

Typology of Actors of Guinea Fowl (*Numida meleagris*) Breeders in the North of Côte d'Ivoire

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Abstract

A study on the characterization of the actors of guinea fowl sector in the North of the Côte d'Ivoire was realized from November 2015 to October 2016. Thus, a man power of 130 guinea fowl stockbreeders was surveyed. This investigation touched 80 breeders of which 29 in Korhogo, 43 in Sinematiali, 32 in Dikodougou and 26 in Niakaramandougou (Niakara). According to this study, the breeding of guinea fowl is dominated by the Ivorian (72%) mainly made up of senoufo with 89.36%. The foreign community consists of peuls (83.33%), and Mossi (2.77%) of the Burkina on the one hand and Malian (13.88%) on the other hand. All the age brackets are implied in practice of the activity. Contrary to the foreigners, the number of breeder evolve with the age in the Ivorians community. At these first, the number of the breeders falls at more than 49.99% in the last age bracket. The activity is practised on a purely secondary basis and is dominated by the people married to 88.3% and 94.44% respectively at the Ivorians and the foreigners. The unit price of guinea fowl varies from 3500 at more than 5500 FCFA. According to these prices, the breeding of guinea fowl could in addition to its sociocultural importance, to constitute not only one source of income but also a significant source of protein for the rural populations and the residents of the large cities.

Keywords: Characterization; Actors; Guinea fowl sector; North; Côte d'Ivoire.

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1. Introduction

The poultry production constitutes today an essential link of animal production system in Côte d'Ivoire. They contain an approximately 33 million heads (in 2007) including 2.3 million layer, 6.4 million table fowls and 23.5 million family poultry [1]. According to these data, 70% of product of poultry come from the family sector against 30% of the modern sector. Indeed, contrary to the modern poultry farming which is concentrated around the urban areas, the traditional breeding is met everywhere in the country. The strongest concentration is recorded in savannah zone which provides more of 40% of the manpower [1]. Among the species met (chickens, guinea fowls, ducks, turkeys, pigeons), the local guinea fowl (*Numida meleagris*) occupies after traditional chickens, the second place on the quantitative level with 14.35% of the production. Thus, it constitutes a significant source of animal protein for the local populations and the residents of the large cities. It constitutes in addition, a considerable source of incomes for these rural populations. Unfortunately, in spite of its socio-economic importance, the sector of guinea fowl knows a very weak consideration in comparison to the other poultry sectors. It would be thus necessary to increase the level of guinea fowl production. However, that could not be possible without a preliminary knowledge of the actors of the sector. Thus, the objective of this work is to characterize the actors of the sector of guinea fowl in Côte d'Ivoire.

2. Material and methods

2.1. Study area

This study was carried out in north of Côte d'Ivoire, from November 2015 to October 2016, more precisely in the localities of Korhogo, Nikaramandougou, Dikodougou a Sinématiali. This zone is characterized by a climate of the tropical type Sudanese, marked by two great seasons: Figure 1 presents the zone of study. One season of rain which extends from May to October and one dry season from November to April. The dry season is under the influence of the Harmattan (dry and hot wind of the Sahara) between February and December as well as points of heat between March and April. The temperatures vary between 10 and 42°C [2], with an annual average temperature of 25°C. Annual pluviometer varies from 1000 to 1200 mm [3].

2.2. Methods of study

The study started with a phase of pre-investigation made three months in the northern part of the country. The results of this pre-investigation allowed to do the investigation cards on the one hand and to retain four localities for the study on the other hand. They are the localities of Korhogo, Niakaramandougou, Sinématiali and finally that of Dikodougou. The choice of these various localities was made according to whether they record the greatest numbers of actors who are accessible all the year. On the prepared cards, the accent was put on verifiable and quantifiable information. In particular, ethnos group, the educational level, nationality, the sex, the matrimonial situation, the number of guinea fowl sold by locality, average income by locality or season of sale, the number of undertaken activities and difficulties encountered. The questionnaire was submitted thereafter to a total of 130 guinea fowl breeders in the four localities. Thus, each actor daily informed his questionnaire with the assistance of a pupil or a person knowing to read. Then, once per week, the cards are

recovered and validated after a direct interrogation phase of the breeder concerned. The classification of the breeders and the distribution by age group were made respectively according to [4] and [5] quoted by [6].

