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Abstract

Since the beginning of 2000s, in order to let poor people accede to meat consumption, several African and Caribbean countries have opened their domestic chicken market to foreign imports, by reducing import tariffs. Thus imported frozen pieces of chicken from the European Union or America compete with local chicken meat, causing the collapse of many poultry husbandry and the loss of many jobs in the local chicken food chain. In order to highlight the determinants of urban consumer's choice relative to chicken types, and assess the opportunity for local chicken to restore its market share, investigations have been done in 2005 in Yaoundé (Cameroon) and in 2006 in Port-au-Prince (Haiti) applied to 180 urban households in each country. While imported frozen pieces of chicken have almost entirely substituted for the local chicken which has already quite disappeared in Port-au-Prince, Yaoundé consumers still prefer the local flesh chicken to the imported ones, at least for particular uses.

Keywords: chicken, urban consumption, developing countries, globalization, Cameroon, Haiti

JEL classifications: Q18 (Agricultural Policy; Food Policy), Q17 (Agriculture in International Trade), D12 (Consumer Economics: Empirical Analysis)

Caractéristiques et déterminants de la consommation urbaine de poulet au Cameroun et en Haïti : des contextes similaires mais des perspectives distinctes

Résumé

Depuis le début des années 2000, plusieurs pays d’Afrique et des Caraïbes ont ouvert leur marché domestique aux importations de poulet, dans le but d’améliorer l’accès à la viande des populations pauvres. La réduction des droits de douane appliqués à ces produits s’est traduite par des importations massives de découpes de poulet congelées, en provenance d’Europe et d’Amérique, qui viennent concurrencer le marché local, entraînant la fermeture de nombreux élevages et la perte d’emplois dans la chaîne de production et de distribution des produits avicoles. Nous cherchons dans cet article à mettre en évidence les déterminants du choix des consommateurs urbains entre les différents types de poulets disponibles sur le marché, et à évaluer la possibilité pour le poulet local de retrouver ses parts de marché antérieures. Des enquêtes ont été menées en 2005 à Yaoundé (Cameroun) puis en 2006 à Port au Prince (Haïti), auprès de 180 ménages urbains dans chaque pays. Elles montrent que si les découpes importées de poulet congelé se sont presque entièrement substituées au poulet local qui a presque disparu à Port-au-Prince, les consommateurs de Yaoundé continuent de préférer le poulet de chair local au poulet importé, au moins pour certains usages.

Mots-clefs : poulet, consommation urbaine, pays en développement, mondialisation, Cameroun, Haïti

Classifications JEL : Q18 (Agricultural Policy; Food Policy), Q17 (Agriculture in International Trade), D12 (Consumer Economics: Empirical Analysis)

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1. Introduction

During spring 2008, several developing countries have known riots related to food price increase on international markets –rice and other cereals, but also sugar and meat (FAO, 2008a, 2008b, 2008c). Food riots left forty dead in February 2008 in Cameroon (Yaoundé, Douala) and killed at least five people in Haïti (Port au Prince) in April 2008. Violent urban protests and demonstrations occurred in many countries in Africa, Asia and Latin America. That crisis reminds that food security is not achieved everywhere, and reopens the debate about food dependence of developing countries on imports, which raises problems in case of world price surge. That issue is not new. Cheyns and Bricas (2003) show that, to insure cities food security, the urbanization speeding-up in poor countries is accompanied by the growth of food imports from international markets, which actually competes with local production, even if that trend has repercussions on eating patterns and gives the opportunity for agricultural areas to capture new urban food markets.

The competition between local production and imports may classically be analysed by implementing partial equilibrium models. Under the assumption of product homogeneity, prices competitiveness of local product *versus* imported one constitutes the essential determinant of market shares allocation between origins. In the case where there is a political objective to modify the resulting allocation, for example if a particular country wants to limit imports share in total consumption, such a model enables to assess the effects of border protection on consumers, producers and State budget of importing country.

But considering product homogeneity is problematic, because quality attributes may precisely change with the product origin. Survey on the field shows that, like in developed countries, consumers of developing countries have multiple expectations in terms of eating patterns. For example, Cheyns and Bricas (2003) show consumers from Ouagadougou take interest in several sanitary quality aspects and are sensitive to standards relative to cereal, meat or soubala¹ production. Sanogo and Masters (2002) assess the willingness to pay of young mothers for a credible certification of nutritional quality of child food complements. Lançon

¹ Soubala is a spice from West Africa.

and David Benz (2007) show that West African consumers are willing to pay more for the imported rice as compared to the local one, because it is safer and better packed. Dury et al. (2007) indicate that, despite their poorness, Malian consumers are willing to pay a higher price for Guinean fonio² because it is considered higher quality (safer, brighter) than the local one.

Those case studies, among others, show that when the evolution of eating habits plays in favour of imported products, because of differentiated quality attributes, a sole border policy is not adapted to protect domestic production from foreign competition. The definition of a political and/or an industrial strategy to improve domestic product quality standard requires first to know consumer's expectations in terms of quality, and to take into account the product differentiation.

Since the beginning of 2000s, in order to let poor people accede to meat consumption, several African and Caribbean countries have opened their domestic chicken market to foreign imports, by reducing import tariffs. Thus imported frozen pieces of chicken from the European Union or America compete with local chicken meat, causing the collapse of many poultry husbandry and the loss of many jobs in the local chicken food chain. The aim of this paper is to analyze the competition between domestic and imported poultry meat in developing countries from the demand point of view. We choose to study the cases of Yaoundé (Cameroon) and Port-au-Prince (Haiti). Cameroon and Haiti are both developing countries confronted with recent high increase of chicken imports.

Before 1995, Cameroon ad valorem tariff on chicken imports was 20 %³. Since the 1990's, in order to open the market and let poor people accede to meat consumption, Cameroon, like other African countries, has classified poultry as essentials. Hence, from 1995 and until 2005, corresponding import tariff has been reduced to 5%, other taxes being unchanged (Direction générale des douanes du Cameroun, from Ccima, 2005). During the same period, a large liberalization of trade exchanges has occurred in Haiti, in the frame of the implementation of Structural Adjustment Programs. In 1995, the last tariffs reform instituted a simplified system with only six levels of tariffs: 0, 3, 5, 10, 15 and 57.8 % (the last being only applied for gasoline). As a result, import tariffs on agricultural commodities, like poultry meat, decreased

