# Middlemen and Smallholder Farmers in Cassava Marketing in Africa

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Keywords: Food-marketing- Middlemen- Smallholder-farmer- Africa- Sub-Saharan- Nigeria


## Summary

*Cassava is a basic food staple and a major source of farm income in Africa. Efficiency in cassava marketing is therefore a very important determinant of consumers living cost and producers' income. Exploitation of one marketing agent by another in the course of product distribution could contribute to increased marketing costs and hence inefficiency. The paper examines the extent to which the widely held view that middlemen exploit farmers through monopsony purchases and usury apply to cassava farmers. The paper is based on primary data collected within the framework of the collaborative study of cassava in Africa (COSCA). The result of the analysis fails to support the view that middlemen generally engage in monopsony purchases of cassava products, because farmers had on average, higher volume of cassava products for sale in the market than middlemen. Prices of cassava products appeared more stable in Nigeria than in the other countries, because of the more elaborate involvement of middlemen, which encouraged competition. The intermediaries between the farmer and the consumer were at most three in each of the countries – the processor, the semi-wholesaler and the retailer. Cassava farmers and traders combined the role of the processor apparently because of the low development stage of mechanized processing technology. For both farmers and middlemen, transactions in cash were the predominant practice, followed by delayed payments. Advanced payment was non-existent except in Uganda. Marketing margins, though generally high, decline with good market access conditions. And the margins for granules were substantially lower than those of dried roots not only because of substantial differences in processing resource demand but also because of differences in marketing costs. This suggests that investments towards improving market access conditions, and in cost saving processing technologies for the production of granules are needed for the improvement of cassava marketing efficiency and development.*

## Résumé

**Les intermédiaires et les petits producteurs dans la commercialisation du manioc en Afrique**

*Le manioc est une nourriture principale et une source principale de revenus en Afrique. Ainsi une bonne efficience dans la commercialisation du manioc est un déterminant très important du coût de vie des consommateurs et des revenus des producteurs. L'extraction d'une rente excessive par un agent de la chaîne de commercialisation à un autre peut contribuer à alourdir les coûts de commercialisation et par conséquent créer l'inefficience. Le papier examine la mesure dans laquelle, selon le point de vue largement répandu, les agents de commercialisation exploitent les paysans à travers des achats monopsoniques. Est-ce également le cas des producteurs de manioc? Le papier se base sur des données primaires collectées dans le cadre de l'étude collaborative du manioc en Afrique (COSCA). Les résultats de l'analyse infirment le point de vue énoncé plus haut, parce que les paysans ont en moyenne un volume de produits de manioc en vente plus élevé que les intermédiaires. Les prix du manioc paraissent plus stables au Nigeria que dans les autres pays, parce qu'il y a plus d'intermédiaires en jeu, ce qui encourage la compétition. Le nombre d'intermédiaires entre les paysans et les consommateurs était au plus de trois dans chacun des pays - le transformateur, le demi-grossiste et le détaillant. Les producteurs de manioc et les commerçants combinaient le rôle de transformateur apparemment à cause du stade bas de développement de la technologie de transformation mécanique. Pour les producteurs et intermédiaires ensembles, les transactions en monnaie courante étaient la pratique prédominante, suivies par les paiements différés. Le paiement avant récolte n'existait pas, sauf en Ouganda. Les marges de commercialisation, quoique généralement élevées, diminuent avec des conditions d'accès aux marchés améliorées. Et les marges pour les granules étaient substantiellement plus basses que celles pour les racines séchées, non seulement à cause des différences substantielles en demande de travail pour la transformation mais également à cause des différences dans les coûts de commercialisation. Ceci suggère que des investissements dans l'amélioration des conditions d'accès aux marchés, et dans des technologies de transformation qui épargnent des coûts pour la production de granules sont nécessaires pour l'amélioration de l'efficience de la commercialisation de manioc et pour le développement.*


