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Socio-Economic Contributions of Equids in Rural and Urban Households: the Case of the Municipalities of Bambey Serere and Yeumbeul in Senegal

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Abstract
In Senegal, horsestthey represent significant socioeconomic potential in both urban and rural areas. Indeed, they play a role in several sectors of activity. To ensure that horses are given greater consideration in development policies, our article focuses on describing these activities and their impacts in on rural and urban areas. This study was conducted in the rural area of Bambey Serere in the department of Bambey and in the urban area of Yeumbeul, in the a suburb of Dakar. The methodology used for this study was based on a literature review, surveys, and interviews. A total of 75 people were surveyed in Bambey Serere and 50 in Yeumbeul. The results showed that the majority of respondents own horses in both the rural and urban areas. They are all literate in either French or Arabic. In rural areas, the use of horses for farm work in rural areas increases agricultural production. In urban areas, the work involves transporting materials and goods. The income generated from various income-generating activities helps improve their households' living conditions. Therefore, it is important to organize the work of horse-drawn vehicle drivers and to take their activities into account in public policies for agricultural and transportation development.

Keywords: horses, socioeconomics, rural areas, urban areas, Bambey Serere, Yeumbeul, Senegal

I. INTRODUCTION

Equines have played an important role in human life for centuries. They have been involved in many socio-economic activities, ranging from conquests to transport and labour, particularly in agriculture. Indeed, their strength and speed make farm work easier for farmers. Horses are used for ploughing, sowing, field maintenance, and the transport of harvest produce, agricultural inputs and people.

According to a stakeholder in the equine sector, nearly two hundred occupations have been identified in the horse industry.

In Senegal, equine husbandry is based on an estimated population of over 665,000 horses and 960,000 donkeys, and on national expertise that is recognised throughout the sub-region.

Equines are generally used in rural areas for domestic or non-commercial purposes, such as transporting water for human and animal consumption, at social events, or taking children to school (Valette, 2015). Whilst this contribution may not generate direct financial compensation, it does represent a form of saving on transport costs.

In addition, in rural areas, equines can be used to generate income by providing services (ploughing and transport) to farmers who do not have access to such resources. Their use in this way for farm work and the transport of people, agricultural produce, livestock and various goods is fairly well known. In the small-scale fishing sector, horses are the main means of transport for moving fish catches from boats to the fishing quay and local markets, as well as for transporting fishing equipment (engines, nets) (The Brooke, 2018).

Furthermore, horse-drawn carts are used to transport people to weekly markets and, on occasion, to provide medical evacuations to health centres in Ndao (2009). In urban centres, horses are used to transport people and to support certain commercial activities such as the transport and delivery of building materials (bags of cement, iron, etc.), the distribution of gas cylinders and drinks, the collection of household waste, and the transport of agricultural produce and fish to markets, etc. (Ndiaye, 2021).

On average, six or more people depend on the income generated by an animal's work, particularly that of horses (The Brooke, 2018). In addition to its social importance through sport and leisure, the horse plays an active role in the national economy through the number of jobs generated by horse-related professions. Among these professions, the trade in horses, veterinary medicines and tack is one of the mainstays of rural weekly markets (Ndao, 2009).

Assessing the contribution of draught horses to various sectors of the national economy and to people's livelihoods will provide a basis for arguing that these animals should be given greater consideration in livestock development policies.

It is within this framework that this article sets out to examine the roles and contributions of horses to the economies of rural households in both rural and urban areas. Specifically, the study aims to:

To identify, in urban areas, the characteristics of cart drivers and horse-drawn transport

To identify, in rural areas, the socio-economic impacts of a horse and, for both areas, to assess the income generated by equines.

The hypothesis is to demonstrate the economic contribution of horses to reducing household poverty.

The study was carried out in rural areas in the Serer villages of Bambey in the Bambey department, and in urban areas in the commune of Yeumbeul on the outskirts of Dakar.