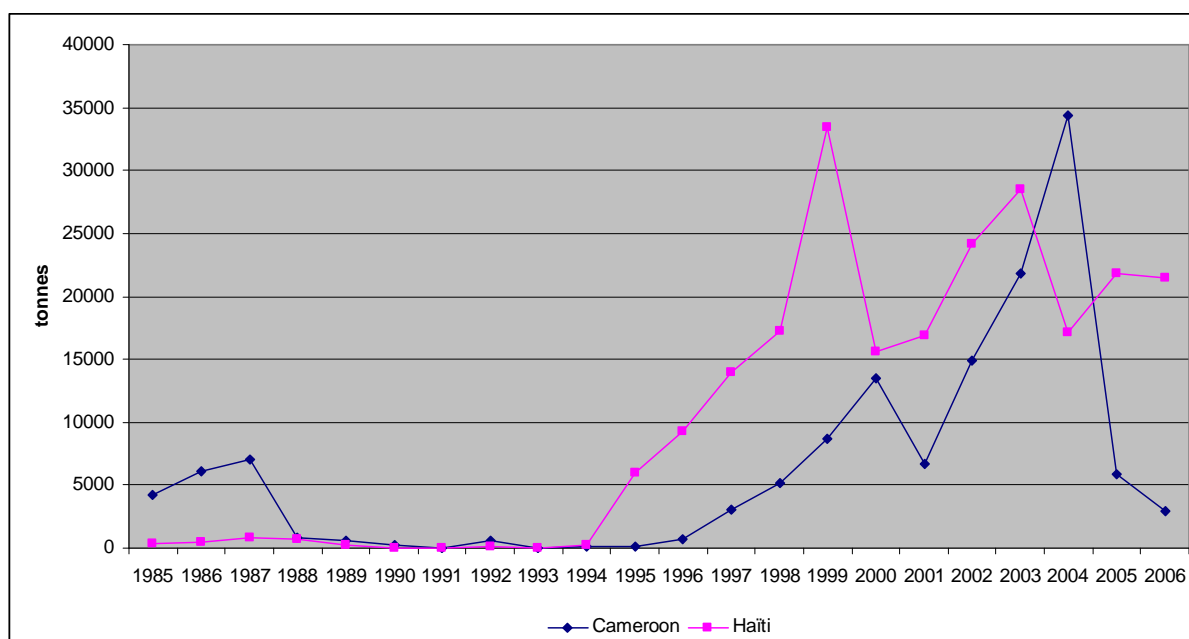
² Fonio is a cereal.

³ which value added and phytosanitary taxes add to (17.5 % and 3 % respectively)

from 40-50 % to 15 % or less. Note that the actual Haitian tariff on poultry meat imports (15%) is lower than the WTO bound tariff (20%) (WTO, 2003; WTO, 2006).

Available FAOSTAT data from 1985 to 2006 about poultry meat Haitian and Cameroonian imports show that in both countries the liberalization of chicken import tariff coincides with a large increase of corresponding imported quantities (Figure 1).

Figure 1: Cameroon and Haiti imports of poultry meat, 1985-2006



Source: FAOSTAT

Concerning poultry meat production, because of a lack of consistent national statistics, FAOSTAT only provide estimated and regular figures for Cameroon and Haiti. Those data are in contradiction with NGO's and producer's associations' statements which denounce the competition between domestic and imported chicken (mainly from the European Union or America) and the resulting collapse of many poultry husbandry and the loss of jobs⁴ in the local chicken food chain⁵. They notably recommend going back to the previous situation by reinstating high level of border tariff protection against imports of chicken pieces. This

⁴ The figure of 110,000 rural jobs lost in poultry Cameroon industry, due to import surges, has been given by ACDIC (2005) and has been also used by FAO (2006).

⁵ See Association civile de défense des intérêts des consommateurs (ACDIC), 2005; Chambre de commerce, d'industrie, des mines et de l'artisanat (Ccima), 2005; FAO, 2006 for Cameroon ; Christian Aid, 2006 for Haiti.

position is reinforced by the frequent use of export subsidies on American or European chicken supply, which are considered as unfair practices beside domestic chicken production. On the other hand, during the same period, chicken consumption has increased in Haitian and Cameroon populations, leading to move near the recommended level by the World Health Organization in terms of animal protein intakes (Teleu-Ngandeu and Ngatchou, 2006).

In both Cameroon and Haiti, a rapid observation of food markets shows that there are actually three types of chicken supplied to urban consumers:

- Rustic chicken, which is called “Villageois” in Cameroon and “Creole” in Haiti, is produced at family home, in only precarious shelter. In Cameroon, rustic chicken is most often bred in rural areas, and it is sold alive directly to the consumer or via peri-urban markets after being collected at the village. In Haiti, one can find Creole chicken in urban market places. That chicken is especially used for religious (Cameroon) or voodoo (Haiti) ceremonies.
- Local flesh chicken, sometimes called “White chicken” in Haiti, is produced in semi-industrialized farms. Production chain, feeding, sanitary and veterinary monitoring are rationalized, and animals live in permanent structures. It is sold alive at traditional urban markets. That type of chicken has been, for few years, actually very hard to find in Haiti, whereas it still exists in Cameroon.

Rustic and local flesh chickens are essentially sold whole and alive. Consumers have to slaughter and clean it out themselves or pay a supplement for that. In some rare supermarkets in Yaoundé, one can find whole local rationalized flesh chicken sold ready to cook.

- Imported chickens are usually sold frozen and by pieces at traditional urban markets, supermarkets or fish shop (which have freezer). Sometimes one can find entire frozen chicken also.

Taking the cases of Cameroon and Haiti, this paper aims at assessing the place local flesh chicken still occupies in urban chicken consumption in countries which have known a massive development of poultry meat imports since the mid-90s. We want to highlight the determinants of urban consumer’s choice relative to chicken types, and evaluate the opportunity for domestic chicken to restore its previous market share in a competitive context. We will try to answer the following questions: have the recent and massive chicken imports modified local food patterns? Are the effects similar whatever the developing country? Would

it be possible, for local chicken industry, to recapture lost market shares, considering demand aspects?

Cameroon and Haiti differ by their geographical situation and level of development⁶. Cameroon is an African developing country, member of African-Caribbean-Pacific group. Haiti is located in Caribbean - American area and is classified as one of the last developed countries in the world. Table 1 gives some economic reference data for Cameroon and Haiti. Those differences are interesting because they may impact on consumers' adaptation to the development of frozen chicken cuts imports newly imported products. In particular, we want to assess if substitutions between local and imported commodities implemented by urban consumers differ from Haiti to Cameroon, and why.

Table 1: Economic reference data about Cameroon and Haiti

	Cameroon	Haiti
Average population, (2003-2005)	17.408 millions	9.150 millions
Urban population share in 2007	56 %	40 %
Average annual growth rate of urban population, (1990–2007)	+ 4.6 %	+3.8 %
GNI per capita (2007)	862 \$	560 \$
Population share under the poverty line (1.25\$ per day), (2007)	33 %	55 %
Number of persons in a condition of undernourishment, (2003-2005)	4.0 millions	5.3 millions
Population share in a condition of undernourishment, (2003-2005)	23 %	58 %
Intensity of food deprivation ⁽¹⁾	230 kcal	430 kcal ⁽²⁾
Capital of the country and population	Yaoundé 1.2 million	Port-au-Prince 3.8 million

⁽¹⁾ “The intensity of food deprivation indicates how much food-deprived people falls short of minimum food needs in terms of dietary energy. It is measured as the difference between the minimum dietary energy and the average dietary energy intake of the undernourished population (food-deprived). The intensity of food deprivation is low when it is less than 200 kilocalories per person per day and high when it is higher than 300 kilocalories per person per day. The greater the food deficit, the greater the susceptibility for health risks related to under nutrition” (FAO calculations).