## Introduction

Cassava is a basic food staple, and a major source of farm income for the people of sub-Saharan Africa. It contributes about 40% of the food calories consumed in Africa (11) and both rich and poor farmers often derive more cash income from cassava than from any other crop or income earning activity (7, 13, 21). Hence, efficiency in cassava marketing is an important determinant of both consumers' living cost and producers' income. Moreover, as the process of urbanization progresses in Africa, an increasing share of national food consumption takes place at locations other than where food is produced. The marketing system must develop well to provide necessary services as producers sell in markets distant from where consumers buy their food (7). Yet, compared with cassava production, cassava marketing has received much less than sufficient attention (7, 20). There is however an inter-acting and mutually reinforcing relationship between increased production and efficient marketing (18). Efficient marketing system stimulates increased production, and the reverse constitutes a constraint to any development effort (17). A malfunctioning marketing chain constitutes an impediment to food security as investment in production becomes both more costly and more risky and may end up being wasted (7). At the farmers' level, which is the beginning of the marketing chain, food must not only be there

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(produced) to be moved, but must be there in reasonable quantity to attract enough market participants that would make for efficient distribution. This is the subject of another paper by Enete and Igbokwe (5). And then, having produced some surplus for the market, do middlemen exploit these farmers in the course of marketing? Exploitation of one marketing agent by another could contribute to increased marketing costs and hence inefficiency. The objective of this paper is to examine, through a description of the activities of farmers and middlemen in cassava distribution, the extent to which the widely held view that middlemen exploit farmers through monopsony purchases and usury apply to cassava farmers (9).

## Methodology

### Site and sample selection

Climate, human population density, and market infrastructure formed the basis for sampling. Four basic climatic zones were defined from temperature and duration of dry periods within the growing season.

Information available on all-weather roads, railways, and navigable rivers derived from the 1987 Michelin travel maps was used to divide a market access infrastructure map of Africa into good and poor zones according to the density of the roads, railway, or navigable waterways. Human population data from the United States Census Bureau were used to divide a population map of Africa into high demographic-pressure zones with 50 or more persons per $km^2$, and low, if less.

The three maps of climate, human population density, and market access infrastructure were overlaid to create zones with homogeneous climate, demographic pressure, and market-access conditions. Each climate/population density/market-access zone with less than 10,000 ha of cassava in each country was excluded. The remaining areas were divided into grids of cell 12' latitude by 12' longitude to form the sample frame for site selection. 282 grid cells, distributed among the climate/population density/market-access zones in proportion to the zone size were randomly selected in each country, depending on the size of the country. These were 71 from Congo Democratic Republic, 40 from Ivory Coast, 30 from Ghana, 65 from Nigeria, 39 from Tanzania and 37 from Uganda. A village was then randomly selected in each grid. This brings the number of villages selected in each country just equal to the numbers listed above. In each selected village, with the assistance of key village informants, a list of farm households was compiled and grouped into "large", "medium", and "small" farm-holder units, and the major market serving the village identified. All traders and farmers that sold cassava in the identified village market at the time of survey were used.

### Data collection

Leaders in cassava research in the national agricultural research systems in each country administered survey questionnaires to respondents and took various measurements. A rapid rural appraisal technique was employed to collect village-level information in the Phase I survey. Farmer groups consisting of men and women with a wide range in age were constituted and interviewed in each village. A structured (organized from production through processing to marketing) questionnaire was used to collect qualitative information on the following aspects among many others: (1) various production practices; (2) cassava processing methods including cassava products processed; (3) cassava marketing including cassava products marketed, points of sale and type of buyers; (4) village level altitude; mid-altitude refers to all the sampled villages that are more than 800 m above sea level and low altitude refers to all villages less or equal to 800 m above sea level. This survey was conducted in 1989-1991.

Phase II survey was aimed at detailed characterization of the cassava production methods at the field-level. The field-level information which was collected from all crop fields of the selected farm units included, field history, inputs applied, cassava root yield and field size. This information was collected in 1991 from the same villages as in phase I.

Phase III survey was at the household and rural market level, also in the same villages. Cassava traders and farmers in the identified rural markets serving each of the COSCA villages and relevant male and female household members were interviewed with structured questionnaire and relevant measurements taken. The information collected included type of cassava products traded, sources of purchases and outlets of cassava products, volume traded, etc. This information was collected in 1992.