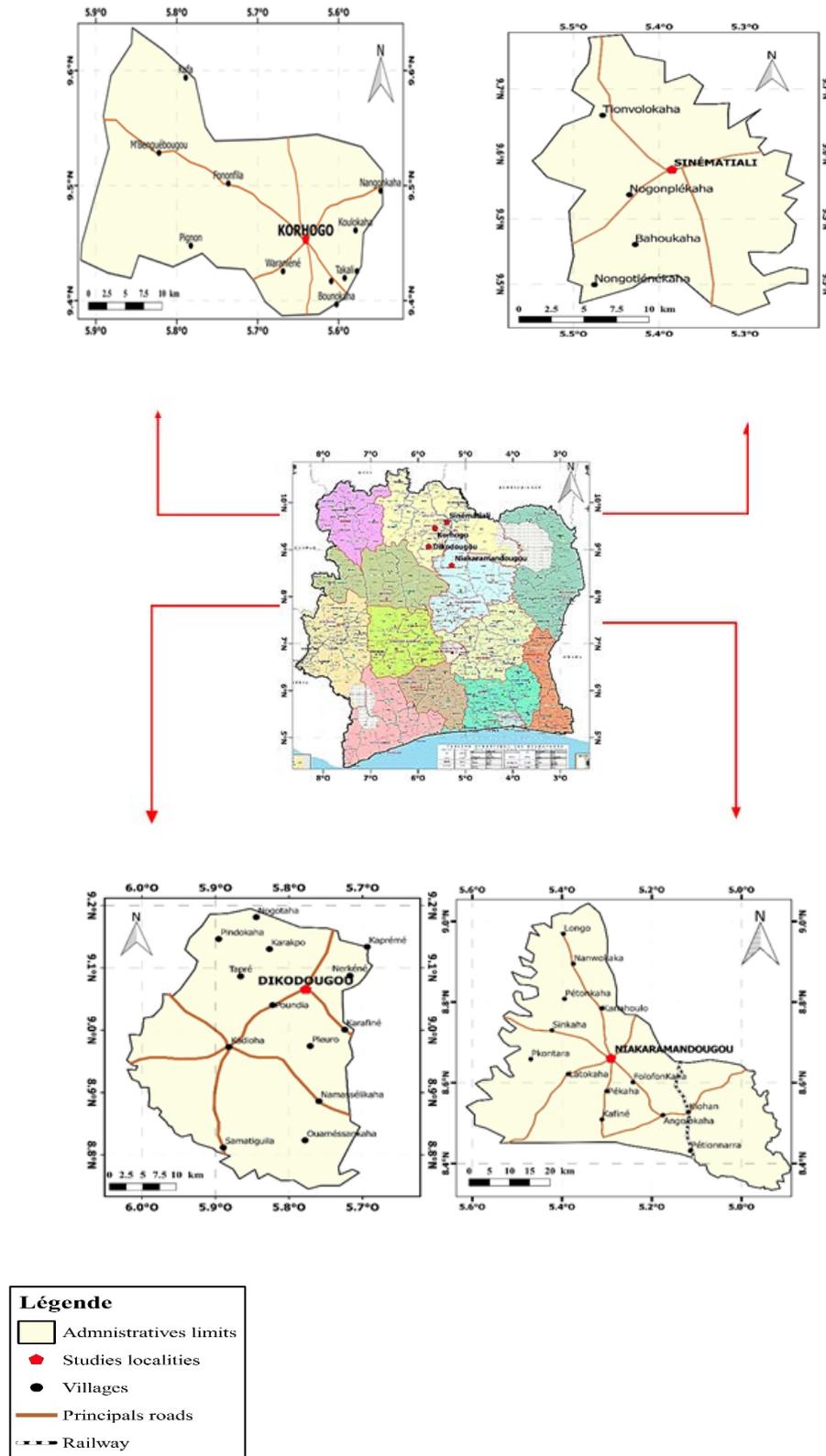


Figure 1: Geographical situation of the surveyed localities

3. Investigation results

3.1. Involved ethnic groups

The investigation touched a man power of 130 guinea fowl breeders including 29 in Korhogo, 43 in Sinematiali 32 in Dikodougou and 26 in Niakaramandougou (Niakara). According to the results, in the whole of these localities, the activity of guinea fowls breeding is dominated by Ivorian with more than 72%. However, contrary to the other localities, that of Niakara records a stronger presence from foreigner in practice of the activity. Within the community of nationals, the activity is dominated by senoufo