⁶ Besides, both countries have not been concerned by the avian pest during the period of study.

⁽²⁾ That is the highest score in the world.

Sources: FAO website; CNUCED, 2008; World Bank website; UNICEF website

In order to examine the determinants of food consumption, standard models of household consumption decisions, proposed by Samuelson (1956), or the implementation of Almost Ideal Demand System (AIDS) models are usually used because they are perfectly suited for making projections in terms of changes in households consumption expenditures. The standard household and AIDS models have been applied partially to Sub-Saharan countries by Strauss (1982), Tsegai and Kormawa (2002), Kone (2002), Simister and Piesse (2002) and Ruel et al. (2005). But they require complete data, dealing with price, consumption and supply quantities, and household budget, collected annually on the basis of consumption budget investigations. If such approaches are possible in developed countries, where consumption budget surveys are done every year, one can state that, except in South Africa (Simister and Piesse, 2002) and maybe other rare countries, there is a wide scarcity of reliable information about food consumption in Africa and the Caribbean, because of a total lack of statistical opinion polls. Those that exist are often outdated: for example the last corresponding data have been collected in 1999 in Haiti (IHSI, 2008) and in 2001 in Cameroon (NIS, 2008), and results have been available only four to five years later, rendering ineffective decision-making and projections obtained in most developing countries.

Recent studies in developing countries have implemented small and *ad hoc* surveys, taking into account the dynamic development of demand such as recent evolution of eating habits. For example Dury et al. (2002) or East et al. (2005) use temporal data collected on households and market and restaurant customers to understand factors influencing urban consumption. The main study about meat consumption was done by East et al. (2005) to understand the determinants of urban bush meat consumption in Rio Muni (Equatorial Guinea). East et al. (2005) use interviews with 100 consumers in households and 37 restaurants customers. They show that Guinean consumers have a strong preference for fresh meat and fish over frozen products, but for price considerations they most often eat frozen foods. The degree to which meat consumers are able to satisfy their preferences is significantly related to their income. Frozen produce is considered as an inferior good, with negative income elasticity, while fresh produce, including bush meat, is a normal good.

Our study follows the same logic as that of East et al. (2005). We consider urban chicken consumption in a context of crisis in poultry food chain linked with the development of chicken imports. The main innovation in our research is to carry out a comparison of two

developing countries located in different mainlands: Cameroon in Africa and Haiti in the Caribbean. Both are developing countries which apparently face the same situation: imported chicken compete with declining local chicken production. We aim to analyze if this common evolution leads to similar results in terms of urban consumer's habits in the two countries, in order to predict the likely future trends in chicken consumption and suggest potential differentiated policy responses for each developing country.

Two similar investigations of eight weeks have been done successively in Yaoundé (Cameroon) and Port-au-Prince (Haiti). Representative sample of urban households have been polled about their chicken consumption: preferences, habits and willingness to pay for chicken meat. The second section of the paper presents the survey. The third section presents the main results dealing with determining aspects of the recent evolution of chicken consumption. The last section concludes, focusing on the perspectives, for local chicken, to restore their previous urban consumption share, respectively in Cameroon and in Haiti.

2. Survey description

In order to identify the relevant determinants of chicken consumption for consumers, a specific survey was conducted during May-July 2005 in Yaoundé, and during June-August 2006 in Port-au-Prince. After a first examination of urban chicken meat trade (types of chicken and associated markets), a formal questionnaire related to the evolution of urban consumption was implemented to a sample of 180 urban households in each country. The Port-au-Prince survey has been lightly modified compared to the Yaoundé's one in order to take into account failing that had been identified during the work in Cameroon.

To ensure a representative sample, the quota method has been applied (like Dury et al., 2002). We made sure that in our sample the allocation of several control variables (or criteria) is similar to the distribution in the global population. Control criteria have no particular relationship with chicken consumption; their use aims at minimizing the risk of ignoring some parts of populations in our sample. For household pool, control variables were household size and types of housing (equipment and infrastructures available). Available statistics about their distribution in the global population have been taken from IHSI (2003), ECAM (2000) and INS (1994). In the same logic, to minimize distortion in collected data, the localization of each inquiry had been decided beforehand on a map, in correspondence with the global

distribution of the population with respect to demographic weight of the sites of investigations and/or places of consumption.

Examples of using control variables to implement the quota method are presented in appendix 1⁷. The survey questionnaire is available from the authors upon request.

3. Survey results

Level of substitutability between local, rustic and imported chicken from consumers' point of view may be assessed through households survey answers related to four issues : i) the difference between declared preferences and effective chicken consumption and uses (section 3.1.), ii) the criteria of choosing one type of chicken over another (section 3.2.), iii) the recent evolution of chicken consumption since the arrival of frozen chicken cuts and reasons of change (section 3.3.), iv) the willingness to pay for each type of chicken (section 3.4.).

3.1. Preferences versus effective consumption

Figure 2 presents preferences of consumers relative to types of chicken, out of price matter, and the types of chicken actually bought by households from Port-au-Prince and Yaoundé.

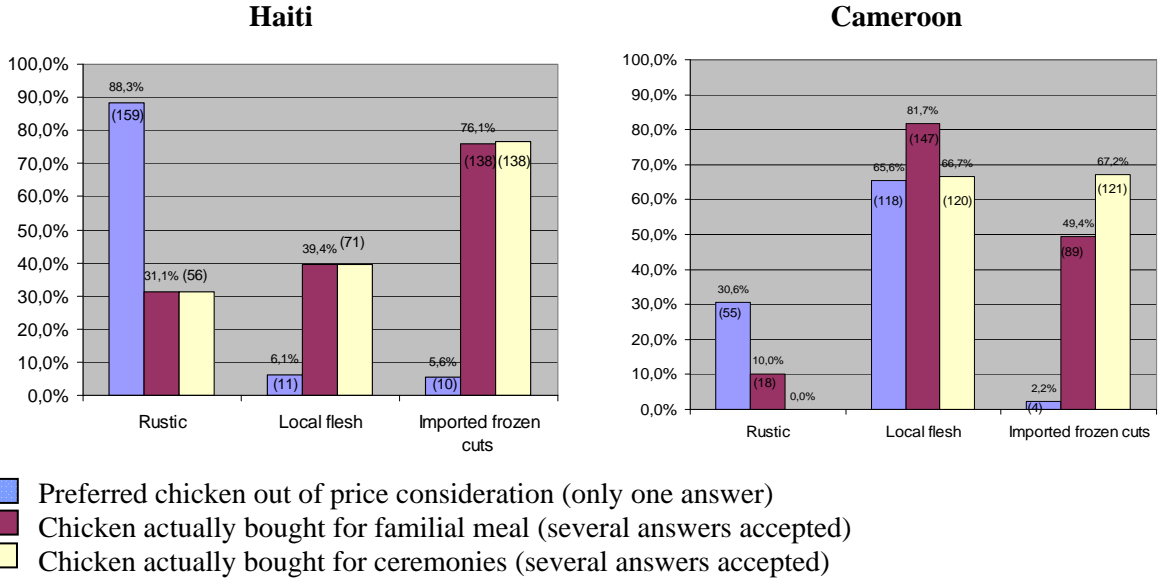
Out of price matter, 88% of households in Port-au-Prince declare they prefer the rustic (Creole) to others chicken type, whereas there is no significant gap between preference for local flesh chicken or cut frozen imported chicken: each is preferred by only 6% of households. The answers are very different in Yaoundé where only 31% of households say they prefer rustic chicken while local flesh chicken is actually preferred by a large majority of consumers (66%) and only 2% of households do prefer imported frozen cuts of chicken.