## Results and discussion

### Sales of cassava products by farmers and middlemen

Table 1 presents the structure of volume of cassava trade in the study area for farmers and middlemen. The cassava marketing survey of the COSCA study was carried out at the

**Table 1**
**Average distribution of cassava sales by type of respondent by product by country**

| Country | | Farmers | | | Middlemen | | |
|---|---|---|---|---|---|---|---|
| | | Qty*(kg) | Value | Price/kg | Qty*(kg) | Value | Price/kg |
| Ivory Coast | Granules | 90 | 11627 | 120 | 113 | 14850 | 203 |
| | N | 11 | 11 | 11 | 11 | 11 | 11 |
| | Others | 142 | 7491 | 60 | 108 | 5572 | 70 |
| | N | 23 | 23 | 23 | 10 | 10 | 10 |
| Nigeria | Granules | 895 | 4871 | 6 | 718 | 3940 | 6 |
| | N | 15 | 15 | 15 | 112 | 112 | 112 |
| | Others | 2134 | 4960 | 4 | 1951 | 6651 | 4 |
| | N | 6 | 6 | 6 | 46 | 46 | 46 |
| Tanzania | Dried roots | 149 | 7679 | 59 | 249 | 18531 | 88 |
| | N | 5 | 5 | 5 | 22 | 22 | 22 |
| | Others | 58 | 2301 | 38 | 47 | 1809 | 44 |
| | N | 8 | 8 | 8 | 12 | 12 | 12 |
| Uganda | Dried roots | 1295 | 221920 | 532 | 343 | 10318 | 358 |
| | N | 11 | 11 | 11 | 22 | 22 | 22 |
| | Others | 547 | 58484 | 196 | 458 | 35514 | 166 |
| | N | 11 | 11 | 11 | 11 | 11 | 11 |

Note*= quantity

rural markets. As a result, the sampling was biased in favour of cassava traders as against farmers because, farmers mostly sell their cassava at the farm gate (15). This created an insufficient number of observations for farmers. We were therefore only able to separate the major derived product from others in each country – *granules* in Ivory Coast and Nigeria, and *dried roots* in Tanzania and Uganda. However, for the reason just given and the fact that all farmers who sold cassava in the market at the time of survey were used, the number of farmers sampled presents a good picture of cassava farmers who were motivated enough to carry their cassava to the local market for sale.

In general, farmers had on average a higher volume of each of the products considered in each country than middlemen. This is contrary to the view that middlemen generally engage in monopsony purchases of farm products (9). This could be because in most cases, cassava farmers were also processors.

In Nigeria, it did not matter whether one bought a kilogram of *granules* from the farmers or middlemen because the price was the same (Table 1).

In Ivory Coast and Tanzania however, the farmers' price for a kilogram of cassava product was much lower than that of the middlemen, while in Uganda, the farmers' price was higher than that of middlemen. Compared to these countries, Nigeria had better market access conditions (15). Consumers are therefore likely to have lower costs of switching from one seller to the other in case of price disagreements.

Percentage distribution of farmers and middlemen by who brought (traders, processor or consumer) their products is presented in table 2 which, along with figure 1 also show the cassava marketing chain in the study area. The chain indicates that the intermediaries between the cassava farmer and the consumer were at most three – the processor, the wholesaler and the retailer.

Eicher and Baker (6) reported that the food marketing chain of developing countries is generally limited to two or three intermediaries. Goossens (8) also reported between one and three intermediaries in cassava distribution in the Democratic Republic of Congo. In all the four countries, most of the farmers and middlemen sold either directly to the consumer or to the trader (Table 2). Only a very small percentage of them sold to independent processors. This reflects the level of development of cassava processing technology in Africa, which also hinders the development of independent processors of cassava. Machines for peeling cassava roots were not encountered in any of the COSCA villages despite the labour intensity of this processing stage (12). In addition, mechanized cassava processing was virtually non-existent in the COSCA survey villages of the Democratic Republic of Congo (14). Therefore, farmers and traders of cassava combined the role of the processor.

