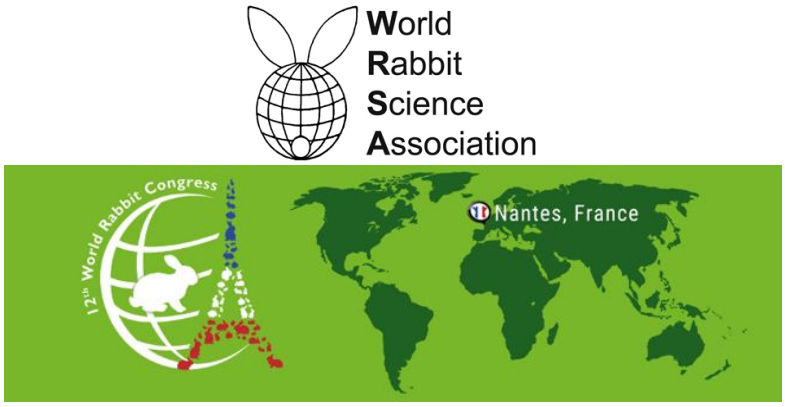

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TYPOLOGY OF RABBIT FARMERS IN THE DISTRICT OF ABIDJAN AND THE REGIONS OF SOUTH COMOÉ AND MÉ

Sangare S.[1]*, Kimse M.[1], Bléyéré M. N.[2], Yapi J. N[1]

[2]Laboratoire of Cytology and animal Biology, Training and Research Unit of Nature Sciences, University Nangui Abrogoua. 02 BP 801 Abidjan 02 Côte d'Ivoire.
[2]Laboratory of Physiology, Pharmacology and Phytotherapy, Natural Sciences Research and Training Unit, Nangui Abrogoua University; 02 PO Box 801 Abidjan 02 Côte d'Ivoire.
*Corresponding author: Sisang89@gmail.com

ABSTRACT

After a decade of growth, the rabbit industry in Cote d'Ivoire has experienced a slowdown due to the 2010 and 2011 electoral crises. Nevertheless, we are seeing renewed growth in rabbit workshop facilities in recent years. The aim of this work is to draw up a typology of rabbit breeding actors in the Ivory Coast. This characterisation was based on a three-month pre-survey phase from April to June 2017, followed by a two-year survey phase from July 2017 to June 2019. The study involved a survey of 216 rabbit farmers spread across Abidjan District, the South Comoé region and the Mé region. The results showed that the majority of rabbit farmers are nationals (92.4%). All age groups and both sexes are represented in the rabbit farming activity. Nationals have the highest proportion of married and single people with 88.2% and 89.3%. In all localities, the number of farmers who attended school was higher. The results of the survey show that the largest number of rabbit workshops, 51%, were established after 2013. However, rabbit farming remains a secondary activity for most farmers.

Key words: Rabbit; Actors; Animal husbandry; Abidjan District; La Me; South Comoe; typology.

INTRODUCTION

Livestock farming in Ivory Coast has experienced a new boom in recent years. Several animal production development programmes, particularly for small-scale livestock production, have been put in place by the authorities with a view to increasing productivity and diversifying animal production (PNIA, 2010; PND, 2015). However, animal production does not cover the animal protein needs of the Ivorian population (PSDEPA, 2014). According to this source, these needs are estimated at 10 kg/inhabitant/year. Very little known and marginalized, rabbit farming can effectively contribute to self-sufficiency in meat products in Côte d'Ivoire (Kimsé et al., 2017a). Rabbit meat is consumed by almost the entire Ivorian population and is not subject to any religious ban. Moreover, rabbit breeding is easy to carry out. Rabbit farming in Côte d'Ivoire is an emerging production sector, with an exponential increase in the number of rabbit farms in Abidjan District between 2000 and 2013 (Kimsé et al., 2017a). Recent work has provided some data on the health and nutrition (Bléyéré et al., 2013; Kimsé, 2009) of animals reared in Côte d'Ivoire. Almost ten years later, it would be appropriate to update the profile of Ivorian rabbit farmers in order *to* identify and find solutions to the problems that could delay the development of this sector. The objective of this work is therefore to draw up a typology of rabbit breeders in Côte d'Ivoire, particularly in the District of Abidjan and the South Comoé and Mé regions.