Figure 2 shows the large difference between declared preferences, out of price matter, and the reality of household's consumption. While in both countries, imported frozen cuts are, out of price matter, the less appreciated type of chicken, 49% of Cameroon households say they usually consume them for familial meals and they are 67% for ceremonies meals. Haitian households do not make a difference between familial or ceremonial chicken consumption, and 76 % of households declare they usually consume imported frozen cuts. 82% of households in Yaoundé and 40 % in Port-au-Prince usually consume local flesh chicken.

⁷ Note that Haitian survey has been made in a very difficult context of urban violence and high level of insecurity: the respects of statistic quotas of polled people actually constituted a real challenge.

Those results are, in each case, bigger than respective scores of local flesh chicken preference. Whereas rustic is the preferred chicken in Haiti, it is only consumed by 31 % of households. Only 10% of household usually consume rustic chicken in Cameroon, and especially for familial meals, not for ceremonies, what is less than the third of the preference outcome. All those results suggest there has actually been a substitution between types of chicken, but not exactly the same way in Yaoundé and Port-au-Prince.

Figure 2: Preferences *versus* actually bought chicken, (% of households, 180 households)



Source: Household survey. In brackets: total number of observations.

[Familial meals correspond to usual meals reserved to household’s members. Ceremonies design traditional or religious festive meals which brings together several households.]

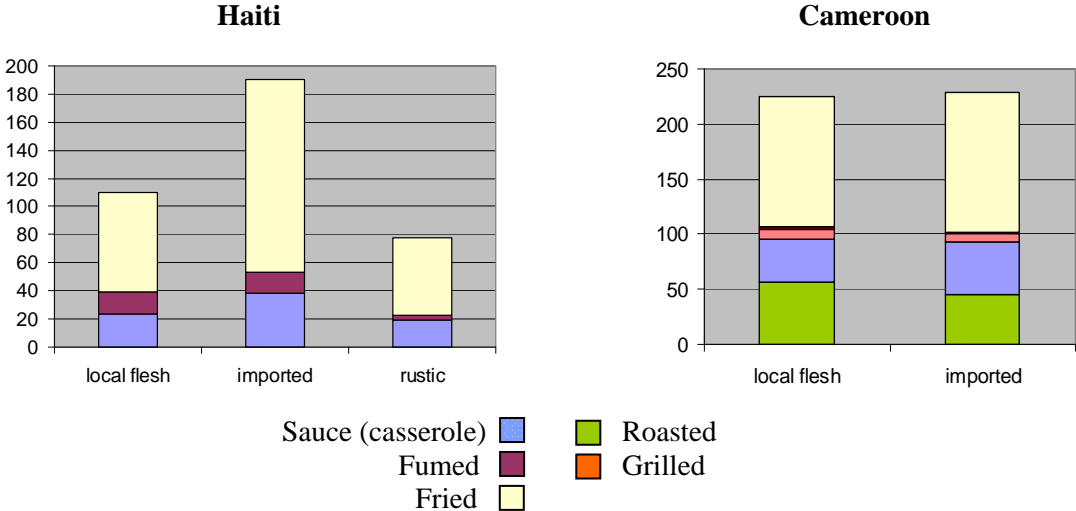
In Port-au-Prince, imported frozen cuts and local flesh chicken do constitute a second best choice when rustic chicken is not available. Remaining rustic chicken consumption seems not to be possible to be replaced. Actually, several households have explained that there are particular voodoo practices that especially require rustic chicken. But it is clear that for usual consumption, price and availability of chicken constitute main choice determinants.

In Yaoundé there is a marked difference between familial and ceremonies uses of chicken. While the three types of chicken are consumed for familial meals (with an advantage for local flesh chicken), consumption of imported frozen cuts increases for ceremonies meals to the detriment of both rustic and local flesh chicken: when a large quantity of chicken has to be

cooked (like for ceremonies meals), imported frozen cuts are advantageously chosen. On the contrary, for household’s meals, domestic chicken (rustic or flesh) continues to be used. Cameroon consumers clearly prefer domestic chicken to imported one, but there is no particular preference for the rustic one. In all cases, it seems that imported frozen cuts constitute an imperfect (but largely used) substitute to local chicken, even if local flesh chicken continues to be consumed and appreciated by consumers. For households who prefer rustic chicken, local flesh chicken seems to constitute an acceptable substitute.

Figure 3 presents usual modes of cooking the chicken adopted for ceremonies meals in both countries, according to the type of chicken used. Note that Cameroon households’ answers do not mention the rustic chicken because the question did only concern ceremonies meals, and no Cameroon household did declare using rustic chicken for ceremonies meals.

Figure 3: Most usual modes of cooking local flesh, rustic and imported chicken, in Haiti and Cameroon (number of answers)



Source: Household survey. Several answers accepted

In both countries, fried chicken is the most usual mode of cooking the chicken. Port-au-Prince households also usually cook chicken sauces (casserole) and fumed chicken. Yaoundé households cook sauce and fumed chicken, but grilled and roasted chicken too.

While in Cameroon, we do not observe any significant difference between cooking domestic *versus* imported chicken, cooking the chicken in Haiti is related to the type of chicken which is used for. In particular, imported frozen chicken cuts are widely fried. Cuts are particularly

adapted to that particular mode of cooking because they are easier to fry than a whole chicken. Frozen imported cuts are also more often used for cooking a sauce than other type of chicken. One explanation is that making a chicken sauce does not require a whole chicken: only a cut of chicken leads to give the taste of chicken to everybody. This mode of cooking the chicken is more developed in Haiti than in Cameroon.

Furthermore several households polled in Cameroon mentioned a traditional chicken sharing out, coming from forest people, which certainly participates to maintain the entire local flesh chicken on tables at family meals in Cameroon. Gizzard, heart, wishbone and foots are given to the householder: it would be particularly very bad felt to offer a chicken without wishbone to a householder. Wings are for young ladies: they have to prepare themselves to fly away getting married later. Chicken legs are due to young boys. At last neck and rump are for housewife who has cooked the meal. Imported chicken, sold by pieces, is inappropriate to that traditional allocation.