II. Summary of the Literature Review

2-1 Socioeconomic Importance of Horses

The socioeconomic importance stems from the fact that horses provide a livelihood for many families through horse-drawn transportation, horse meat consumption, horse racing, the horse trade, and many other activities

Horses represent a rich genetic heritage, ensuring biodiversity and the diverse uses of equines (Kaboret et al., 2004). In the agricultural sector, horses provide livelihoods for many people, including horse breeders, horse-drawn carriage drivers (coachmen), horse-drawn tractor operators, farriers, grooms (equine caretakers), trail guides, artificial inseminators, animal health technicians, and others.

2-2 Uses of the Horse

The horse possesses excellent qualities that make it suitable for a wide range of uses. In addition to being easy to train, it is fast at work, agile, docile, and simple, easy, and precise to ride. It is used in both rural and urban settings (Toukam, 2008).

Horses, mules, and pack donkeys generate direct income in a wide range of economic sectors in both urban and rural areas. The sectors in which they are commonly used on a large scale include transportation (of goods and people), such as taxis (e.g., horse-drawn carriages called “gari” in Ethiopia or “tonga” in Nepal, in India and Pakistan); agriculture (e.g., plowing, transporting rice, coffee, cotton, and milk); tourism (e.g., donkeys and horses in Petra, Jordan, and Cairo, Egypt); construction (e.g., bricks and sand); mining (e.g., coal); the sale of goods and products (e.g., vegetables, grain, dried dung for fuel, manure, firewood, water, animal feed), as well as trash collection and recycling. In addition, they can be rented out, generating income for their owners through the rental and for users through the activities performed by these animals (e.g., transporting goods and people, plowing, etc.) The Brooke, (2015).

2-2-1 In rural areas

In rural areas, horses are primarily used for draft power in regions with light soil. The main agroecological zone is the peanut-growing region. Horses also serve as a means of transportation for household members and, for some, as a source of income through the provision of transportation services (The Brooke, 2018).

It should be noted that animal-drawn transportation was introduced through extension services, with the provision of credit to help with the purchase of carts. In addition, veterinary services provided support to certain animal owners, and most transportation technologies were disseminated through exchanges among farmers, artisans, and private workshops (Starkey and Faye, 1998; Fall, 2011).

2-2-2 In urban and suburban areas

Horse-drawn carts are used primarily to transport people, goods, trash, construction materials, gas cylinders, agricultural inputs, and agricultural products (Diouf, 2013). The use of horse-drawn vehicles (carriages, horse-drawn carts, donkey-drawn carts) in urban areas varies from city to city Horse-drawn carriages for passenger transport are mainly used in cities such as Rufisque, Thiès, and Louga, and are not found in Pikine or Touba. Donkey carts are mainly used for passenger transport in the Touba metropolitan area. Horse-drawn carts, on the other hand, are found in all cities and are primarily used for freight transport in Guediawaye, Pikine, Rufisque, and Thiès.

Passenger transport is primarily carried out in Louga, Diourbel, and Touba. It is often the case that the driver does not own the cart or carriage; however, he is responsible for the animal’s care (Brooke, 2018).

Furthermore, according to De Graaf (1992), animal traction becomes more attractive when agricultural activities are diversified and animals are used for purposes other than plowing fields.

The importance of horses becomes increasingly apparent as one move away from downtown Dakar or when visiting a smaller city like Rufisque, where the rise of the automobile has not yet reduced the number of horses used for urban transportation

The use of draft horses in urban areas is left to private initiative; only draft horses used in agriculture are the focus of national attention, given their role in the national agricultural extension program (Djimadoun, 1994).

Horse-drawn farming thus increases productivity (Lhoste et al. 2010) through efficient soil preparation, as well as the speed and productivity of human labor. It has also contributed to an increase in arable land, crop diversification, and a reduction in the drudgery of labor that has outpaced the rise in income; as a result, draft-animal farming is most often perceived as a means of improving farmers' living conditions (Abakar, 1990; Lhoste et al. 2010).

III. Materials and Methods

3-1 Description of the Sites

3-1-1 Bambey Serere:

The village of Bambey Serere is part of the rural community of Ngogom. The rural community of Ngogom was established in 1976 as part of the 1972 administrative reform. It comprises forty (40) villages with an average population density of approximately 285 inhabitants per square kilometer.