MATERIALS AND METHODS

Study area

The study was carried out on rabbit workshops in three localities in Côte d'Ivoire, the district of Abidjan, the Mé region and the South Comoé region (Figure 1 – *figure is missing*).
The District of Abidjan covers 2,119 Km² with a population of 4,707,404 inhabitants (RGPH, 2014). It is made up of an urban area (Abidjan) and a peri-urban area (Anyama, Bingerville and Songon).

The Mé region is located in the southern part of the Ivory Coast. It covers an area of 8237 Km2 with a population of 514,700 inhabitants (RGPH, 2014
The Sud-Comoé region is located in the south-east of Côte d'Ivoire and covers an area of 7278 km2 with a population of 642 620 inhabitants (RGPH, 2014).

Method of data collection
This characterization was based on a three-month pre-survey phase from April to June 2017, followed by a two-year survey phase from July 2017 to June 2019.
The survey sheets were drawn up on the basis of the information collected during the pre-survey phase. These files contained information on the profile of rabbit breeders, in particular sex, marital status, level of education, age, alternative activities, age of the farm and its location, as well as the difficulties. encountered in the practice of this activity.

Statistical Analysis
All the data collected was presented in proportion and subjected to a G-test using R version 3.0.0 software. Multiple Correspondence Analysis (MCA) and Hierarchical Ascending Classification (ACH) were also performed.

RESULTS AND DISCUSSION

In total, out of the 216 rabbit farmers who were counted between 2017 and 2019, the vast majority are nationals. They represent 92.4% of the actors in the rabbit sector. In the district of Abidjan nationals represent 92.3%, 96.3% of nationals are found in the South Comoé region and 90% in the ME region. The low presence of non-nationals in this activity could be explained by the fact that they consider rabbit breeding as a secondary activity. In fact, foreigners are more inclined towards other types of farming, which they find more profitable. These are cattle, sheep and poultry farming.
These observations are in line with those of Jaouzi et al (2006) in Morocco, Bocar (2011) in Senegal and Kimse et al (2017) in Côte d'Ivoire. These authors have shown that rabbit farming is practiced as a secondary activity because it is considered to generate little or substantial income. In contrast, the work of Guindjoumbi, (2007) in Senegal recorded a dominance of non-nationals in rabbit farming of more than 74%. This could be explained by the high proportion of French people for whom rabbit meat is an integral part of their culture (CLIPP, 2017a).
In all three localities, rabbit breeding is strongly dominated by men. Abidjan district, the ME region and the South Comoé region record respectively 93.8%, 87.5% and 92.8% of men against 6.2%, 12.5% and 7.4% of women (Figure 2).
The presence of men and women engaged in rabbit farming in all the localities surveyed would show that rabbit farming does not require a great deal of physical effort. However, despite the presence of both sexes, rabbit farming in Côte d'Ivoire is still dominated by men. Its results are in line with those obtained in Benin in 2018 by the FAO. In this country, a proportion of 90% men were recorded against only 10% women for all actors. This low participation rate of women could be justified by the fact that in Côte d'Ivoire and in several African countries, animal husbandry is more of a man's business. Women, on the other hand, are heavily involved in agricultural activities and trade.
In the age groups [20 to 40 years] and [41 to 60 years], the proportions of foreigners are 5.7% and 7.1% respectively, compared with 94.3% and 92.9% for Ivorians. The proportion of non-nationals over 61 years of age practicing this activity is twice as low as that of nationals, which is 66.7% **(Figure 3)**.
The presence of stakeholders of all ages in the practice of rabbit farming shows that this type of livestock farming is adapted to smallholders with or without land, as it requires little investment in infrastructure and equipment. As the rabbit is a herbivore, it can easily be fed with plant by-products (recycling of by-products) which are inexpensive and do not compete with human food. These results corroborate those of Kimse et al, (2017) who have shown that rabbit breeding can keep adolescents and the elderly busy. The low rate of elderly people found among non-nationals could be explained by their return to their respective countries. Indeed, for these populations who come from most of the neighbouring countries such as Mali and Burkina Faso to make money, they prefer to return home to live their last days with their family.