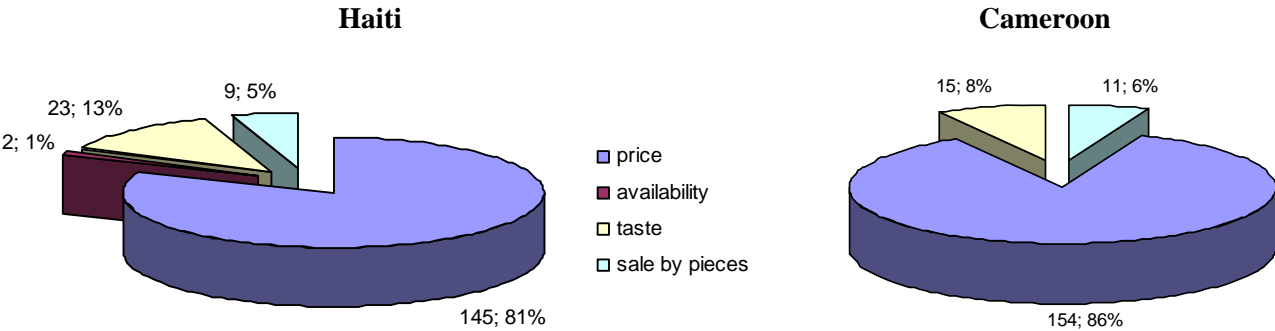
Such a tradition has not been met in Haiti where, since 1991, the crisis of local chicken industry has introduced a deficit of supplying urban markets in local flesh chicken (Chancy, 2005). Lots of Haitian polled consumers have declared that buying imported chicken by cuts was a way to eat chicken at low costs, by choosing only the interesting wanted piece. Moreover, the use of common familial meals seems to decrease via the development of a new form of individual home outside fast food for low income households. One can actually observe the large development of local informal “fast food” in Port-au-Prince where the main proposed meal is a cooked piece of imported chicken. Hot chicken meal is served in « *boites manjé* » (Polystyrene box with lid) to customers who don’t want to sit on place. At the same time, rustic Creole chicken is still common in Haiti, and is the only chicken appropriate for voodoo ceremonies.

It seems then that national issues (of cultural or economic matter) play a role on the evolution of household’s chicken consumption following the arrival of frozen chicken cuts on the market. While traditions and importance of patriotism feeling play in favor of preserving local flesh chicken in Yaoundé, it is not the case in Port-au-Prince where modes of cooking or high level of poverty further the consumption of frozen imported cuts, except for very specific uses that especially require rustic chicken.

3.2. Criteria of choice

Figure 4 represents the distribution of answers to the question about households’ criteria for choosing one type of chicken over another. Answers to this survey question was free, but we have regrouped all the answers in four headings according to the answer being relative to commodity price, taste, availability, or the fact it was sold by pieces or not. Figure 4 only takes into account the criterion declared in first position to that question (one answer by household).

Figure 4: First criteria of chicken choice declared



Source: Household survey (180 households)

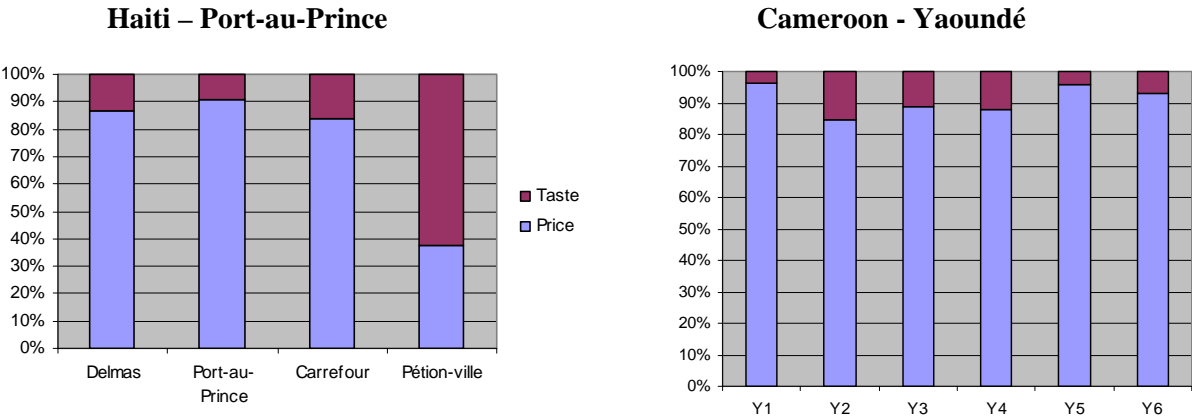
We can see on the figure that declarations are very similar in Port-au-Prince and Yaoundé: the price is the first criterion of choice, with more than 80 % of answers, before the taste and the sale by pieces.

Note that in Yaoundé, the criterion relative to “taste” seems to assume to a patriotism attribute: a lot of households have declared “*I would prefer the local chicken because it is locally produced, anyway it is better*”.

Issue of availability is very rarely mentioned as first criterion, and only in Yaoundé.

Unfortunately, because it was not clearly questioned in the survey, it is not possible to link each answer with the type of chicken the household was thinking about when he answered; and crossing the answer with choices of consumptions does not give any usable results because most households actually consume several types of chicken. However one can check if answers differ from one location to another. Figure 5 gives the results of crossing criteria Price and Taste with households’ locations.

Figure 5: Crossing “Price” and “Taste” criteria with household location, %



Source: Household survey

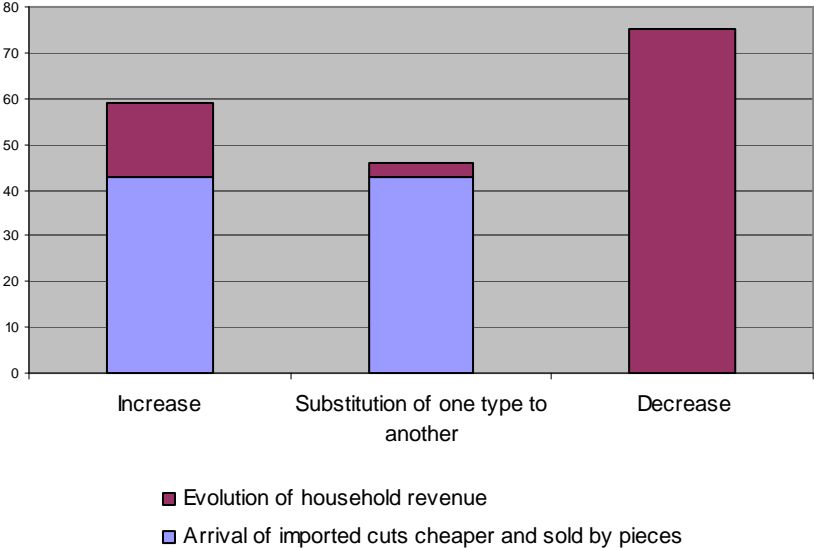
The crossing does not reveal anything particularly significant for Yaoundé, but in Port-au-Prince we observe results for Pétion-ville clearly differ from other communes by presenting a largely higher score of “Taste” as first criterion. Pétion-ville has been a place of holidays for a long time. It is composed by luxurious villas and constitutes the richest part of the city.