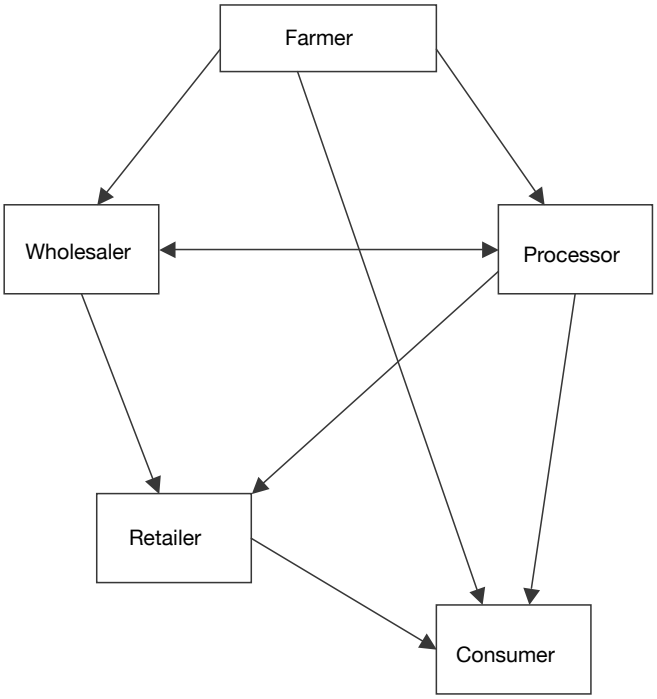


Figure 1: Channels of cassava marketing in Africa.

Table 2 also shows that the proportion of farmers and middlemen were almost evenly distributed between those that sold their cassava products directly to consumers and those that sold theirs to other traders in all the countries but Nigeria. In Nigeria, 76% of farmers sold their cassava products to traders and 76% of middlemen also sold theirs to other middlemen. The involvement of middlemen in cassava distribution system in Nigeria was therefore more elaborate than in the other countries. This is consistent with our earlier observation that compared to these other countries, market access condition was better in Nigeria and thus likely to attract more people into the cassava trade. In addition, Nigeria produces cassava mostly for sale to urban consumers, Ivory Coast and Uganda mostly as a rural food staple and Tanzania produces cassava mostly as a famine reserve crop (16). This suggests a greater need for middlemen in cassava distribution in Nigeria than in these other countries. This does not, however, lead to exploitation of the consumer, because, the mediation of marketing intermediaries between the producer and consumer of food improves efficiency and reduces costs of distribution (1, 2), and these indices get better as the number of intermediaries increase and vertically differentiate into specialized functions

**Table 2**
**Percentage distribution of respondents by cassava marketing outlets by country**

| Country | | | Type of buyer (percentage) | | | |
|---|---|---|---|---|---|---|
| | | N | Trader | Processor | Consumer | Total |
| Ivory Coast | Farmer | 34 | 41 | 12 | 47 | 100 |
| | Middlemen | 21 | 43 | 5 | 52 | 100 |
| Nigeria | Farmer | 21 | 76 | 14 | 10 | 100 |
| | Middlemen | 158 | 76 | 2 | 22 | 100 |
| Tanzania | Farmer | 13 | 62 | 0 | 38 | 100 |
| | Middlemen | 34 | 32 | 3 | 65 | 100 |
| Uganda | Farmer | 22 | 46 | 18 | 36 | 100 |
| | Middlemen | 34 | 47 | 6 | 47 | 100 |

**Table 3**
**Percentage distribution of respondents by time of payment receipt for cassava products sold by country**

| Country | Farmer | | | | Middlemen | | | |
|---|---|---|---|---|---|---|---|---|
| | Time of sale | Advance | Buyer sells product | Total | Time of sale | Advance | Buyer sells product | Total |
| Ivory Coast | 58 | 0 | 42 | 100 | 81 | 0 | 19 | 100 |
| Nigeria | 80 | 1 | 19 | 100 | 78 | 1 | 21 | 100 |
| Tanzania | 94 | 0 | 6 | 100 | 76 | 0 | 24 | 100 |
| Uganda | 86 | 14 | 0 | 100 | 76 | 6 | 18 | 100 |

like wholesale and retail (4). We had earlier noted that buying a kilogram of cassava product from the farmer or middlemen by the consumer did not make any difference in price in Nigeria (unlike the other countries), which implies price stability. Availability of middlemen facilitates the marketing process (13).

The COSCA study shows that virtually no advance payment was made to farmers by middlemen in all the countries except Uganda with only 14% of the farmers receiving advance payments (Table 3). Transactions in cash were the predominant practice for both farmers and middlemen in all the countries. This was followed by payment after the buyer sold the product (i.e. delayed payment). This is contrary to the general notion that middlemen advance credits to smallholder farm units at the crop-establishment stage and bind their supply in harvest to them at reduced prices, implying exorbitant interest rates. Van Tilburg (22) also observed that traders did not give credit to the farmers in Benin.

