

Meat and fish consumption in Burkina Faso with special regard to gender

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Abstract

Apart from official statistics on average per caput meat and fish consumption on the national level in Burkina Faso, no details are known about meat or fish consumed in the household or as street food. Women and men are subject to different roles with regard to food consumption. The present study aims at assessing meat and fish consumption in urban and rural areas in Burkina Faso, by addressing the supply and demand side of animal protein consumption. A bias in meat consumption in favour of men is indicated. In the household men get a larger share than women and children. In the informal sector of street food, men represent the majority of consumers of all different types of street food. The expenditures for consumption in the informal sector are high in comparison with daily food budget for the whole family. The role of consumption outside of the household is gaining more importance. A rural-urban bias exists with urban population consuming larger quantity and more regularly meat and fish than rural population. The urban poor are more affected than the urban rich.

Keywords: consumption of animal protein, daily food budget, gender differences, household, street food

Introduction

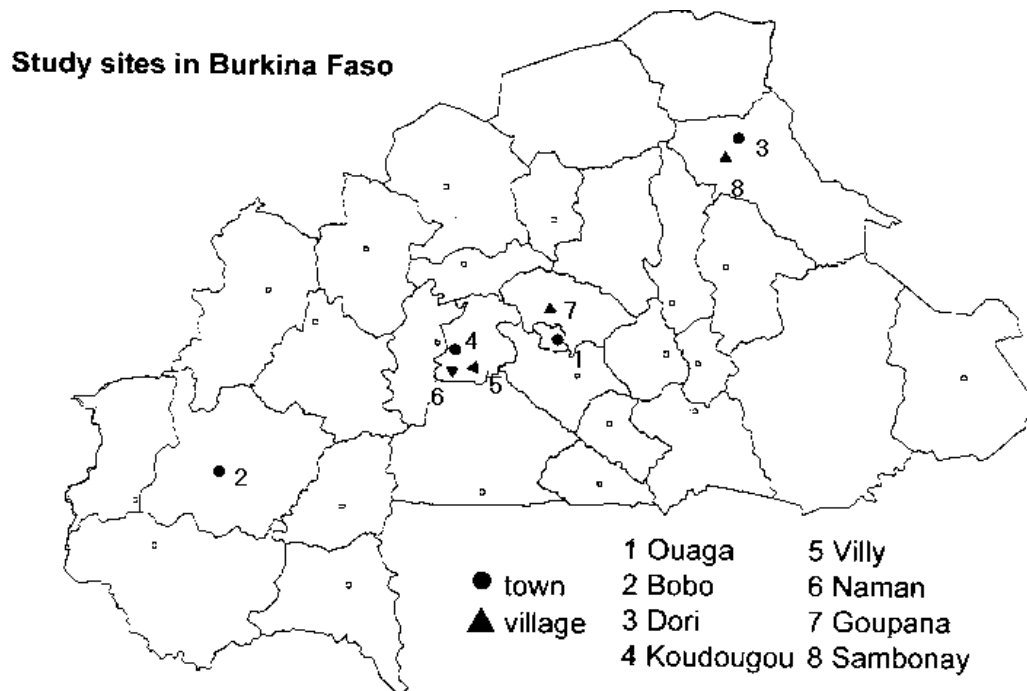
Meat and fish rank as high value food of animal origin and are important for a balanced human diet. In societies where nutrition is mainly based on cereals the completion of the daily diet by valuable animal products is important.

Apart from official statistics on per-caput meat and fish consumption in Burkina Faso on the national level, no details are known about meat consumed in the household or as street food. Like in other West-African societies men and women are subject to different roles with regard to food consumption. Food consumption in urban and rural areas might be different. The study aims at analysing meat consumption in selected towns and villages in Burkina Faso.

Material and methods

Urban centres considered were Ouagadougou (province of Kadiogo, centre south), Bobo-Dioulasso (province of Houet, south west), Dori (province of Séno, north, Sahel) and Koudougou (province of Boulkiemdé, centre south). Several quarters in each of the towns were chosen, two of them located in peri-urban areas (one in Ouagadougou and one in Bobo-Dioulasso). The rural areas were four villages in different geographical areas, Villy - Moukouan (province of Sanguié, centre south), Namaneguema (province of Boulkiemdé, centre south), Sambonay (province of Séno, north, Sahel) and Goupama (province of Kadiogo, centre south) (fig.1).

Figure 1: Study sites in Burkina Faso



Source: Ministère des Ressources Animales, 1998

For data analysis the locations were grouped as "urban", "peri-urban" and "rural" area. The town of Dori was considered as rural area.