group which is represented by three ethnic groups. In particular, Tiémbara in korhogo (58.62%) and Niakara (34.62%), Nafara in Sinematiali (72.09%) and Koufoulo in Dikodougou (84.37%). Apart from those, one also records the presence of Lobi ethnic (7.69%) at Niakara and the Malinkés ethnic (17.24%) and (9.37%) respectively at Korhogo and Dikodougou. As regards the foreign community, the activity is dominated by Peul Burkinabé to 83.33%. Then, comes the Malians (13.88%) and at end, the Mossi of burkina (2.77%).

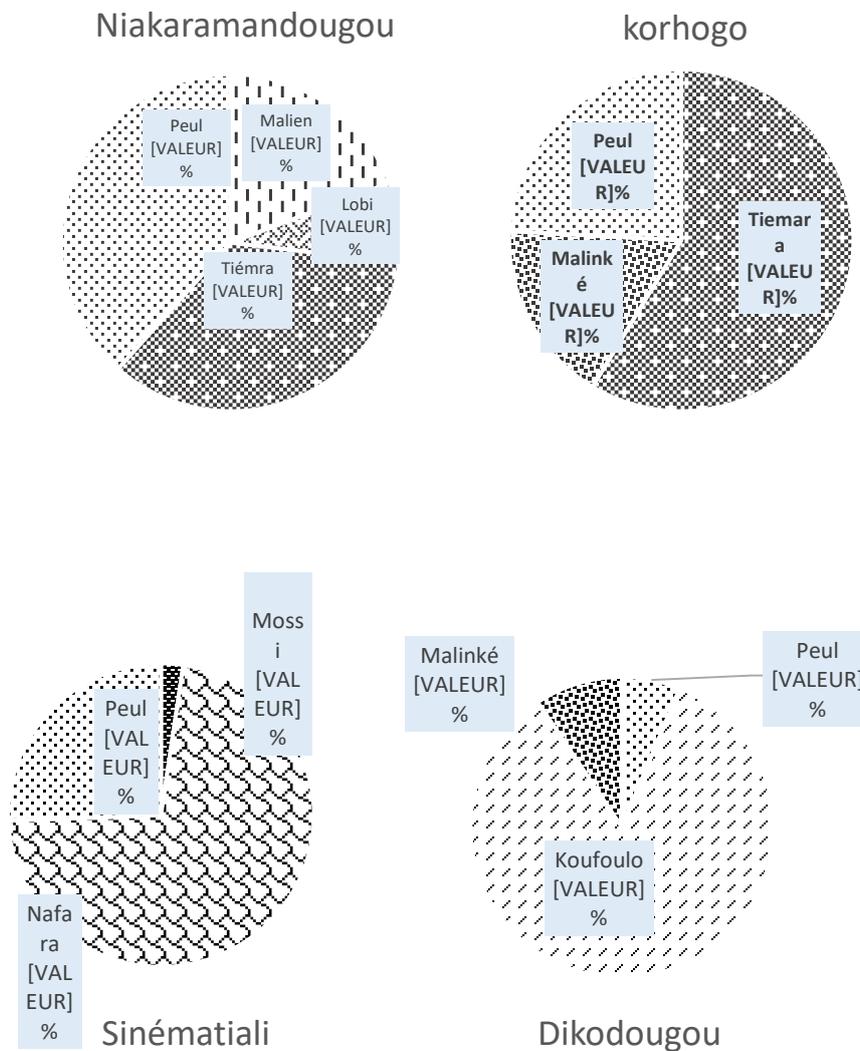


Figure 2: Distribution by ethnic group of the guinea fowl breeders listed in the localities of Korhogo (A)