It is located in the extreme southwest of the Bambey department, in the Lambaye district. It is bordered to the north by the Lambaye rural commune, to the south by the Ndangalma rural commune (Ngoye district), to the east by the municipality of Bambey, and to the west by the Refane rural commune.

3-1-2 Yeumbeul (A suburb of Dakar)

The city of Yeumbeul comprises two district municipalities, Yeumbeul North and Yeumbeul South, established in 1996. It is located in the Keur Massar department (Dakar region) between 14° 46' 55″ north latitude and 17° 20′ 59″ west longitude.

Yeumbeul covers an area of 1,230 ha (Yeumbeul North: 830 ha and Yeumbeul South: 400 ha). The nearest towns are Nimzat, Bene Barak, Boune, Diamegeune, Thiaroye Gare, and Djidah Thiaroye Kaw.

3-2 Materials and Methods

The materials used in this study are as follows:
- questionnaires for data collection;
- interviews with managers;
- Sphinx V2 and Microsoft Excel 2013 software.

In Bambey Serer, 75 homesteads were surveyed. The three main neighborhoods of the village were selected. The homesteads to be surveyed were thus identified based on the essential criterion of owning at least one draft horse used for both horse-drawn transportation and farm work.

The decision to base the survey on plots rather than households stems from the fact that a single plot contains multiple households, while the equine animal used for farm work is unique to that plot. This guided our decision to focus on plots.

In Yeumbeul, 50 cart drivers were surveyed out of a total of 200 drivers identified through data from public and private veterinary services and an interview with the head of municipal revenue collection at the Yeumbeul City Hall.

The main issues concern the identification of the driver, the characteristics of the horses and the horse-drawn vehicle, the operating budget for the horse-drawn vehicle, the use of the revenue generated by the horse-drawn vehicle, and the challenges drivers face in carrying out this activity.

The survey method used was simple random sampling, with a random selection of 25% of cart drivers.

IV. Results and Discussion

4-1 Results

4-1-1 Bambey Serer (rural area)

4-1-1-1 The socioeconomic impacts of horses

The ages of the cart drivers range from 18 to 54 years. Married drivers make up the largest group, The results show that 46.7% of drivers completed elementary school, 45.3% completed Koranic studies, 6.7% completed middle school, 1.3% attended high school, and none completed higher education. The type of vehicle is a cart. Aside from farm work, the horse is used primarily to transport people (69.3%), followed by goods (13.3%) and animals (17.3%).

4-1-1-2 Income from the use of horses

Most cart drivers earn a daily income of between 4,000 F and 5,000 F (47 per cent), followed by those who earn between 3,000 CFA francs and 4,000 CFA francs (18 per cent). The remainder earn between 2,000 CFA francs and 3,000 CFA francs (1 US dollar is equivalent to approximately 550 CFA francs at a fixed exchange rate).

Income from work involving the use of horses accounts for a significant proportion of their total income. 38.7 % of respondents estimated that income from operating carts accounted for between 40 and 49 per cent of their total income, and 70% stated that this work provided 26.7 % of their total income..

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4-1-2 Yeumbeul Municipality (Urban area)

4-1-2-1 The socio-economic impact of horses

The data showed that all drivers are male and aged between 20 and 50. The 20–29 age group is the largest, accounting for 54%, followed by the 30–39 age group at 22%. he majority of drivers surveyed are single, accounting for 74%.

Several levels of education are evident within the sample. Thus, 44% of those surveyed attended a Koranic school and 42 % attended a French school, of whom 36 % have a primary school education and 6% have a secondary school education. The remaining cart drivers, accounting for 14%, have no formal education.

The majority of the cart drivers surveyed own their own carts, accounting for 78%; the remaining 22 per cent are employees, divided into employees of wholesale shops (12%), employees of hardware shops (4%) and employees who pay a fee to the cart owner (6%). For all those surveyed, cart driving constitutes their occupation.

In Yeumbeul, all horse-drawn vehicles in operation are horse-drawn carts.

Passenger transport takes place only occasionally; otherwise, it is the transport of goods and materials that occurs most frequently. Surveys have shown that carts belonging to wholesalers transport goods exclusively (12 %), carts

belonging to hardware shops transport building materials (4 %), and of the remaining 84 %, 4 % transport scrap metal whilst the rest (80 %) transport whatever comes their way that is transportable.