The results of this study show that among rabbit farmers 88.2% of nationals are married, compared to only 11.8% of non-nationals (Figure 4). As regards the category of single people, the proportion of nationals is 89.3% as against 10.7%.

This could be explained by the fact that nationals find themselves on an adventure at a very young age, far from their families and therefore left to their own devices. It becomes more than necessary for the latter to marry in order to benefit as soon as possible from help with household chores and finances. On the other hand, the nationals consider rabbit breeding as an additional means of making money to meet their daily needs. They give up the activity and devote themselves to their main activities when they get married. These findings corroborate those of Lukefar, (1998) and Masudi, (2008) who showed that rabbit farming is considered by urban livestock owners as a small business generating additional income.

The level of education of rabbit sector actors extends to tertiary level, including those who do not attend school. For all levels of education, nationals represent the largest proportion. The primary, secondary and higher education levels record respectively 86.7%, 93.7% and 95.2% of nationals. The latter account for 91.7% of those not attending school (Figure 5).

The high number of breeders who have frequented rabbit breeding could be explained by the fact that rabbit farming is a new breed in Côte d'Ivoire, it therefore requires the use of information and the application of technologies in order to succeed breeding management.

The same observation was made in Benin, where only 8.1% of farmers are illiterate (FAO, 2018).

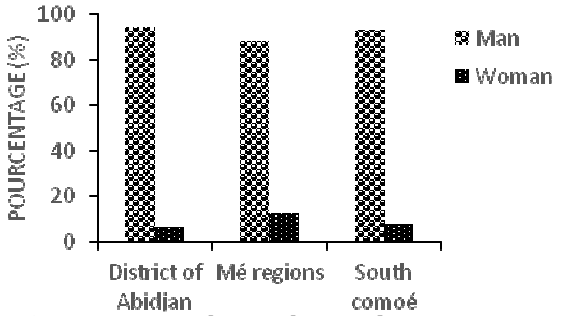

Figure 2 : Distribution by gender

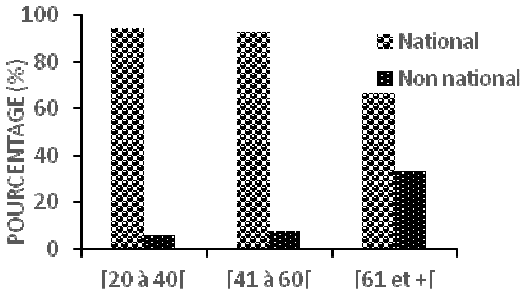

Figure 3 : Distribution by age class

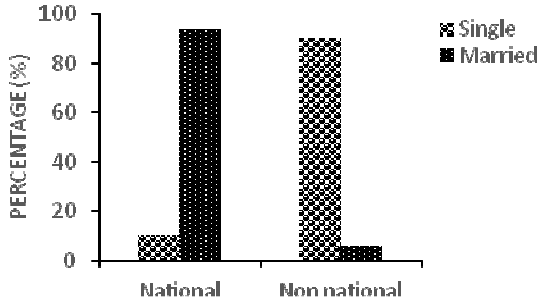

Figure 4 : Marital status of rabbit breeders

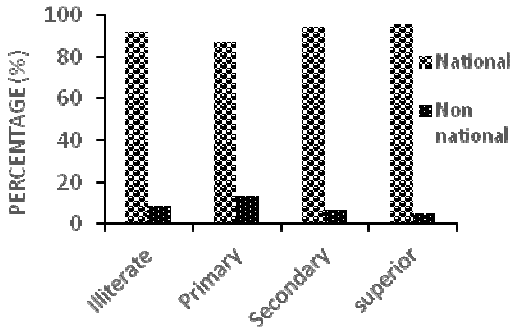

Figure 5 : Educational level of rabbit breeders

In the three localities surveyed, the vast majority of actors practicing rabbit farming as their main activity are nationals, only 5.7% are non-nationals and these are found in the district of Abidjan **(Table I).** Among the actors surveyed who have a second activity, nationals represent the highest rate, 92% compared to 8% for non-nationals.