3.3. Recent evolution of chicken consumption

Several consumers polled in Yaoundé, and a lot of consumers in Port-au-Prince, have declared that chicken was one of the most appreciated foods. Most people have insisted to explain that supplying cooked chicken pieces to hosts is very important to give good impression. Furthermore, for polled households in Port-au-Prince, cheap imported frozen cuts actually give the possibility to Haitian households to supply meat to the entire family. Chicken is considered as an accessible substitute commodity to other expensive meat. A look at meat prices in Haitian markets, and Chancy (2005) confirms that chicken meat is the cheapest one. However we don’t know any precise study which would give elements to measure to what extent the increase in chicken consumption may affect other meat consumption, or make global meat consumption growing by giving the possibility to poor household to buy meat.

Figures 6 and 7 present the evolution of chicken consumption habits households have declared in Yaoundé (figure 6) and Port-au-Prince (figure 7).

Figure 6: Evolution of chicken consumption in the five last years in Yaoundé

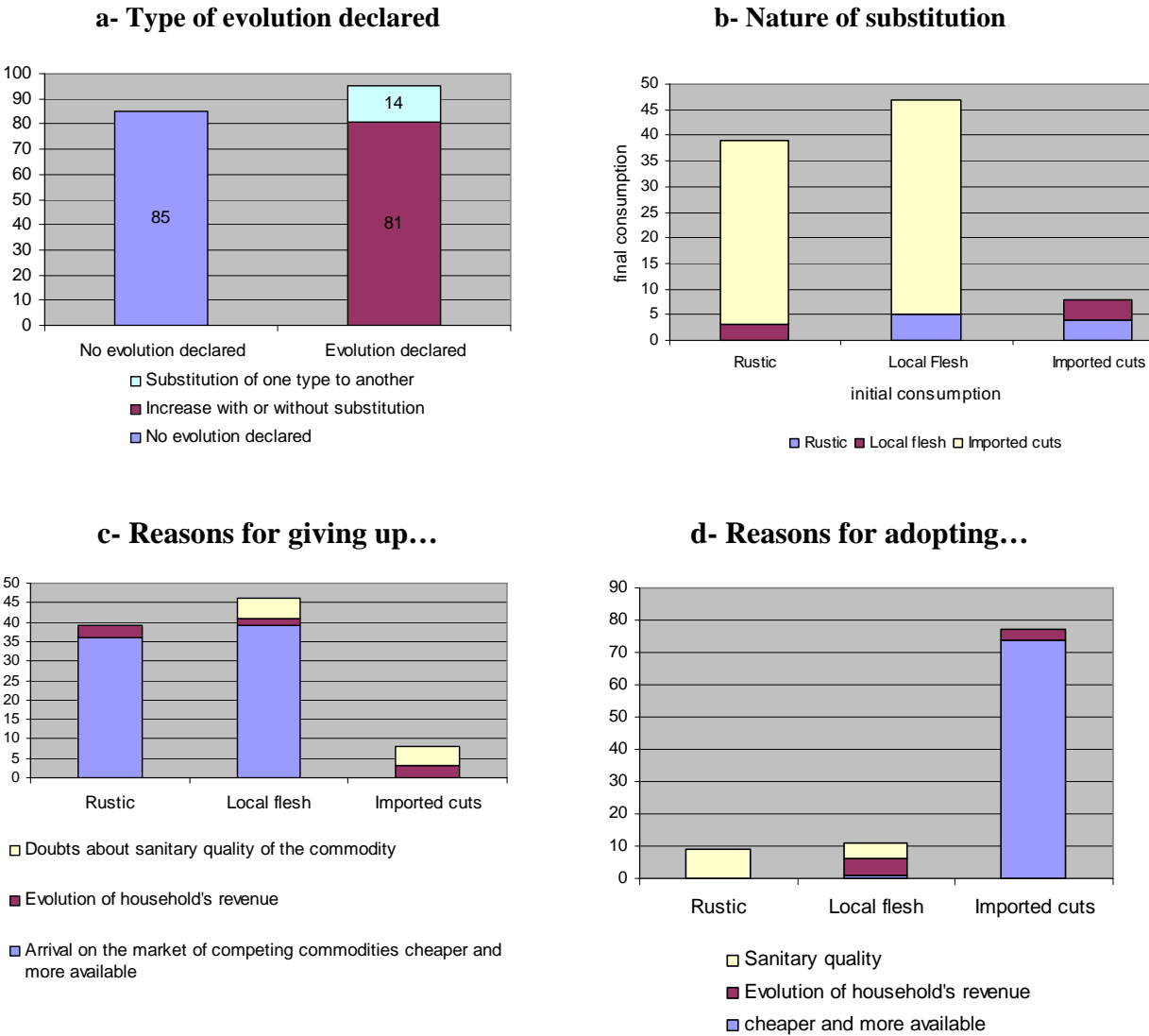


Source: Household survey (180 households)

In Yaoundé, chicken consumption has globally increased for one third of households, decreased for 42 % ; 25 % of households left declared they just have changed the type of chicken they used to buy for the five last years. Recent (negative) evolution of household revenue is the reason presented in case of decreasing chicken consumption while in case of increasing consumption, (positive) evolution of household consumption explains only 27 % of answers, the 73 % left being justified by arrival of imported cuts cheaper and / or sold by pieces. The substitution of one type of chicken to another is mainly explained by arrival of imported cuts; only 7 % of households put forward a revenue argument.

Answers are more detailed for Port-au-Prince because the Haitian survey had been completed after the experiment of Cameroon survey in order to get more precise information especially about substitution among chicken types at least in Port-au-Prince.

Figure 7: Evolution of chicken consumption in the five last years in Port-au-Prince



Source: Household survey (180 households)

In Port-au-Prince 47 % of households declared they had not changed their chicken consumption habits for the five last years. They were 45 % to declare they have increased their chicken consumption (with or without substitution) and only 8 % to say they just have substituted one type of chicken to another. Supplementary questions to Haitian survey give precisions relative to the nature of chicken substitution that occurred in Port-au-Prince. Households were questioned about the type of chicken they did consume five years ago that has been replaced by another type of chicken. One can see on figure 7b the corresponding

answers: rustic and local flesh chicken has massively been replaced by imported chicken cuts. There has been little substitution between rustic and local flesh chicken.

Reasons for giving up *versus* adopting each type of chicken have been systematically answered through Port-au-Prince survey, and results have been reported on figure 7c. As expected, rustic and local flesh chicken have been given up for adopting imported cuts essentially because domestic chicken production could not compete with newly imported frozen cuts which are cheaper and widely available, household's revenue evolution accounts very marginally. However 6 % of households declared they recently have given up local flesh chicken or imported chicken cuts and replaced those commodities by rustic and/or local flesh because of doubts about sanitary quality of the initial commodity. It would be interesting to analyze the socio-economical and geographical distribution of those atypical answers.

