are characterized by family, ethnic or religious proximity. They can be specified in terms of the modes of production, transport, distribution or use of the food products, which establish trust through personal bonds and through obligations.

Modes of production are characterized by the technical and social division of labour (for example, the division between older and younger brothers, men and women, masters and servants) corresponding to the techniques used and to the arbitration of the allocation of household working times. Rules for conserving, sharing and distributing food are laid down according to existing rules. Uses of food are codified (forbidden, the symbolic value of goods, non-convertibility between these goods).

The town is not necessarily a place where domestic circuits and inter-family flows are suppressed or even reduced. In a period of urban crisis there is a tendency to strengthen these non-trading relations; they make the urban agrifood system highly flexible.

Many supply circuits are operated directly by peri-urban town/country movements. About three-quarters of the residents in Dakar came from Khombole and returned there in 1983 during the dry season, in the cropping season (Bricas, 1996). These temporary migrations are one of the main forms of food supply. The crisis is leading to new arbitration between domestic consumption and non-home consumption. The rehabilitation of the streets, and the travelling sellers constitute between one-third and one-half of the rice sales in Ouagadougou (in 1989 it is estimated that domestic consumption in the urban environment of Benin or Mali was about one-fifth of all monetary incomes).

The vitality of the domestic social networks has done a great deal to cushion the urban and food crisis. Incorporation into the town is supervised by groups and associations set up on family, cultural and religious bases. The ruralization of the towns is shown in terms of the localized proximity cultures, by the existence of town dwellers-country dwellers, by the development of agro-urban and intra-urban intensive agriculture systems. The boundaries of the urban lands are increasing peri-urban movement. If a counter-urbanization movement is not evident, the time spent by the urban dwellers in the rural zone increases (Dubresson, 1996).

### **2.2.3.2 - The trading circuits organized on an artisanal basis**

Within the trading circuits organized on an artisanal basis, the agents relate through the market. These are small-scale activities, organized according to non-wage earner relations, where techniques are simple and advanced capital is weak, but where there is monetary circulation and the interplay of prices. Food is a merchandise.

These decentralized circuits, often networked, adapt to the high level of instability and are based upon personal bonds. These merchant circuits or channels are characterized by a division of labour in which the direct producers, processors, transporters, storage operators, retailers and wholesalers, distributors and cooks preparing food in the street are all involved, making it possible to channel through the products, to create storage services and make it possible to divide supplies and provide access to the end-users.

These trading circuits are tending to standardize and stabilize specific eating patterns; they are changing the places where products are processed and are broadening the area of circulation of the merchandise at the following levels:

- ? peasant farms: the possibility of generating a monetized surplus requires available productive forces, a change in the social division of labour and market accessibility both at profitable prices, taking account of production costs. The farm producers or artisanal processors who are incorporated into an unpredictable universe, have counter-unpredictable strategies for diversifying risks, by mutual aid or arbitrage between the trading and non-trading sectors, which cannot be likened to the objective of maximizing the marketed surplus;
- ? circulation or transaction activities which presuppose the existence of

infrastructures for storage, transport and marketing, and the emergence of innovative groups that have broken with the domestic structures or, on the contrary, depend upon them. The traders rely on the spatial incomes or oligopsony in the links between the towns and the countryside, but they have to endure a competitive market in the towns;

- ? processing activities: artisanal food production presupposes a whole set of conditions providing access to equipment and inputs, and a demand that can be met, which is made possible in a trading economy;
- ? end-use and the preparation of food which is often taken outside the home: the price of the calorie becomes important to explain consumer choice.

These circuits operate on regional, infranational and inter-African, both localized and segmented, markets, which explains the wide degree of heterogeneity and instability of prices and the absence of the rule of a single price due to market integration. The intermediation function between the producers of unprocessed goods and the final consumer is strategic.

Surveys have shown that there is also a transfer of peasant processing activities towards the urban craftsman (of cassava that used to be marketed in the form of chikwangue, and today in the form of fougou in the Congo, for example) and at the same time a transfer of domestic food preparation activities towards the market. In Côte d'Ivoire, the production of attiéké requires a division of labour between the husband who produces the roots, the wife who takes responsibility for most of the preparatory work, the artisan who mills the product and a parallel circuit supplying leaves. Likewise in Nigeria, the preparation of gari, according to an FAO survey, mobilizes one million women who work 40 hours on it; three-quarters of Nigeria's cassava production (nine million tonnes) is therefore processed into gari, providing two million tonnes which are then consumed (Requier-Desjardins, 1989).

