

# **The role of livestock functions in the well being and development of Timor-Leste rural communities**

**E M V Bettencourt, M Tilman\*, V Narciso\*\*, M L S Carvalho\*\*\* and P D S Henriques\*\*\*\***

*ICAAM and Department of Veterinary Medicine, University of Évora, Portugal*

[emvb@uevora.pt](mailto:emvb@uevora.pt)

*\* Universidade Nacional Timor Lorosa'e, Dili, Timor-Leste*

[mfvista\\_5@yahoo.com](mailto:mfvista_5@yahoo.com)

*\*\* Independent research, Portugal*

[vandanarciso@gmail.com](mailto:vandanarciso@gmail.com)

*\*\*\* ICAAM and Department of Economics, University of Évora, Portugal*

[leonor@uevora.pt](mailto:leonor@uevora.pt)

*\*\*\*\* CEFAGE and Department of Economics, University of Évora, Portugal*

[pdamiao@uevora.pt](mailto:pdamiao@uevora.pt)

## **Abstract**

The livestock species play very important economic and socio-cultural roles for the wellbeing of rural households which include food supply, source of income, asset saving, source of employment, soil fertility, livelihoods, transport, agricultural traction, agricultural diversification and sustainable agricultural production. The objective of this work was to identify and characterize the different roles that livestock species play in rural communities of Timor-Leste. Special attention was given to the socio cultural functions. The primary data used in this study was a questionnaire survey made in 2011 in three rural communities in the district of Bobonaro and as secondary source the numerous studies made about the livestock species of Timor-Leste.

The results showed that livestock production and livestock species play important economic functions, as well as social and cultural roles for rural communities of Timor-Leste. Livestock species are a very important driver for the development and wellbeing of rural communities of Timor-Leste and livestock policies should incorporate not only economic but also the social and cultural roles of livestock species.

**Keywords:** *economic, household, leisure, sociocultural*

## **Introduction**

The livestock species play very important economic, social and cultural functions for rural households in developing countries once they contribute to improve income and wellbeing of the farm family. Livestock helps on food supply, family nutrition, family income, asset savings, soil productivity, livelihoods, transport, agricultural traction, agricultural diversification and sustainable agricultural production, family and community employment, ritual purposes and social status (Moyo et al 2010).

Livestock functions can be classified in several ways. According to FAO (ILRI 1995), two widely used classifications are based on the kinds of output produced (food, cropping inputs and raw materials) or in the uses (household consumption, supply of inputs, cash income, savings and investment and social and ritual roles) in which these outputs are put on. Another classification divides livestock functions in economic (source of cash income, mean of savings accumulation and investment, economic status), household use (feeding, transportation, fertilizer and animal draught), sociocultural (social status, paying bride wealth, providing animals for communal feasts or sacrifices) and leisure (horse racing, cock fighting, bullfight, hunting).

Livestock production in Timor-Leste is predominantly familiar and mostly integrated into the way of life of rural families and communities. Since long ago livestock plays several roles that are documented since the late nineteenth century. The main livestock species include chickens, pigs, goats, horses, cattle, buffaloes and sheep. The aim of this work was to identify and analyze the functions that livestock play for rural communities of Timor-Leste. After this introduction, in the second part material and methods are set, in the third section the results and discussion are done and in the final part the main conclusions are drawn.

## **Methodology**

The data used were obtained through primary and secondary sources. The primary data was collected in 2011 through a questionnaire survey of 101 farmers. Farmers were selected by convenience sampling in which the role of the traditional authorities, head of Suco (village), was fundamental and decisive. The survey was conducted in three rural sucos, Tapo-Tas – mountain area, Tapo-Memo – irrigation plain and Aidabaleten - coastal area, of the district of Bobonaro. The questionnaire characterized the economic and sociocultural functions that livestock production plays in the life, wellbeing and development of rural households and communities.

The secondary sources used come from historical and recent publications and official statistics of Timor-Leste, and are complemented by the invaluable field experience and knowledge of the authors. The performed analysis was essentially descriptive and qualitative, highlighting the functions that livestock still performs in the rural communities of Timor-Leste.