(N = 29), Niakara (B) (N = 26), Sinématiali (C) (N = 43) and of Dikodougou (D) (N = 32) from May 2015 to April 2016

3.2. Age groups involved

In the zone of investigation, the number of person practicing the breeding evolves with the age for the first two sections of age (< 30 years and [30 to 45 years [) as well at the nationals the non-nationals. This evolution is maintained in the third section (≥ 45 years) at the nationals with a total of 2.09 and 1.52 times respectively larger than man power of the first and second age bracket. On the other hand, among foreigners one records a fall of the manpower with more 49.99% compared to the age bracket [30 to 45 years [.

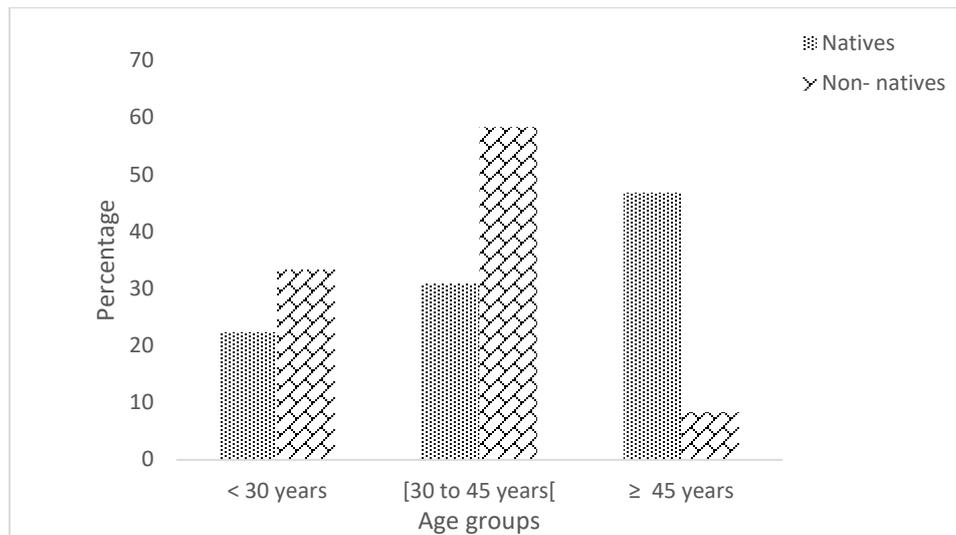


Figure 3: Distribution of guinea fowl breeders by sex recorded in the localities of Korhogo, Niakara, Sinematiali and of Dikodougou (N = 130)

3.3. Distribution of the breeders according to the sex

In the whole of the surveyed localities, the breeding of guinea fowl is practiced by the two sexes as well in the foreign community and in the native community (Figure 3).

However in both cases, the activity is dominated by the men. In the community Of the Ivory Coast, this predominance is net with 7.55 times more man than women. As for the foreigners, the proportion of the men although dominant, is only 11.11% higher than that of the women.

3.4. Matrimonial situation of guinea fowl breeders

In the two communities, the breeding of guinea fowl is dominated by the married. The proportion of the married is 74.46 % and 88.88% larger than that of the unmarried respectively in the nationals and foreigners group.