The supply and the demand side of animal protein consumption were addressed.

The groups of the **supply** side comprised butchers and traders of the formal sector on markets, and traders of the informal sector, who sell street food with meat or fish. The butchers of the formal sector were interviewed with a semi-structured questionnaire. The interviews with traders in the informal sector were structured with closed questions. Some of these traders marked the sex of their daily clients on a list.

Table 1: Number of conducted interviews and weighed meat/fish tas

	Urban area				Total
	Ouaga	Bobo	Dori	Koudougou	
Population	1.000.000 ¹	300.000 ¹	11.000 ²	70.000 ¹	
Consumers (households)	147	79	52	31	309
Butchers (formal sector)	5	4	1	4	14
Traders (informal sector)	36	27	9	-	72
Lists (informal sector)	12	-	-	-	12
Weighed tas	100	68	30	10	229
	Rural area				
	Villy	Namanag.	Goupana	Sambonay	
Population	800 ³	1300 ⁴	1400 ⁵	no data	
Consumers (households)	24	22	25	15	86
Butchers (formal sector)	1	-	-	-	1
Weighed tas	21	-	-	-	21

¹Munzinger, 1997 ²INSD, 1995 ³MESSRS, 1997a ⁴MESSRS, 1997b ⁵Kambou, 1991

The **actual meat/fish prices** on formal markets were assessed by weighing the units of meat sold usually in little heaps ("tas"). The tas are offered usually to the clients in little heaps for fixed prices of 100 up to 500 FCFA. Also, the composition of the tas (muscle, bone, fat, intestines) was weighed for the meat tas. For further calculation the per-kg prices of the whole tas and of pure muscle were assessed. The per-kg prices of the tas of different prices were differentiated by an analysis of variance, and then grouped to three significantly different tas-types of 100, 300 and 500 FCFA, which comprised of the tas sold at 25-100, 200-300 and 400-500 FCFA. The prices for meat/fish on the markets were distinguished by the categories "urban", "peri-urban" and "rural".

For the **demand** side structured interviews with men and women as consumers of meat/fish in the household were conducted. In urban areas, mainly housewives were interviewed as purchasers of meat. Due to different patterns of inner-household labour distribution of the rural population, mainly masculine family heads were interviewed in the rural areas. Also, the structured interviews were different in urban and rural areas.

Data were analysed by means of descriptive statistics and analysis of variance (GLM) (SPSS 8.0.).

Results

The type of meat/fish has an highly significant influence on the per kg price of the tas ($p < 0.001$). The per-kg prices fluctuate between 1050 FCFA for beef and 1444 FCFA for goat. The per kg price of dried fish is not significantly different to the per kg prices of sheep or goat. Also, the type of tas shows a significant influence on the per-kg prices for the tas. The per-kg price increased from 1152 FCFA for tas of 100 FCFA to 1465 FCFA for tas of 500 FCFA. On urban and peri-urban markets no significant differences exist with regard to per kg price, but there are highly significant differences ($p < 0.001$) between urban respective peri-

urban and rural types of markets. The per-kg price amounts to 1347 FCFA on the urban market, to 1295 FCFA on the peri-urban market, and 1044 FCFA on the rural market (tab. 2).

Table 2: Prices (LSM \pm SE) of whole tas meat/fish on markets in Burkina Faso according to meat or fish type and tas type (FCFA/kg)

	Urban	Peri-urban	Rural	Total
Beef	922 \pm 32	1120 \pm 45	1223 \pm 67	1050 \pm 26 ^a
Sheep	1293 \pm 55	1558 \pm 67	968 \pm 48	1276 \pm 33 ^b
Goat	1727 \pm 48	-	1019 \pm 67	1444 \pm 40 ^c
Dried fish	1642 \pm 52	-	1067 \pm 64	1355 \pm 41 ^{bc}
100 FCFA	1181 \pm 31	1377 \pm 58	962 \pm 44	1152 \pm 24 ^a
300 FCFA	1387 \pm 32	1222 \pm 55	1126 \pm 45	1248 \pm 25 ^b
500 FCFA	1527 \pm 62	1278 \pm 107	-	1465 \pm 54 ^c
Total	1347 \pm 24 ^a	1295 \pm 38 ^a	1044 \pm 32 ^b	1247 \pm 17

Mean squares with the same letters are not different with $p < 0,05$.

The average household size is 7.8 persons, (7.8 persons for urban, 5.2 for peri-urban and 10.3 for rural households). In the peri-urban districts households with a size up to ten persons are the most frequent (68.3%), in urban districts households with eleven to twenty persons (47.9%), and in rural areas households with 21 to 30 and more persons (35.1%) are the most frequent (tab. 3).