Except for certain specific products (bread, beer, preserved food) the international circuits generally seem to be incapable of meeting the otherwise meetable demands of the majority, of creating divisibility and showing the flexibility which the small trading activities are able to guarantee. The town, and the market which can be catered for, are an essential factor in stimulating this small trading production, not only for market gardening produce and small-scale livestock production, but also for the foodstuffs needed to meet urban demand.

The private food marketing circuits to serve the urban centres incorporate a variety of different operations (purchasing from the producer, storage, transport, wholesaling, semi-wholesaling and retailing on the urban markets, etc.) involving a large number of different agents. The organization of these circuits varies depending upon the country, the products being marketed and the distance between the places of production and the places where products are marketed.

The private micro-retail trade virtually has a monopoly in most African towns on supplying local foodstuffs ("Market mamies" in Ghana, "Bayam Selam" in Cameroon, etc.) and has withstood many measures to nationalize trade; in quantitative terms, it represents the most important "informal" activity.

Long distance trading is segmented: a large number of operators in different places work in this channel linking producers to consumers. In Sahelian Africa several categories of traders are involved in the "long haul" circuits of cereal products:

- ? collectors, who act as intermediaries at the village or the nearest local market level;
- ? collectors, who visit the local and/or regional markets, acting on behalf of the producers or wholesalers;
- ? wholesalers, installed in the urban centres;
- ? retailers, lastly, who are responsible for disposing of the cereals on the urban markets (Berg, 1977).

Running parallel to this tree-like structure, the "casual traders" use the opportunity for travelling to take cereals with them and to sell them on urban markets.

The large number of different agents involved in the food distribution channels cannot be used to gauge the level of competition on these networks. The absence or the weakness of the distribution or transport, storage and packaging circuits, the fact that the production zones are cut off and the weakness in the urban grid all help to ensure that these networks are structured in the forms of monopsonies or oligopsonies.

According to a survey carried out by Franqueville in 1973 of the markets in Yaoundé, 80 per cent of the sellers came from a radius of less than 50 km. The "Bayam Selam" play an essential role in supplying the two main urban centres. In the small towns close to Douala, like Muea, 2 000 traders work on the days of both weekday markets in order to take on supplies of foodstuffs from the peri-urban zones and they re-export them to such urban centres such as Douala, or to Nigeria. The large straggling villages are places in which goods are collected and redistributed in the direction of the large towns according to Parrot's survey in 1996. Even though urban growth has increased the density of occupation, and even though land speculation has often caused agriculture *intra muros* to disappear altogether, the areas of peri-urban production which supply the "silent markets" remain key areas in the supply of large African towns. According to some surveys, 72 per cent of the supplies to the capital city in 1962 came from the Pool region (the hinterland of Brazzaville) and more particularly from the areas situated along the main road RN1 (Brazzaville-Pointe Noire) between 20 and 70 km from the town centre. These figures were confirmed 30 years later.

There are about ten categories of operators on the Nigerian cereals market; the number of intermediaries depends above all on:

- ? the accessibility of the markets (rural, local, regional and urban);
- ? the modes of transport (trucks or railway);
- ? the storage facilities.

### **2.2.3 - The public circuits**

African central government and local authority intervention in the food marketing circuits has often been justified in the past because of a desire to make up for the consequences of imperfect competition in the private distribution circuits

(Malthusianism, monopsony pricing, poor or under-utilization of production areas). The government may be content with merely regulating (particularly on the delivery prices). But it may also act as a fully fledged economic agent, setting up substitution circuits (public marketing boards).

The public or parastatal supply circuits have been created as a result of a non-coercive creative process by the local authorities or the state. They are defined in terms of certain objectives:

- ? to guarantee urban food security;
- ? to substitute imported products or to export;
- ? to compete with or recontrol the private circuits in foreign hands or in monopoly situations, or even mobilizing a surplus in order to finance the government apparatus or the accumulation process.