3.4. Willingness to pay for each type of chicken

Table 2 compares average households consumers willingness to pay for each type of chicken. Willingness to pay has been measured via the answers to following survey question: "What is the price from which you think the chicken is too expensive?" In coherence with common use, prices for imported frozen cuts are given in kilograms, and those for rustic and flesh chicken are given for a whole chicken (we therefore don't know exactly their weight). Prices are given in local currencies: *Franc CFA* in Yaoundé, *Gourdes* in Port-au-Prince, and converted in US\$, 2005.

Table 2: Willingness to pay for each type of chicken as presented on urban markets

Types of chicken	Average willingness to pay the chicken	
	Haiti	Cameroon
Rustic (alive and entire)	348 gourdes (109) – 118 [9,41 US\$]	3 532 FCFA (905) – 47 [6,82 US\$]
Local flesh (alive and entire)	248 gourdes (94) – 99 [6,70 US\$]	3 363 FCFA (964) – 155 [6,49 US\$]
Imported frozen cuts (kg)	69 gourdes (36) – 158 [1,86 US\$]	1 369 FCFA (111) – 142 [2,64 US\$]

Source: Average of household survey results.

In brackets: standard deviation; in square brackets: number of answers.

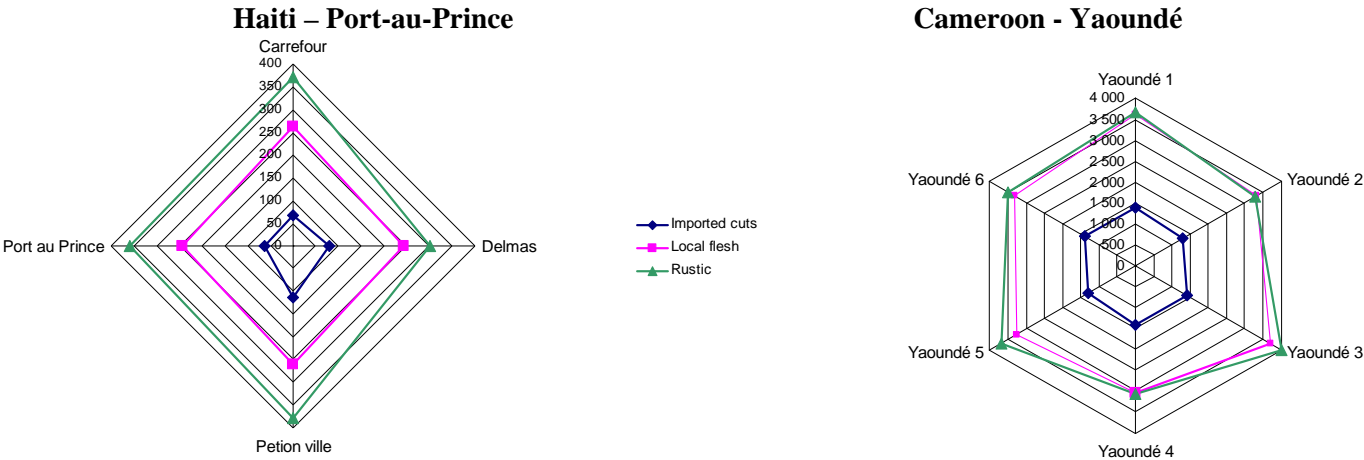
In 2005, 1 US\$ = 37 Gourdes, = 518 F CFA.

Prices orders are quite similar in Cameroon and Haiti: a kilogram of imported frozen cuts is highly cheaper than any domestic chicken, and rustic chicken is sensibly more expensive than local flesh chicken. But while in Port-au-Prince, willingness to pay for local flesh chicken is clearly lower than for rustic chicken; in Yaoundé the difference between both prices is very small. Such results are consistent with the idea that local flesh chicken constitutes in Yaoundé a relative good substitute for rustic chicken, whereas it is not exactly adapted to the same use as rustic chicken in Port-au-Prince. Note that declared prices are consistent with actual market observed prices (see Box 1).

Note that, converted into US\$, willingnesses to pay for local flesh chicken are very close in Port-au-Prince and in Yaoundé. But those for rustic chicken and imported frozen cuts are, in Haiti, respectively higher and lower than in Cameroon.

Figure 8 brings to the fore the influence of household localization (quarters in Yaoundé, communes in Port-au-Prince) on willingness to pay the chicken.

Figure 8: Influence of household’s location on average willingness to pay the chicken



Source: Household survey results.

In Haiti, average highest prices have been declared by households living in Pétion-ville, the richest commune of Port-au-Prince, and especially for rustic chicken and imported cuts. Differences of declared prices between others communes’ households are not so marked. This result is consistent with differentiated choice criteria of Pétion-ville presented in section 3.2

and confirm the level of revenue probably affects choices in terms of chicken consumption. In Yaoundé, difference between willingness to pay for local flesh or rustic chicken is marked in only three quarters: Yaoundé 3, 5 and 6. There is no significant difference elsewhere.

Box 1: Are the willingness to pay consistent with actual chicken market prices? The case of the local flesh chicken in Yaoundé⁸

Commodity prices are not displayed on Cameroonian markets because each price is the result of a specific negotiation between the buyer and the seller; and consumers do not often accept to declare the price they have actually paid for a commodity they just have bought. Moreover it is also difficult to know precisely the weight of a chicken that have been bought: chicken is sold alive, by guesswork, without being weighted during the transaction. Hence we do not have the possibility to know the price per kg of local flesh chicken without buying it. However for frozen imported chicken cuts, terms of negotiations between buyer and seller deal with price per kilogram, cuts being weighted when paid.

Cameroonian National Institute of Statistics (INS, 2004) gives year average consumption prices of local flesh chicken, based on monthly prices readings, coming from household surveys, and converted in prices per kg through an assessment of chicken weight; but the method used for that is not explained. For the years 2001 to 2003, which are the most recent available data, average prices per kg are 1,030 F CFA for local flesh chicken and 1,579 F CFA for imported chicken cuts. But those figures are contested by many professionals of poultry sector and Ccima (2005) assesses the price per kg of local flesh chicken has fallen down from 1,950 F CFA in 1997 to 1,745 FCFA in 2003. Those last values have been used by Cameroon Tribune (07/10/2005) and Teleu-Ngandeu and Ngatchou (2006) who clearly mention that imported chicken is less expensive for consumers than local flesh chicken. INS statisticians interviewed about that issue recognize their method of price reading probably leads to underestimate local flesh chicken price, which are not consistent with those experimented on markets.

Our first inquiry in Yaoundé markets showed there is a large variability of prices along the day: customers benefit from better prices at the early beginning and at the end of the day. Moreover, during a period of fest, the demand increase has a positive effect on chicken prices. Furthermore, effective prices are not similar from one market to another in the same town.