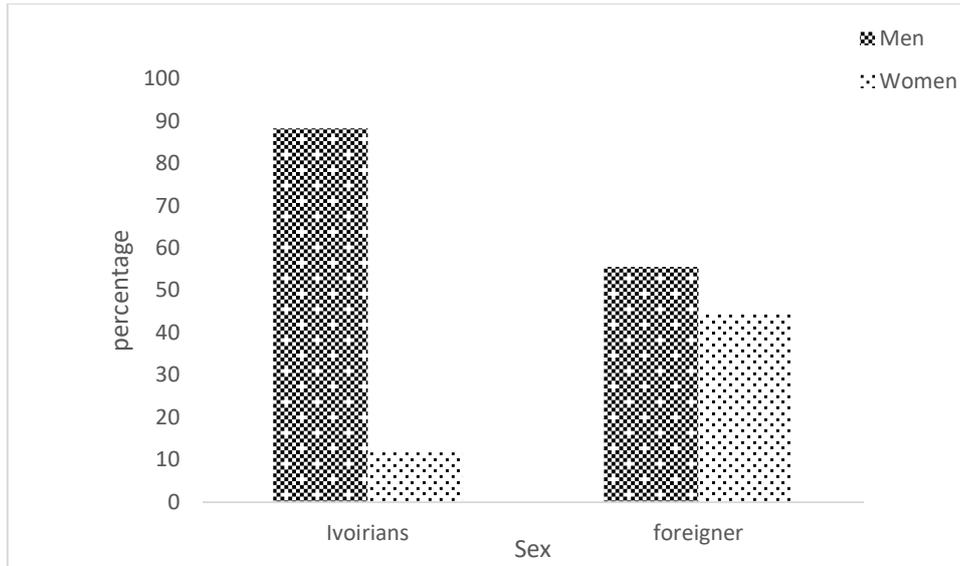


Figure 4: Distribution by sex of the guinea fowl breeders listed in the localities of Korhogo, Niakara, Sinematiali and Dikodougou (N = 130)

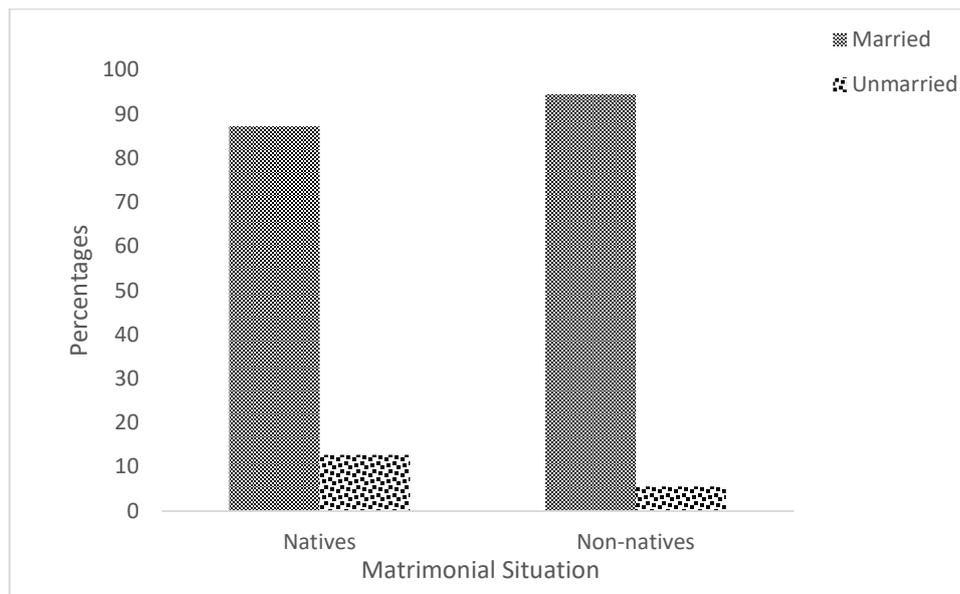


Figure 5: Matrimonial situation of the guinea fowl breeders listed in the localities of Korhogo, Niakara, Sinematiali and Dikodougou (N = 130)

3.5. Activities associated at guinea fowl breeding

In the surveyed zone, the breeding of guinea fowl constitutes for the large majority of the actors, an ancillary activity. Indeed, the investigation reveals that the dominant activity in the zone is the agriculture which gathers more half of the actors. This report is made especially in the Ivorian's community.

Contrary to the foreign community which wavers between trade and other types of breeding.