The circuits are designed at the national level and comprise the following operations:

- ? agricultural production: integrated development operations range from the supervision of the quasi wage-earning peasant, to all the intervention structures and even state-owned farms. They may be purely for foodstuffs (paddy fields) or they may be incorporated into agro-industrial complexes (sugar and palm oil). The techniques are highly capital-intensive and are generally imported; production is by wage-earners or quasi wage-earners, and the main role of production is essentially to supervise producers and integrate them into the technical/bureaucratic structure;
- ? transaction: public marketing boards or cooperatives: storage and packaging, transport (cereals boards). Relations are essentially regulatory or for integration. They are based on subsidized output prices and rely on public stabilization boards;
- ? processing: public agro-industrial processing enterprises for local or imported products;
- ? end distribution: public distribution companies and cooperatives.

The authorities have laid down medium and long-term plans designed to reduce unpredictable factors or monopoly incomes from the domestic trading circuits and the international circuits. They are based both on foreign firms (by providing various kinds of incentives) and on domestic private operators, and more often on state-owned corporations or jointly state/private-owned companies. Regulation is guaranteed by all the state measures adopted (public investment, administered prices, protection).

Taken as a whole, the public and parastatal circuits are not very efficient. The main agricultural production operations in the rice industry (SAED in Senegal, MOPTI in Mali, SEMRI in Cameroon, SOMALAC in Madagascar) have been comparative failures; in some cases, as in Senegal, they even reached the limit of subsidizing rice three or four times more costly than on the international market and to see the peasants consuming it themselves. The state farms in the Congo and in Madagascar have failed similarly.

There is also a low level of efficiency in the cooperative and state marketing structures.

The OCV in the Congo, OPAM in Mali, ONCAD in Senegal, SINPA in Madagascar or MIDEVIV in Cameroon were designed to bring about the recovery of food product marketing and to cash in on the commercial margins, but they made late payments, purchase from the small farmers at lower prices and sold the products at the same and even higher prices to the urban consumers. These organizations financed a very costly techno-structure which was very inflexible, even though they were public services and managed to prevent speculation.

The public structures play an essential role in Senegal in the rice industry (Benz, 1996). It is estimated that 35 000 tonnes of the 160 tonnes produced in 1988/89 were marketed through the public circuits, 30-50 000 tonnes through private circuits and 75-95 000 tonnes were processed on an artisanal basis and consumed by the producers. The farmers choose partly between the official SAED circuit and the private circuit, but often they pay SAED in kind in order to refund or pay taxes or royalties, or to repay CNCAS loans. In the Senegal River valley, the public sector which was responsible for all the functions relating to collection, processing and distribution, is gradually giving way to the private sector. Senegalese rice is not very competitive with Asian rice. The centralized organization is creating high costs both in terms of production and marketing.

These public supply circuits have not been as efficient in the past as they were expected to be. They have been seriously challenged by liberalization and privatization policies that have been implemented since the early '80s.

#### **2.2.3.4 - The international capitalist circuits**

The international circuits for supplying towns have three main sources:

- ? the first relates to food imports (cereals and meat) through import companies that are connected to the world markets. They more often operate in connivance with the state under import quotas or licences. The liberalization of foreign trade has partly created greater competition between these trading companies. Rice importers are foreign, African, private and public. In Guinea, the top six companies account for 60 to 95 per cent of all private imports. Risk management, linked to market and exchange rate instability, and financing are decisive in explaining the way in which these oligopolies operate. In Senegal, rice imports have been the monopoly of public organizations for a long time (ONCAD, and then CPSP). These public structures have led to increased costs, but they have guaranteed regular supplies. Privatization has created competition despite the oligopolistic configuration (Benz, 1996);
- ? the second relates to the way in which food aid is channeled through, with its source mainly in the surpluses of the industrialized countries linked to highly productive capitalist agriculture. Food aid is sold at market prices for less than 40 per cent, or is given in exchange for work (WFP) for less than 15 per cent, and is distributed free of charge or sold at social prices for over 55 per cent (emergency or refugee relief aid) (Azoulay & Dillon, 1993);
- ? the third forms part of the dynamics of multinational food corporations.