**Marketing margins**

Table 4 presents the price structure of cassava fresh roots and one major derived product (*granules* in Ivory Coast and Nigeria and *dried roots* in Tanzania and Uganda) in each country. When fresh roots were retailed directly to the consumer without processing, the farm price of a kilogram was 77% of the retail price in Ivory Coast, 50% in Nigeria, 62% in Tanzania and 76% in Uganda. Given that this was a short trade loop, and no processing was involved, the marketing margins of 23%, 50%, 38% and 24% respectively could be considered high. However, Goossens (8) also reported retail margins of 45% and 35% for cassava products in Bandundu and Bas-Congo of the Democratic Republic of Congo. Hayami *et al.* (9) observed a retail marketing margin of 30% for rice in the Philippines. For the processed cassava products, the retail marketing margins were 12% in Ivory Coast, 17% in Nigeria, 49% in Tanzania and 61% in Uganda. With the exception of Ivory Coast and Nigeria, these margins were also high. Riley (19) noted that as a rule of thumb, efficient markets in developing countries must have a retail margin of less than 10% of the consumer price for non-perishable goods and 12 to 17% for semi-perishable products with low added value.

These margins, particularly those of the processed cassava products appear to reflect the condition of market access in each country. Goossens (8) observed in the Democratic Republic of Congo that high marketing margins result from deteriorating socio-economic environment. For instance, while the marketing margin for granules was lower in Ivory Coast than in Nigeria, the percentage of the COSCA representative villages with good road access to the market was higher in Ivory Coast than in Nigeria (15). Similarly, the margin for dried roots was lower in Tanzania than in Uganda just as Tanzania had better market access conditions than Uganda.

Of particular interest is the high percentage of the retail price of granules that went to the processor, 88% in Ivory Coast and 83% in Nigeria, unlike dried roots with 51% in Tanzania and 39% in Uganda (Table 4). The processing of granules takes more resources, particularly labour. IITA (10) reported

**Table 4**
**Distribution of prices and margins by cassava products by country**

| Country | | Fresh roots | | Granules | |
|---|---|---|---|---|---|
| | | F*→M* | R*→C* | P*→R | R→C |
| Ivory Coast | Price/kg | 40 | 52 | 113 | 129 |
| | % of retail price | 77 | 100 | 88 | 100 |
| | Margin | - | 12 | - | 16 |
| | % of retail price | - | 23 | - | 12 |
| Nigeria | Price/kg | 1 | 2 | 5 | 6 |
| | % of retail price | 50 | 100 | 83 | 100 |
| | Margin | - | 1 | - | 1 |
| | % of retail price | - | 50 | - | 17 |
| | | | | Dried roots | |
| | | | | P→R | R→C |
| Tanzania | Price/kg | 26 | 42 | 46 | 91 |
| | % of retail price | 62 | 100 | 51 | 100 |
| | Margin | | 16 | - | 45 |
| | % of retail price | | 38 | - | 49 |
| Uganda | Price/kg | 70 | 92 | 246 | 623 |
| | % of retail price | 92 | 100 | 39 | 100 |
| | Margin | - | 22 | - | 377 |
| | % of retail price | - | 24 | - | 61 |

Note* - F= farmer, M= middlemen, R= retailer, P= processor, C= consumer

that as much labor is required for processing cassava roots into granules as is used in producing the roots themselves. The retail marketing margins for dried roots were therefore on the average four times that of granules. Compared to dried roots, granules have lower moisture content and longer shelf-life (14). It could therefore have substantially lower marketing costs than dried roots.

## Conclusion

The foregoing fails to support the view that middlemen generally engage in monopsony purchases of cassava products, because farmers had on average, higher volume of cassava products for sale in the market than middlemen. Prices of cassava products appeared more stable in Nigeria than in the other countries, because of the more elaborate involvement of middlemen, which encouraged competition. The intermediaries between the farmer and the consumer are at most three in each of the countries – the processor, the semi-wholesaler and the retailer. Cassava farmers and traders combined the role of the processor apparently because of the low development stage of mechanized processing technology. For both farmers and middlemen, transactions in cash were the predominant practice, followed by delayed payments. Advanced payment was non-existent except in Uganda. Marketing margins, though generally high, decline with good market access conditions. And the margins for granules were substantially lower than those of dried roots not only because of substantial differences in processing resource demand but also because of differences in marketing costs. This suggests that investments towards improving market access conditions, and in cost saving processing technologies for the production of granules are needed for the improvement of cassava marketing efficiency and development.

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