Table 3: Household size, daily budget for food consumption, expenditures for meat and dried fish

	Urban	Peri-urban	Rural	Total
HH ¹ (2 - 10 persons) (%)	33.9	68.3	26.2	36.9
HH (11 - 20 persons) (%)	47.9	23.8	40.8	41.6
HH (21 - 30 persons) (%)	16.7	6.3	24.6	17.7
HH (more than 30 persons) (%)	1.6	1.6	8.5	3.9
HH – size (number of persons)	7.8	5.2	10.3	7.8
Regular payment of budget for food consumption in HH (%)	89.7	92.1	33.3	71.0
Amount of food budget (FCFA/day) (LSM)	681 \pm 30 ^a (n=193)	454 \pm 54 ^b (n=60)	415 \pm 48 ^b (n=75)	517 \pm 26 (n=328)
Expenditures for meat (FCFA/day) (LSM)	247 \pm 18 ^a (n=174)	145 \pm 38 ^b (n=39)	128 \pm 22 ^b (n=121)	173 \pm 16 (n=334)
Expenditures for dried fish (FCFA/day) (LSM)	117 \pm 15 ^a (n=122)	69 \pm 27 ^{ab} (n=39)	45 \pm 22 ^b (n=59)	77 \pm 13 (n=220)

Mean squares with the same letters are not different with $p < 0,05$.

¹HH = household

The "daily budget" for food consumption is the amount of money regularly attributed to the person responsible for the daily food purchase. In most cases, this is the housewife. It the

contains money for food like meat/fish, sauce ingredients, spices, if need be fire wood, soap Expenditures for basic food like millet, rice, maize are not included. The regularity of payment of daily budget differed significantly ($p < 0.001$) between the urban respective peri-urban and the rural areas. In urban or peri-urban households the daily budget is mainly given regularly (89.7% and 92.1%), in rural areas only 33.3% of the households give out a regular daily budget. The amount of daily budget differs significantly ($p < 0.001$) between urban and peri-urban respective rural households (tab. 3).

The average daily expense for meat only is 173 FCFA, which corresponds to 33.4% of the average daily budget of 517 FCFA for food consumption. The percentage of expenditures for meat is significantly different between urban and rural respective peri-urban areas ($p < 0.001$ respective $p < 0.05$). In urban areas, 681 FCFA are spent for food consumption, out of which 36.3% are spent for meat. In peri-urban households 454 FCFA are spent every day for food, with meat representing 31.9%, whereas in rural areas the daily food budget amounts to 415 FCFA with 30.8% for meat expenditures. (tab. 3).

The average daily expense for dried fish is about 77 FCFA. The expense is significantly different between urban and rural areas, it is not different between urban and peri-urban area and peri-urban and rural area. The daily expenditures rank from 117 FCFA in urban households about 69 FCFA in peri-urban households to 45 FCFA expenditures for dried fish consumption in rural areas (tab. 3).

The average quantity of meat consumed per caput per year amounts to 9.98 kg. The quantities of meat vary from 12.87 kg in urban households to 10.75 kg in peri-urban households, and 6.30 kg are consumed every year per person in rural households. The average per caput consumption of dried fish is about 4.06 kg yearly (4.37 kg urban, 5.23 kg peri-urban, 2.57 kg rural consumption) (tab. 4).

Table 4: Quantities of meat and dried fish consumed per person in households (LSM) (kg/year)¹

	Urban	Peri-urban	Rural	Total
Quantity of meat (kg/year)	12.87 (n=172)	10.75 (n=40)	6.30 (n=116)	9.98 (n=328)
Quantity of fish (kg/year)	4.37 (n=121)	5.23 (n=39)	2.57 (n=58)	4.06 (n=218)

¹ The calculation is based on the average daily expenditure for meat and fish purchase in households with regard to the prices per kg in urban, peri-urban and rural areas, to the size of tas and the number of persons in the household.

The frequency of meat/fish consumption in households differs significantly between the urban respective peri-urban and rural areas ($p < 0.001$). No significant differences were found between periurban and rural areas. In urban respective peri-urban households meat/fish is consumed every day by 86.1% respective 76.2% of the households, whereas in rural households only 38.2% consume meat/fish every day. The lowest frequencies of meat/fish consumption (twice per week or less) were found mainly in rural households (38,9%). The daily consumption of meat/fish predominates over all (67.9%) (tab. 5).