Agriculture, negotiation, processing, distribution and rehabilitation are all links in the same chain and are characterized by a technological revolution which affects agriculture upstream (biotechnology) and downstream of distribution (packaging, containerization, conservation). Agriculture becomes a mere secondary link within the chain. The large multinationals form the centre of inflows which dynamize the whole system. It is estimated that between 85 and 90 per cent of the wheat and maize trade and 70 per cent of the rice trade are controlled by the multinationals. By intervening on international oligopolistic markets, the multinationals rely on relations with the government in order to dispose of their surpluses and to penetrate the exterior markets. By establishing a certain standardization of eating patterns, the agribusiness is creating progress in terms of productivity, and helping to lower merchandise prices.

The penetration of the external markets takes place in the framework of the oligopolistic competition between large firms, but also by relying on international cooperation and aid relations (export subsidies, food aid). By controlling the main unpredictable features by controlling information and by effectively managing them, which makes it possible to affect the process of differentiation between the different national areas, the large corporations have medium and long-term strategies which enable them to control the strategic links within the various chains.

The role of the multinationals in Africa is comparatively small, however. Direct investment is small. The markets that can be catered for are weak. Standardized products find it difficult to penetrate markets characterized by a high level of heterogeneity of feeding patterns. The low level of development of agricultural or industrial capitalist units is creating few outlets for equipment, machines or inputs supplied by the agribusiness. Only a few links in the transnational chain have penetrated into African societies: upstream of agriculture (fertilizer, equipment), IAA.

### **2.3 - The town and the intersection of the circuits**

The town is the largest area of integration into international circuits, for setting up a cold chain, for locating foreign branches or providing access to international goods (it is still necessary to examine their geographical location). However it is also a place where different internal intermediation operations are set up. In the town there is certainly a dissemination of imported consumption models, but the effects differ from one town and one type of feeding pattern to another. The town is generally more a place in which new feeding patterns are recomposed than places where there is a split with the rural world.

The breakdown by type that we have just described makes it possible to avoid a breakdown by branches or by commodity of little significance, because the “same commodities” have neither the same values in terms of use, nor the same social values, and because the circuits are highly segmented. However, this leads to an amplification of the organizational differences when the practices lead to complex combinations.

There are a large number of supply systems, which overlap. The operators combine different forms of domestic, artisanal, industrial and administrative organization in the form of networks, or they develop interlocking strategies making up a meso-system.

The specific reality of African societies is characterized by intersections and interconnections between the circuits or the segments of the different channels. Certainly each one has its own dynamics, operating on different scales and within different time frames. There is not necessarily any absorption or dominance on the part of large-scale organizations with advanced technologies in respect of other organizations. The operation of the town supply modes nevertheless needs to competition or complementarity between the segments of different circuits.

In the present crisis from which Africa is suffering at the present time, the observer can therefore study the re-emergence of domestic circuits (demonetization of the economies, the reduction in trading relations) or the dynamics of the trading networks. Conversely the government channels are directly suffering from the supply and financing crises even though the integration of the African economies into the international market is taking place meanwhile downstream (imports of food products at the expense of capital equipment) and through inputs.

These relations of competition or complementarity also stem from the central governments' overall policies. The non-coercive measures to set up central government circuits through external protectionism and internal subsidies (administrative pricing, real negative interest rates) are creating distortions between the production structures and the structures of food consumption, while the latter are creating national or international parallel circuits which are boosting the trading networks. Conversely the liberalization policies are leading to exclusions because of a lack of demand that might stimulate the domestic units.

The urban networks are characterized by an interweaving of different supply circuits whose respective importance differs according to the society, the regulation policies and the macroeconomic context.

Two main combinations are developing: the one between the capitalist industrial organizations and the trading networks, in order to combine effectiveness and flexibility, and one between the domestic units and the trading networks in order to ensure food security for households.

#### **2.4 - Conclusion: what are the prospects and what actions are needed?**

Past developments have shown that Africa's food crop farming and supply circuits have, as a whole, responded to the urban challenge. The agricultural system marketed by the small farmers has increased at the same rate as the non-farm population to the farming population. Between 1930 and 2030 the urban world will have absorbed 70 per cent of the population increase.

Linkage to the market has been gradually established through the traded foodstuffs, which has played an increasing share in the traded GDP and in the agricultural GDP, at the expense of export crops and food produced for household consumption. By having given priority to ensuring low prices in the towns, the foodstuff supply practices have certainly not encouraged the domestic market to become more dynamic. Even so, the food production sold on the market has risen from 56 per cent of the GDP from

agriculture monetized in 1970 to 73 per cent in 1990 for West Africa (WALTPS, 1994). Taken as a whole, the rural population density trend has kept pace with the development of the urban markets.