4-1-2-2 Income from the use of horses

The daily gross earnings of the cart drivers surveyed range from 4,550 to 13,600 CFA francs, with an average of 8,278 ± 2,236.43 CFA francs. Cart drivers with daily earnings of between 6,500 and 8,499 CFA francs are the most numerous (38 per cent) (see Figure 1).

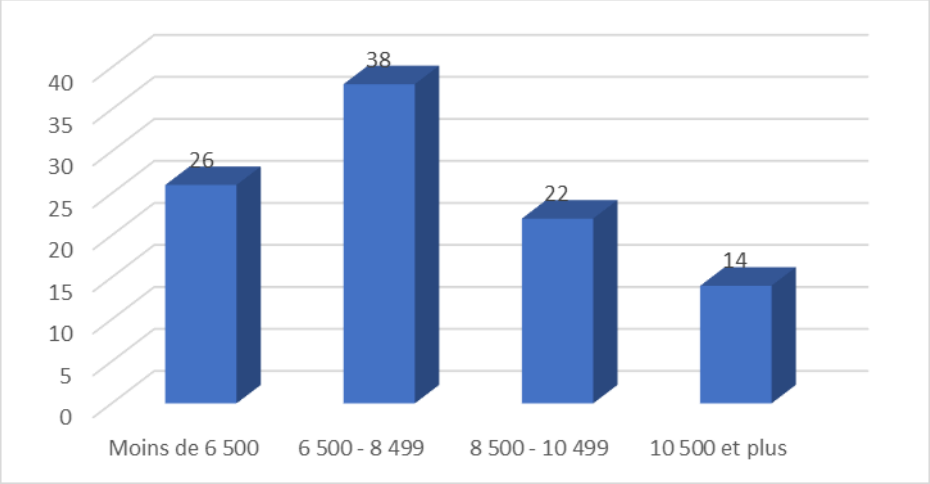

Figure 1: Breakdown of drivers' daily gross takings (en CFA francs = 555 Dollar USA)

Source: Author, based on data collected

The daily gross profit of cart drivers is irregular and ranges from 2,000 to 10,000 CFA francs, with an average of 4,816 ± 2,090.54 CFA francs.

Surveys show that 92 % of cart drivers derive all (100 %) of their income from operating a horse-drawn vehicle. Of the remaining 8 per cent of cart drivers, the contribution of the horse-drawn vehicle to their total income varies between 75 and 90 %.

The income generated by the carts is used primarily to pay for food and healthcare costs (100 % of respondents). Other uses of the income include children's school fees (18 % of respondents), rent (20 % of respondents), savings (54 % of respondents) and miscellaneous expenses (26 % of respondents).

4-2 Discussion

4-2-1 Bambey Serere

4-2-1-1 The socio-economic impacts of horses

The average age of drivers is 48 years. This is relatively high compared with the findings of The Brooke (2018), which reported an average age of 34 years, and those of Ly et al. (1998), whose study in the city of Thies found that 52 % of drivers were aged between 21 and 40.

All the drivers surveyed own their horse-drawn vehicles (100 %). This finding is relatively similar to the findings of The Brooke (2028). According to their study carried out in Touba, 93.3 % of drivers own their horse-drawn vehicles.

The presence of Bambey University has had an impact on passenger transport, which accounts for 69.3 %of transport activity; this is compounded by the organization of weekly markets, which involves people travelling to and from them. It should be noted that the villages of Bambey Serere are close to the university and to the town of Bambey, which is a rural town.

With regard to farm work, it is noted that horses are used 100 per cent of the time for sowing, 98.7 % for ploughing, 93.3 % for transporting agricultural equipment, 84 % for transporting the family to the fields, 54.7 % for transporting people to the fields and 97.3 % for transporting crops.