Table 1: Activities associated at guinea fowl breeding

Activities associated	Korhogo		Niakara		Sinematiali		Dikodougou	
	Ivorian	Foreigner	Ivorian	Foreigner	Ivorian	Foreigner	Ivorian	Foreigner
only breeding	4.55%	-	-	-	16.13%	-	6.66%	-
breeding + agriculture	59.1%	28.57%	45.45%	13.33%	32.26%	-	50%	-
breeding + trade	18.18%	-	18.18%	13.33%	32.26%	25%	32.26%	-
breeding + another type of breeding	0	71.43%	27.27%	60%	9.68%	58.33%	6.66%	100%
breeding + weaver's job	13.64%	-	-	-	-	-	-	-
breeding + agriculture + other	14.55%	-	9.09%	13.33%	9.68%	16.66%	10%	-
Total guinea fowl breeding only	4.55%	-	-	-	16.13%	-	6.66%	-
Total guinea fowl breeding + another job	95.45%	100%	100%	100%	83.87%	100%	93.34%	100%

3.6. Selling price of guinea fowls in the various localities

The selling price of guinea fowls varies between 3500 and 5500 in the various localities. However, the prices are more or less function of localities. Thus, the prices dominating in the localities of Korhogo and Sinematiali are in the third class of price (≥ 5500 FCFA). ¶In the two other localities in particular Niakara and Dikodougou, the prices evolve inversely to those of Korhogo and Sinematiali. The prices most met in these localities are in the interval] 4500 to 5500 FCFA [.

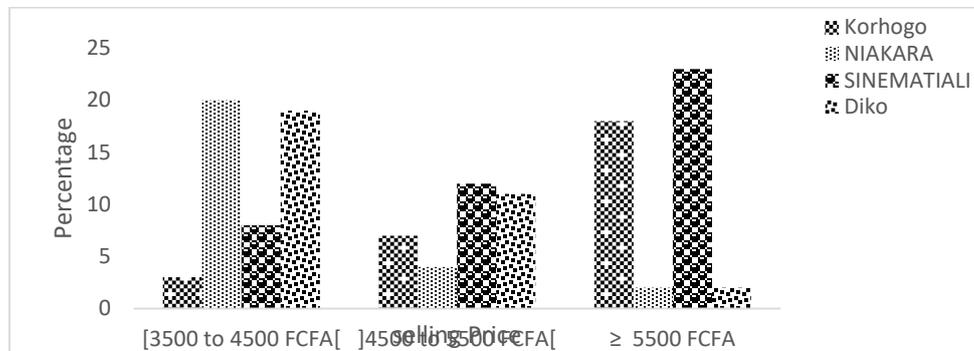


Figure 6: Selling price of guinea fowls in the various localities

3.7. Proportion of animals sold by locality

In the period of the investigation, 3726 animals were sold in the four localities. This reveals that more half (51.93%) of guinea fowls sold on the market comes from the locality of Sinematiali. Second half gathers the three other localities. However in this second half, the proportion of guinea fowl sold in Niakara is respectively 1.96 and 3.27 times higher than that of Dikodougou and Korhogo.