Incentives to production have increased in terms of proximity to the towns, but construction constraints have increased. The result of these adverse factors has meant that the productivity per surface unit and per farmer is inversely proportional to the distance from the towns.

The question now arises as to whether this past trend is going to continue, and whether it will be possible to supply the towns without too many difficulties and crises.

#### **2.4.1 - What are the prospects for the towns?**

The fall in the migration balance from two to one per cent per year, coupled with the decline in natural growth rate from 3 to 2.5% per year suggests that the urban population growth will fall from 5 to 3.5% by the year 2020. Between 1990 and 2020 the urban population will grow at an average of 4.2% in West Africa, compared with 6.3% between 1960 and 1990. The urban population will increase 3.5-fold. It may be reckoned that the rural population will grow by 1% per year, making an increase of 40%. At a constant urbanization rate, the average growth rate of the towns is likely to be around 2.69%, compared with 3.35% for the period 1960/1980. In absolute terms, this will cause the urban population to double in less than 20 years.

#### **2.4.2 - What are the prospects for agriculture?**

Cash food crop agriculture must meet these growing needs. The result is likely to be an increasing differentiation within the peasant communities. According to WALTPS forecasts, by 2020 agriculture will provide 14% of gross regional product, 25 million farmers (15% of the total) will produce the amount necessary to supply 40% of the consumers, namely 100 million people; their productivity will be five times the self-subsistence level while the average productivity of the 150 million farmers will remain around twice the subsistence level. One may reckon that the calorie requirements will increase sharply. This is put at 250% between 1995 and 2050. Most of the energy will be of plant origin.

#### **2.4.3 - Which supply circuits?**

Intra-regional trade by the trading circuits will play an increasing role in supplying the towns. Regional trade will account for 22% of imports compared with 9% in 1990. The imported portion of the food demand will rise from 11% to 15%. Intra-regional trade will provide more than one-half, compared with 14% in 1990 (WALTPS forecasts).

Everything suggests that there will be a great instability in international prices and a tendency for food product prices to rise as a result of the reduced subsidies and protection afforded to agriculture in the industrialized countries following the WTO agreements. Africa's food bill is likely to rise sharply if import substitution is not practised to a significant degree.

A variety of supply circuits will be maintained. Intensive agriculture will be sited more in terms of the land tenure conditions than proximity to the market. Intensified agriculture in areas lying far away from the towns will nevertheless make it necessary for intermediation to become more highly professional. It will reduce the importance of domestic and short circuits. If public circuits have little chance of being revived, the domestic circuits will continue to exist but will play a secondary role in terms of the trading circuits. Wholesalers will play a major role there. The trading circuits will be dovetailed with industrial organizations.

It will be necessary to manage spatial disparities through physical planning and a dense infrastructure network. In francophone West Africa, Abidjan and Dakar will be the locomotive markets. If urban networks are to be developed more densely and supplies intensified medium-haul means of transport must be considerably improved. Most of the links will be with the hinterland of the coastal areas in West Africa.

#### **2.4.4 - How to manage food supplies to the towns?**

We have seen the complexity of the supply circuits which presuppose a “piloting” on different scales and levels.

Quite clearly, account has to be taken of the main gross trends which are taking place on both the international market and demographic factors, and accordingly put into place forecasting units. Great flexibility will also be necessary in policies in order to respond to the instabilities and risks and to have emergency units to respond immediately to disasters (drought, war, and epidemics).

It will be equally important to implement actions at the level of the *decentralized authorities* and municipalities. These will only be effective if they make it possible for the different public and private agents to act on a concerted basis within the supply channels. Contractual relations are generally more effective when faced with the ineffectiveness of the bureaucratic structures and the risk of market speculation.

Lastly, action must be taken at the microeconomic level, both in districts, domestic units and at the level of individuals. The most vulnerable and exposed groups and individuals are those who are excluded both from the market (because of a lack of demand that can be met), the public circuits (because of a lack of access to subsidized or donated products) and family and social networks which distribute food. This presupposes a mobilization of the authorities, the neighbourhood associations and charitable organizations, both secular and religious, working jointly with and supported by the international donors.

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