During days and out of any particular period of fest, we have interviewed 60 chicken sellers working in the main markets of Yaoundé (Mfoundi, Mokolo, Etoudi, Nkol-Eton, Emombo, Essos, Royal Hôtel, Mvog Mbi, Melen). Despite the difficulties to implement such exercise, 130 chicken sold on those markets have also been weighted with a scale, out of any particular transaction.

The average weight of chicken is 1.70 kg, without significant difference between markets. The average willingness to pay for a local flesh chicken, declared by households, is 3,363 F CFA (cf. Table 2). That corresponds to an average of 1,978 F CFA / kg. Pooled chicken sellers declare they sell the local flesh chicken at price per kg between 1200 and 1,834 F CFA.

Even if it is impossible to establish the exact average price of local flesh chicken, we can conclude that corresponding declared households' willingness to pay and sellers' prices are consistent with CCIMA price data.

⁸ Given the insecurity of Haitian markets during the survey period, comparable investigation about Haitian prices has not been implemented in Port-au-Prince.

4. Conclusion

The empirical work, based on two similar surveys in Port-au-Prince (Haiti) and Yaoundé (Cameroon), aimed at identifying the determinants of the recent evolution of chicken consumption in urban area of two different developing countries.

As expected, and in conformity with associations studies⁹ which describe the crisis of chicken industry which has occurred since the opening to frozen chicken imports, surveys we have carried out in both countries confirm that the relative lower cost of imported chicken has introduced a substitution of imports for domestic chicken, price remaining a major criteria of consumer's choice. However our investigations bring to the fore that the effects of such a competition on urban households' chicken consumption differ from Cameroon to Haiti.

In Cameroon, local flesh chicken industry is weakening, but still exists and local flesh chicken supply still remains available. Yaoundé consumers really have the choice between local flesh chicken and imported frozen one, rustic chicken being a little less easy to find. Chicken cuts are well adapted to usual chicken consumption, in particular fried chicken, which is very popular way of cooking especially for ceremonies meals. Maybe chicken sellers would have interest to offer not only entire domestic chicken but also cuts of domestic chicken, to encourage households to buy domestic instead imported chicken in cases where household budget constraints *versus* cooking uses direct consumers to buy chicken cuts.

However, Yaoundé households display a preference for domestic, local flesh (about two third) or rustic (about one third) chicken when price consideration are left out. Domestic chicken still remains necessary for traditional familial meals which require the presentation of chicken as a whole. For this particular use, local flesh chicken is a second best choice if rustic chicken is not available. In other words, it seems there is still a place in Cameroon urban consumption for entire local flesh chicken, because the later presents specific attributes of which imported chicken is lacking. Moreover, the origin of chicken seems to constitute a quality attribute playing in favor of local chicken for consumers who care for taste or patriotism.

On the contrary at Port-au-Prince, the choice of consumers actually only exists between rustic (Creole) chicken and imported frozen chicken, because local flesh chicken are not easily available any more in urban area; it even seems that corresponding specific demand has strongly decreased in Port-au-Prince. Surveys show that massive imports of frozen chicken

⁹ Agir Ici, 2004 ; Acidc, 2005

cuts at low price have already changed food habits relative to chicken consumption. Urban Haitian households have appropriated this new commodity: frozen cuts are not more considered as substitutes for local chicken but have simply replaced local chicken. Imported cuts have replaced local flesh chicken not only because they are practical to cook, they also captured new low income consumers, giving them the possibility to buy only few pieces instead of a whole chicken. As a result, no aspect of recent evolution of Haitian urban demand seems to play in favor of local rationalized flesh chicken without a complete transformation of the supply chain which would allow the sale of chicken by pieces and at low prices. Note that several actors of poultry industry we have met in Haiti have confirmed the local rationalized flesh chicken industry would be very difficult to re-introduce in the market competition and purpose to target eggs industry which would be more in line with national demand (Chancy, 2005).

Rustic chicken is still present on urban markets in Port-au-Prince, but it is so expensive that it is not accessible to poor households. However that chicken is still preferred by some consumers at least for some particular uses (voodoo). The opportunity and possibility to develop efficient public supports may also be interesting to analyze.

Using those first empirical results, on-going research tries to use available socio-economic households' variables for statistical analysis to measure more precisely the influence of different factors on household demands for different types of chicken: consumption habits, willingness to pay and other results measured in our survey. We also aim to assess value and demand for quality attributes of chicken in each studied country, through a price hedonic method.

Even if chicken cheap imports have actually benefited to urban poor consumers in developing countries, the resulting competition between imported and domestic chicken has been denounced by several non governmental organizations and associations, because it caused the collapse of many poultry husbandry and the loss of jobs in the local food chain. Those organizations often argue that the liberalization of chicken market is an emblematic example of the negative effects of trade liberalization for developing countries due to international trade agreements. They notably recommend reinstating high level of border tariff protection against imports of chicken pieces.

Our comparison of similar survey results for two different developing countries shows that such an approach, considering chicken as a homogeneous product whatever its origin, is too simplistic: it occults the consumer's perception of quality attributes of domestic *versus*

imported chicken, which actually differ from one country to another, and from one household to another. In particular, if frozen imported cuts is now preferred by Haitian households to local flesh chicken, it only constituted a second best choice for Cameroonian households after local flesh chicken. That is why, because of different level of poverty, and related to cultural differences, a basic border protection against chicken imports, as suggested by NGO's, would not have the same effects in both countries. Such a tariff protection would certainly have some efficiency in Cameroon to help domestic production to re-capture its previous market share, because domestic production still survives in Cameroon, and because specific attributes of domestic chicken (sold as a whole) is appreciated at least for households' meals. But our results highlight that a policy targeted on consumption would also be useful: for example Cameroon consumers are sensitive to domestic origin of meat, and they may modify their habits with appropriate information campaign. In Haiti, our results suggest that a border protection would have huge negative impacts on Haitian consumers without actually helping domestic poultry industry which is actually not adapted to recent chicken consumption evolution. In all case, if the re-introduction of tariff barriers against imports could be justified to safeguard domestic industry, there is room for negotiation with trade partners through international agreements. These issues need to be investigated and will be the core of further research.

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Appendix 1: Control variables and implementation of quota method

Distribution of households in global population and quota for establishing samples

Yaoundé Quarters	Population	%	Nb. of pooled households
Yaoundé 1 (+7)	53 187	29	52
Yaoundé 2 (+5)	39 263	21	38
Yaoundé 3	51 133	28	50
Yaoundé 4 (+6)	40 176	22	40
Total	183 759	100	180

Port-au-Prince Communes	Population	%	Nb. of pooled households
Port au Prince	736 618	36	66
Delmas	604 211	30	54
Carrefour	392 986	20	35
Pétion-Ville	280 214	14	25
Total	2 014 029	100	180

Allocation of pooled household following the same method for Yaoundé quarters, example of Yaoundé 1, using ECAM, 2000.

Household's size	Hut	House with several households	Modern villa	Buildings with several flats	Concessions
1	2	7	1	1	1
2 to 5	3	14	1	1	1
6 to 9	3	11	1	1	1
> 9	1	1	1	0	0
Total = 52	9	33	4	3	3

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