Table 5: Frequency of meat and fish consumption in households

Consumption frequency (%)	Urban (n=194)	Peri-urban (n=63)	Rural (n=136)	Total (n=393)
Daily	86.1	76.2	38.2	67.9
3 - 6 times weekly	9.3	17.5	22.8	15.3
twice weekly - once every 2 weeks	3.1	3.2	23.5	10.2
Less than every 2 weeks	1.5	3.2	15.4	6.6
Total	100	100	100	100

Beef, dried fish, and sheep are most frequently consumed in urban areas. In the peri-urban households dried fish ranks at the first position, followed by beef and sheep. Dried fish, sheep, and goat dominate the consumption in rural areas (tab. 6).

Table 6: Meat/fish types consumed most often in households

	Urban			Peri-urban			Rural		
	1. (n=306)	2. Rank (n=163)	3. (n=78)	1. (n=62)	2. Rank (n=51)	3. (n=16)	1. (n=130)	2. Rank (n=101)	3. (n=48)
Beef (%)	41.8	25.2	10.3	24.2	41.2	31.3	13.1	20.8	2.1
Sheep (%)	19.6	25.8	11.5	11.3	7.8	6.3	30.8	32.7	31.3
Goat (%)	4.1	2.5	3.8	0.0	2.0	0.0	20.8	16.8	20.8
Poultry (%)	0.5	5.5	10.3	0.0	2.0	6.3	2.3	5.9	6.3
Pig (%)	0.0	3.1	4.1	4.8	7.8	12.5	0.0	2.0	6.3
Other meat (%)	0.5	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Dried fish (%)	30.4	28.2	32.1	53.2	35.3	37.5	30.0	12.9	16.7
Fresh fish (%)	3.1	9.8	25.6	6.5	3.9	0.0	3.1	8.9	16.7

For the preparation of a typical family meal for lunch respective dinner in the household the meat is cut in little slices. The distribution of these meat slices during a family meal is 3.3 slices for men, 2.2 slices for women and about 1.9 slices for children. No quantity of the slices can be given here.

91.4% of the traders in the informal sector said that predominantly masculine clients buy their meat/fish dishes. Only 4.3% of the traders had more feminine than masculine clients. The average number of clients per day was 57.5 (± 45.2 , n=61). These results are confirmed by the lists filled in by several traders. The average number of clients of 72.5 persons per day (± 81.6 , n=12) is higher than the estimated number by the traders themselves. There were more masculine clients (47.0 ± 58.2) than feminine clients (25.5 ± 26.8) in the average. Meat of beef, sheep, and pig was sold by 27% of the traders, respectively, poultry by 14% and fish by 4%. Approximately 50% of the traders use the whole carcass, the rest sells only muscle or muscle and intestines. More than the half of the traders (54%) prepare the meat/fish as barbecue, 29% as meat from the oven, the rest prepares it as soup or in another way. 57.1% of the traders sold one meal, 42.9% of the traders two or more types of meals. The average price per portion was 409 FCFA for the first ranked meal, for the second ranked meal it was 506 FCFA.

Discussion

The average size of household in urban and peri-urban areas is 6.5 persons and corresponds to the size of 6.1 persons per household in Ouagadougou and Bobo-Dioulasso (INSD, 1996). The predominance of households of 10 to 19 persons in rural areas (31.3%; MARA, 1998) was confirmed with the present study (40.8% for households with 11 to 20 persons). Large households with more than 20 persons in rural areas are more frequent (33.1%) in the present study than in burkinian surveys (7.0%; MARA, 1998).

The average expenditures for daily budget amounts to 517 FCFA. A burkinian survey (INSD, 1996) showed daily expenditures of 667 FCFA for food; considering only the monetary expenses the daily budget was 403 FCFA. In comparison with 780 FCFA that women got in Bobo-Dioulasso as daily food budget in the mid eighties (Hoffmann, 1990) the nominal daily budget decreased by 12.7% in Bobo-Dioulasso. The nominal expenditure for meat decreased from 46% (Hoffmann, 1990) to 36.3% of the total daily budget. Due to the inflation following the devaluation, this implies a real reduction in the supply of the population with meat.

The predominance of daily consumption of meat/fish confirms the findings of Hoffmann (1990; 6.8 times weekly). The frequencies differ between towns and villages, only 38% of rural households are consuming meat/fish every day, about 40% only twice per week or more rarely. Urbanisation changes the habitudes of food consumption; the urban meat/fish consumption is higher because of higher incomes, of better commercialisation and of a continuous supply (Oltersdorf, 1996).