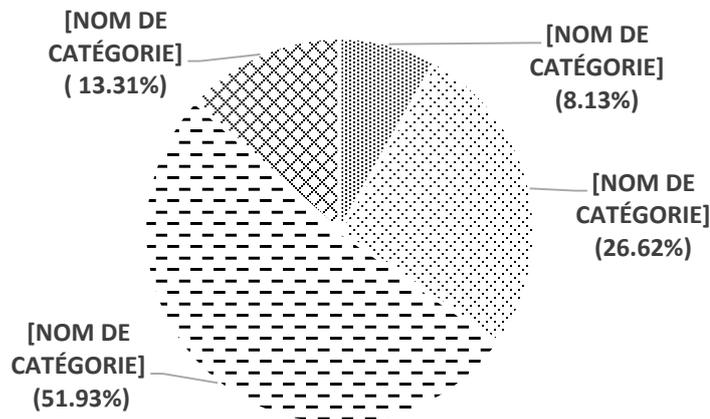


Figure 7: Proportion of animals sold by locality

4. Discussion

In the zone of study, the majority of the recorded actors are native nationals of Sénoufo group. The strong implication of autochthones in practice of breeding activity would carry to believe that the guinea fowl breeding is a tradition which is transmitted from generation to generation. That could also be related to the importance of guinea fowl in the sociocultural relations of senoufo. Indeed, at these people, the guinea fowl is an animal of prestige, reserved to the people estimable. In addition, it is used as offering in a great number of ritual cultural of these people. The same report was made by [7] during their work made in 2013. According to these authors, the guinea fowl in addition to be bred for food, is also bred for its sociocultural importance. In particular, the funerary ceremonies and the marriages. In the locality of Niakara, the activity is dominated by the foreigners and nationals coming from other areas of the country. The foreigners in this locality, made up mainly of Peuls are Burkinabés. The strong presence of Peuls in the activity would be due to the fact that they are at the origin of the breeders. In addition, these people have already a culture of breeding of guinea fowl in their tradition. That was meant in work of [8] led to Burkina Faso in 2008. According to these authors, the breeding of guinea fowl is a very current practice at Burkinabé, at which one finds guinea fowl breeding within each family. The absence of the Tagbana, native of Niakara, within the actors in this locality, would confirm the fact of the activity is of nature hereditary. Since the two groups of aliens (Peuls and Tiémara) recorded in the aforementioned locality are both of the guinea fowl breeders at origin.

The presence of all the age groups in practice of the activity would show that the breeding of guinea fowl is an

enthralling activity not requiring a main physical effort, however requiring a detailed attention. That would be justified by the strong presence of old person of more than 30 years in the activity of breeding. The fall of the number from foreign in the third age bracket would be justified by a return of those in their country of origin. Indeed, these populations came from Burkina to look for money, once the adulthood reached, prefers to return in their country to live their last days near his. The presence of the two sexes in the activity would show that the breeding of guinea fowl does not require a main physical effort. Moreover, except for the locality of Korhogo, the three other localities contain all the presence of the female sex. However, a general assessment of the study, shows that in the native breeders group, the activity is dominated by the men with proportion of 88.3%. Similar results were obtained by [9]. These authors recorded a participation of 89.4% of the male sex. This result is not different from that of [10] in 2015. These authors obtained a rate of male participation going up to 98% in two districts of the north of Ghana. This weak participation of women in the activity could explained by the strong implication of these women in the agricultural activities. It is to be noticed that the breeding of guinea fowl is dominated by the married people. This prevalence of married in practice could be due to the detailed attention which request the breeding of guinea fowl. Indeed, the guinea fowl breeding requires a detailed attention which passes by the collection of eggs, the preparation of brooding hen and also the follow-up of the young guinea fowl to quote only those. All this requires a meticulous follow-up which doesn't make it possible to the unmarried to thrive in the activity at the evil to not find anybody to help them in the event of voyage.

The large majority of the breeders associate other activities the breeding of guinea fowl. That could be due to the time put by guinea fowl to reach the commercial weight which is at least six months. In addition, in the guinea fowl breeding, the mortality of the young guinea-fowl is raised and sometimes the death rate can reach 100% according to [11]. What would not make possible to the breeders to do it as an activity full-time. The investigation records a heterogeneity of the selling price of guinea fowl in the various localities. The higher prices are recorded in the localities of Korhogo and Sinematiali. That could be explained on the one hand by the strong demography and the high level of urbanization of the locality of Korhogo and on the other hand, by the proximity of Sinématiali at the town of Korhogo. In addition, the selling prices recorded in Côte d'Ivoire are largely above those of other countries like Burkina and Ghana. That would carry to saying that the demand for Côte d'Ivoire in terms of customers is very high compared to the offer. A rise of the production would thus constitute an alternative for a reduction of cost of sale of guinea fowl. About the four localities, Sinematiali and Niakara record the greatest proportions of sold animals. That could be explained by a clear control of the activity in these two localities.