According to The Brooke (2018), in the municipality of Pass Koto, 100 per cent of equines are used for sowing, 36.7 % for ploughing, 95 per cent for transporting agricultural equipment, 95 % for transporting people to the fields and 95 % for transporting crops. These figures bear little resemblance to our results. In the absence of horses and donkeys in farm work, groundnut cultivation has fallen by 11.5 %, accompanied by a 0.3 % reduction in the average area under cultivation and an average yield decline of 50 kg. As for millet, 4.5 % of farmers have abandoned its cultivation, leading to a reduction in the average area under cultivation of 1.4 ha and a drop in yield of 250 kg.

According to The Brooke (2018), the area that could be cultivated without horse-drawn transport falls by around 75 % overall for groundnuts, with the smallest reduction in Ndangalma (35 %) and the largest in Pass Koto (88 %). These figures are higher than our data from the villages of Bambey Serere.

4-2-1-2 Income derived from the use of horses

The average daily income of a horse-drawn vehicle driver in the villages of Bambey Serere is 4,388 FCFA, which is relatively lower than the findings of The Brooke (2018) in the municipality of Touba; according to that study, the average daily income from a horse-drawn vehicle is 5,200 FCFA. According to Ly et al (1998), the average daily income in the town of Thiès is 1,050 CFA francs. The figure reported by Ly et al is very low compared with our finding.

The main unpaid services provided by equines are assessed on an annual average basis. For unpaid agricultural services, the average is 405,200 F, compared with 143,150 FCFA for family transport. According to The Brooke (2018), the unpaid services provided by equines are estimated at just under 400,000 F per household per year. Apart from the fact that the study was conducted on concessions, this result is similar to our data.

4-2-2 Yeumbeul Municipality (Urban area)

4-2-2-1 The socio-economic impacts of horses

Our findings revealed that horse-drawn transport is a predominantly male-dominated activity in the town of Yeumbeul. This is consistent with the findings of Séne (2014) and Mbow (2021). The average age of drivers is 27, and the most represented age group is 20 to 29, accounting for 54 %. This activity is more commonly undertaken by young people as the transport of goods requires a certain amount of physical strength.

4-2-2-2 Income from the use of horses

The carts generated a daily gross profit of 4,816 CFA francs. This is similar to the findings of Diouf (2013), who reported that the carts generated a daily gross profit of 5,770 CFA francs with an average daily turnover of 8,412 CFA francs.

However, our findings are relatively low compared with those of The Brooke (2018) in the municipality of Pikine, which show that carters' daily gross profit is 7,975 CFA francs. The presence of the trade union market in Pikine could explain this (more goods to transport, thus generating more income). In Yeumbeul, 92 % of cart drivers derive their entire income from operating horse-drawn vehicles, whilst the remaining 8 % derive between 75 and

90 % of their income from this source. These statistics are similar to those from The Brooke (2018), which show that in towns, the operation of horse-drawn vehicles – and in particular horse-drawn carts – provides employment and a regular source of income, accounting for between 70 and 100 % of total income.

The income generated by the carts is used for food and healthcare costs (100 per cent of respondents), children's school fees (18 % of respondents), rent (20 % of respondents), savings (54 % of respondents) and miscellaneous expenses (26 % of respondents). The results of this study demonstrate the contribution of draught horses to meeting households' basic needs and combating poverty.

V. Conclusion and recommendations

Horses provide employment opportunities for hundreds of people, and a large number of sectors in both rural and urban areas rely on their draught power. Draught horses make a huge contribution to alleviating hard labour in rural areas.

In the villages of Bambey Serere and the commune of Yeumbeul, horse-drawn transport is provided exclusively by horses, and the average daily income from a horse-drawn vehicle is quite substantial compared with other sources of income. This has therefore led to the conclusion that horse-drawn transport provided by draught horses helps to combat poverty amongst households. The ways in which the income generated by this activity is used confirm our initial hypothesis.

This sum is used to cover a wide range of expenses, such as: food, school fees, medical costs, etc.

In villages, during agricultural work, draught horses make a considerable economic contribution. In the absence of draught power, a reduction in the area under cultivation is observed. Consequently, the yield of most crops declines. The use of horse-drawn vehicles in urban areas not only provides a source of employment and a steady income for some, but also offers an opportunity for people who have migrated from rural areas to earn additional income during the dry season, enabling them to support the families they have left behind in their villages.