The order of consumption frequencies in urban areas (beef > dried fish > sheep) is the same as found by Hoffmann (1990). The peri-urban households show similar consumption frequencies but dried fish is more often consumed than beef. In rural areas goat consumption is more important, it ranks at the third position after sheep and dried fish. Goat meat is more important for the daily consumption in villages than in towns. However, national statistics of controlled slaughter show a higher production of goat meat (5.212 t) than mutton (2.167 t) in 1997 (MRA, 1998). It can be assumed that goat meat is mixed in tas of mutton on formal meat markets without declaration for the clients. The tail is left at the back for distinction between sheep and goat when selling the whole carcass or the hind quarter (Hoffmann, 1992).

Hoffmann (1990) reported the highest consumer preference for poultry, followed by mutton, beef and fresh fish. However, the frequency of actual meat purchase and consumption was beef, followed by (dried) fish, mutton and pork. The difference between the actual purchase and consumption of meat and the stated preference for meat types is explained by the constant lack of money. While dried fish and beef are not at the top of the rank they are often purchased because of their comparatively low price. Dried fish costs between 1000 and 1.400 FCFA per kg, but due to its concentrated flavour a small quantity is sufficient to cook a tasty sauce.

The estimated average per caput meat consumption of 9.98 kg every year is low compared to other studies. Hoffmann (1990) estimated 24.3 kg of meat consumed in households per caput per year in the town of Bobo-Dioulasso. Calculations according to FAO food balance sheets about the supplied quantities of meat per person per year show an average consumption of 11.5 kg (average of 1989 – 1997; FAO, 1999). A decline in the expenditures for food and in the quantity of meat consumed is due to the devaluation of the FCFA in January 1994. For

example meat consumption in Senegal decreased by 50%, in Côte d'Ivoire by 17% after the devaluation. The decline in meat consumption was partly compensated by an increase in dried fish consumption (comp. CILSS, 1998). However, the quantity of dried fish consumed by the members of a household is often negligible because the dried fish is ground and mixed in small quantities in the sauce due to its tasty flavour.

Over all, the diversity of the diet has been reduced. The general price increase led to a decline of food stuff of high nutritive density (e.g. meat/fish). The devaluation has widened the social gap, since the urban poor are more affected than the urban rich (CILSS, 1998).

The above mentioned meat/fish consumption comprises only the quantities sold on formal markets and consumed in households, it does neither contain the quantities consumed for ceremonies (Ramadan, Tabaski, Christmas, Easter ...) nor those consumed in the informal sector. Preference of meat/fish consumption for feasts is poultry, sheep, beef, pig, and fish (Hoffmann, 1990), however, no quantity can be given. The informal sector is particularly important in urban areas. Estimates of MARA (1996) show that in so-called "buvettes" (French: pub), "bars", "cabarets", and at street corners about 27 t of prepared meat is sold in Ouagadougou, 5 tons in Bobo-Dioulasso. In comparison with about 20 tons of meat slaughtered officially in Ouaga and about 12 tons in Bobo these quantities are very high and show the predominance of the informal meat market in meat commercialisation (MRA, 1998).

Most meat sold in the informal sector is derived from unofficial and uncontrolled slaughters. With regard to the most often sold meat types, our results tally with a survey of MARA (1996). MARA (1996), however, found out a smaller amount of meat prepared as barbecue (44%).

The predominance of male clients in the informal sector of street food confirms the results of other studies (Kouadio, 1994). Especially men increase the consumption of meat/fish outside of the household, whereas women and children rely mainly on the meat purchased on formal markets and prepared within the household. Another reason for the increasing street food consumption of men could be the devaluation of FCFA and the reduction in the diversity of family diets. Hence men, who can go out of the house more frequently and easily than women or children search for more food in the informal sector in order to maintain the diversity of their daily diet (CILSS, 1998).

Concluding remarks

Since the devaluation of the FCFA in Burkina Faso in 1994, the meat/fish consumption in households declines as the total daily expenditures for food. Although the consumption frequency for meat/fish has not much changed, the daily per-caput consumption declined. Former existing differences concerning meat consumption habits of the burkinian population related to environment or sex have widened after the currency devaluation. However, animal products like meat/fish play still an important role in the daily food habits of the population.

Meat consumption habits differ largely between rural and urban or peri-urban environments. The rural population is discriminated with regard to the consumption frequency of meat/fish and the amount of meat/fish.

Differences in meat/fish supply between men and women exist and are probably widening, caused by an increasing importance of the informal sector in urban areas where clients are mainly masculine. Hence, women are hit by the devaluation twofold: by an absolute decline of meat consumed in the household, and the reduction of potential household budget after men's street-food consumption. Hence, women's supply of important micro nutrients of animal food is low; but the need for energy and nutrients is high because of varied and labour-intensive tasks like motherhood, management of the household, trading or agricultural and other activities.

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