5. Conclusion

At the end of this study, it arises that the breeding of guinea fowl is a significant socio-economic activity met in the north of Côte d'Ivoire. In particular in the localities of Korhogo, Sinematiali, Niakaramadougou and Dikodougou. It is practiced as well by the nationals than the foreigners. It is however dominated by the nationals with more than 72%. In that group, the Sénoufo remain majority (62.43%) even if the presence of Malinkés (17.24%) and Lobi (7.69%) is to announce. The Peuls (83.33%) and Mossi (2.77%) of Burkina and the Malians (13.88%) constitute the foreign community. contrary to the three other localities, in Niakara, the activity is dominated by the foreigners. All the age brackets are present in the activity with however a stronger

participation of the old people. Contrary to the foreign community, where it's recorded as many men as women, at the nationals, 88.3% of the actors are male sex. Moreover, the activity is dominated by the married (90%), compared to the unmarried who are less than 10%. In their large majority, the breeding of guinea fowl remains an ancillary activity for the breeders. The activity generates considerable income to the actors. However, the high mortality of the young guinea-fowl remains a major problem announced by all the actors. Vis-a-vis this situation, it would be necessary to seek the causes of this mortality in term of mode of control of the animals since the collection of eggs until the end of young guinea-fowl phase. Also, to evaluate the sanitary state of the animals in term of gastrointestinal parasites.

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References

- [1] FAO (2008). Revue du secteur avicole Ivoirien. 77p.
- [2] Yapi-Gnaoré CV, Oya BA Ouattara Z (1996). Revue de la situation des races d'animaux domestiques de Côte d'Ivoire. Anim. Gen. Res. Info. 19: 99-118.
- [3] Drogbeu S (1994). Rapport d'activités pour la campagne 1993-1994, zone Nord. 25p.
- [4] Vanga AF (2004). Conséquences socio- économiques de l'expulsion des pêcheurs étrangers en Côte d'Ivoire: lacs d'Ayamé et de Buyo. Revue Européenne des Migrations Internationales 20(1) : 197-205.
- [5] Tah L, Da Costa KS, Kouassi JN, Moreau J (2009). Effort de pêche et production piscicole au lac d'Ayamé I (bassin de la Bia ; Côte d'Ivoire) après le départ des pêcheurs « Bozo ». Agron. Afr. 21(1) : 1-115.
- [6] Yapi JN, Blé CM, Etchian OA, Kadjo V, Soro D, Yao K (2016). Actors and effort of the artisanal harvesting of mangrove oyster *Crassostrea gasar* along the littoral lagoons Ebrié and Aby (Côte d'Ivoire). Int. J. Biosci]. 9(6): 45-54.
- [7] Avorny FK, Salifu S, Panyan EK, Al-Hassan BI, Ahiagbe M, Yeboah F (2016). Characteristics of guinea fowl production systems in northern Ghana. A baseline study of 20 districts in northern Ghana. Livestock Research for Rural Development. Volume 28, Article 134. Retrieved November 21, 2016, from <http://www.lrrd.org/lrrd28/8/avor28134.html>
- [8] Sanfo R, Boly H Sawadogo L, Brian O (2008). Performances pondérales de la pintade locale en système d'alimentation améliorée dans la zone centrale du Burkina Faso. Revue Elev. Méd. Vét. Pays Trop., 61 :135-140
- [9] Konlan SP, Avorny FK (2013). The effect of wetland on guinea fowl (*Numida meleagris*) egg

productivity and fertility during the dry season in the guinea savannah ecological zone of Ghana. *Sky J. Agric. Res.* 2(9):126-131.

[10] Issaka BY, Yeboah RN (2016). Socio-economic attributes of guinea fowl production in two districts in Northern Ghana. *Afr. J. Agric. Res.* 11(14): 1209-1217.

[11] Kusina NT, Saina H, Kusina JF, Lebel S (2012). An insight into guinea fowl rearing practices and productivity by guinea fowl keepers in Zimbabwe. *Afr. J. Agric. Res.* 7(25): 3621-3625.