Recommendations are put forward to ensure that draught horses are provided with the best possible conditions to enable them to be used to their full potential:

- Set up associations of horse-drawn vehicle drivers;
- Formulate and implement advocacy measures to ensure that draught horses are given greater consideration in public policies on the development of agriculture, livestock farming and transport;

To local authorities, veterinary services and the police: effective enforcement of the laws and regulations governing the rearing and use of horses; allocation of a portion of the taxes collected towards improving parking areas for horse-drawn vehicles.

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References

[1] Vallette D., 2015.Travailleurs invisibles. Les contributions économiques des chevaux, mulets et ânes de trait aux moyens d'existence. The Brooke.

[2] NDIAYE M., 1978. Contribution à l'élevage du cheval au Sénégal Thèse : Méd. Vét. : Dakar ; 15

[3] The Brooke 2018, Evaluation de la Contribution économique des équidés de trait au Sénégal

[4] Ndao M., 2009. Contribution à l'étude de la commercialisation du cheval au Sénégal. Thèse: Méd. Vét. Dakar ; 129p.

[5] Kaboret Y.Y.; Abiola F.A.; Assane M., 2004. Développement de l'élevage du cheval en Afrique subsaharienne : une contribution à la création d'emplois. Texte du discours de la rentrée solennelle de l'EISMV. 1 RASPA., 1(1) : 91-95.

[6] Toukam C.M.W., 2008. Impact économique de la peste équine au Sénégal : cas de l'épizootie de: Méd. Vét. : Dakar ; 45

[7] Starkey P.; Faye A., 1988. Animal traction for agricultural development: proceedings of the third workshop of the West Africa Animal Traction Network.-Wageningen: CTA.-475p.

[8] FAYE A., 1988 Le rôle des équidés dans le développement rural en zone sahélo-soudanienne du Sénégal : le cas du cheval dans le sud du bassin arachidier. Montpellier : CIRAD/MESRU-Economie de la Mécanisation en Région Chaude.-12p.

[9] Fall M., 2011. La sellerie pour les chevaux de trait au Sénégal : Etats des lieux et perspectives. Thèse : Méd. Vét. : Dakar ; 156p.

[10] De Graaf J., 1992: The profitability of animal traction: « Increasing agricultural production by using animal traction: a rural development puzzle » (116-117). In: Starkey P., Mwenya E., et Stares J. (ed.). Improving animal traction technology, first workshop, 18-23 January 1992, ATNESA, Lusaka, p.116-117.

[11] Djimadoun J., 1994 : Dominantes pathologique chez les chevaux de trait urbain dans la région de Dakar : résultats d'une enquête clinique. Thèse : Méd. Vét. : Dakar ; 19.

[12] Lhoste et al. 2010 Dumas R. et Lhoste Ph., 1966. Variations du poids vif et du rendement en viande de bœufs zébus de l'Adamaoua au cours de la saison sèche. Revue Elev. Méd. Vét. Pays trop, Vol. 19, N°4 (573-579).

[13] Abakar A. I., 1990: Section 10. Regional and Miscellaneous: la culture attelée au Tchad (282-284). In : Lawrence P.R., Lawrence K., Dijkman J.T., and Starkey P. H. (ed.), Research for development of animal traction in West Africa, proceedings of the fourth workshop of the West Africa animal traction network, 09 to 13 July, Kano

[14] Ly C. B. Fall, B. Camara, C.M. Ndiaye. 1998. Le transport hippomobile urbain au Sénégal. Situation et importance économique dans la ville de Thiès. Revue Elev. Med. Vet. Pays Trop. 1998, 51 (2): 165-172

[15] Sene A., 2014. Etude de la prise en charge du bien-être des chevaux utilisés dans le transport hippomobile dans la ville de Thiès au Sénégal : état des lieux et contraintes. Mémoire de fin cycle, ISFAR ex ENCR, Bambey ; 40p.

[16] Mbow M., 2021. Etude du bien-être des chevaux utilises dans le transport urbain dans la ville de Louga, Sénégal. Mémoire de fin de cycle, ISFAR ex ENCR, Bambey ; 77p.