This could be due to the unavailability of rabbit food. In fact, most of the farmers surveyed use industrial feed for their animals, yet it is subject to stock shortages at several times of the year. This results in huge financial losses for farmers who lose many rabbits. Thus, several breeders are abandoning rabbit farming. Those who continue are forced to practice it as a secondary activity These results confirm those of Kimse et al (2017) from work carried out in 2011 in Côte d'Ivoire. The latter showed that only 32% of rabbit farmers practiced rabbit farming full time. The same observations were made by Guindjoumbi, (2007) in Senegal, who noted that 77.14% of farmers were engaged in other activities in addition to farming.

During this work, it was found that more than half of the registered rabbit farms were established after 2013. The district of Abidjan alone accounts for 49.2% of the farms, followed by the LA ME region and that of SUD Comoé, which respectively account for 30.3% and 20.5% of the farms surveyed for each locality.

The period 2017-2018 saw the highest rate of rabbit farms created in the ME and SOUTH Comoé regions, 42.5% and 44.4% respectively. The district of Abidjan, for its part, recorded its highest rate of farms created during the 2014-2016 period with 40% of farms set up.
This would be due to the fact that several farmers have abandoned livestock farming because of the post-electoral crisis that shook the country between 2010 and 2011. During this period, it was impossible to feed the rabbits and also to sell them. It was not until 2014 that the state undertook the Strategic Plan for the Development of Livestock, Fisheries and Aquaculture 2014-2020 (PSDEPA). This has led to an increase in the creation of rabbit workshops. This plan aims to raise the level of coverage of national meat needs from 26% to more than 60% in 2020.

Table 1: Alternative activities to raising rabbits

Activities performed	Workforce by study area					
	District of Abidjan		South Comoé		Mé regions	
	Nationals	Non-nationals	Nationals	Non-nationals	Nationals	Non-nationals
rabbit farming only	37(37,7%)	4(44,5%)	4(9,5%)	0	13(22,4%)	0
rabbit farming + Crafts	23(23,5%)	1(11,1%)	3(7,1%)	0	13(22,4%)	2(28,6%)
rabbit farming + Farmers	5(5,1%)	0	14(33,4%)	0	8(13,8%)	4(57,1%)
rabbit farming + Traders	2(2%)	2(22,2%)	5(11,9%)	0	5(8,6%)	0
rabbit farming + Public service	13(13,3%)	2(22,2%)	11(26,2%)	0	8(13,8%)	0
Students	13(13,3%)	0	0	0	3(5,2%)	0
rabbit farming + Others	5(5,1%)	0	5(11,9%)	1(100%)	8(13,8%)	1(14,3%)
Total actors living solely from rabbit farming	37(37,7%)	4(44,5%)	4(9,5%)	0	13(22,4%)	0
Total actors with a second activity	61(62.3%)	5(55.5%)	38(90.5%)	2	45(77.6%)	7(100%)

CONCLUSION

The present study has made it possible to characterise the actors of the rabbit sector in the district of Abidjan, the Mé and South Comoé region. The vast majority of rabbit breeders are nationals, and very few foreigners involved in rabbit farming have been identified. Despite the presence of both sexes, Ivorian rabbit farming is dominated by men. The activity records the presence of all age groups. However, there are more married and single people among nationals. In all the localities, the number of rabbit breeders who have attended school has been higher. In the course of the survey, the largest number of rabbit workshops was established after 2013. However, rabbit farming remains a secondary activity for most farmers.
In view of the results, the social importance and the economic interest in this activity, it would be interesting to take measures to ensure a perfect mastery of production techniques. However, this would only be possible by looking at the way rabbit breeding is conducted as practiced by the actors of the sector.

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