## **Results and discussion**

Agriculture is the main economic activity in the three sucos selected, more than 90% of households rear livestock species, being chicken, pigs, goats and cattle the most important, and more than 70% are involved in crop activities, being maize and cassava the most relevant.

The data obtained from the farmers survey and secondary sources were organized in four items: economic, household, sociocultural and leisure functions.

### **Economic**

Livestock is an important source of monetary income, and a way of capital accumulation and savings for Timor-Leste rural population. This capital is mobilized and employed anytime there are household necessities. The livestock species that contribute most to household monetary income of the three sucos surveyed are pigs, chickens, cattle and goats, being buffalos residual. Regarding selling livestock production, the households that are involved in livestock rearing sell sheep, goats, chickens, cattle, pigs and buffalos in that order (Table 1).

**Table 1:** Percentage of households that rear livestock and sell

Species	Tapo-Tas	Tapo-Memo	Aidabaleten	Total
Chickens	43.5	78.6	55.2	60
Pigs	34.5	77.8	44.4	51.8
Goats	100	63.2	65.2	66.7
Cattle	66.7	35	70.4	58.8
Buffalos	25	0	66.7	46.7
Sheep	100	0	75	77.8

When livestock is compared with other sources of household income, the majority of the households ranked livestock as their most important second and third source of income, but ranked fourth as the first source of income (Table 2).

**Table 2:** Households ranking of livestock as a source of income

As source of income	Tapo-Tas	Tapo-Memo	Aidabaleten	Total Sucos
1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>th</sup>	2 <sup>nd</sup>	4 <sup>th</sup>
2 <sup>nd</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>
3 <sup>rd</sup>	1 <sup>st</sup>	1 <sup>st</sup>	3 <sup>th</sup>	1 <sup>st</sup>

Cash income received from livestock selling and from other economic activities is used to pay the school of children, to buy clothes, tools and food and for 36.3% of the households to buy new animals to rear.

## Household

Regarding regular consumption of meat, the majority of the population eat meat only once a week (53.9%) and 31.4% twice a week (Table 3). Tapo-Memo population has higher consumption of meat than the other two sucos because it is a more urban suco. These overall results are better than the ones obtained by Deus (2011) for Letefoho sub-district, where the majority of the population eat meat once a month (47.7%) and 29.1% twice a week. These modest results confirm some of the descriptions made during Portuguese colonial period that there were significant livestock numbers, and despite being an important source of protein, the population rarely consumed their animals at home, except during funerals or feasts.

**Table 3:** Number of times that households eat meat per week

Times per week	Tapo-Tas	Tapo-Memo	Aidabaleten	Total
0	0	0	20	6.9
1	74.3	25	60	53.9
2	17.1	65.6	14.3	31.4
3	8.6	6.3	5.7	6.9
4	0	3.1	0	1
Total	100	100	100	100

The most used livestock species for self-consumption by the households that rear livestock are chickens, goats and pigs, while sheep, buffalos and cattle are the species less utilized (Table 4).

**Table 4:** Percentage of households that rear livestock and use for self-consumption

Species	Tapo-Tas	Tapo-Memo	Aidabaleten	Total
Chickens	39.1	89.3	65.5	66.3
Pigs	3.4	55.6	37	31.3
Goats	33.3	63.2	34.8	46.7
Cattle	9.5	25	18.5	17.6
Buffalos	25	50	11.1	20
Sheep	0	0	12.5	22.2

The old descriptions referred that milk, mixed with rice or crushed corn, was consumed as a tasty delicacy and that the milk left was sold (Martinho 1936). At present, milk from local production is not drunk for safety reasons, while egg consumption is restricted, mostly due to the fact that in the free ranging system it is often difficult to find and collect the eggs.

Animal manure is widely used to fertilize the different crops. The use of draught animals in crop activities, buffalos and horses, is mainly confined to land preparation of rice fields while tools are used in all other crops and other cultural operations. For instance, the households of Tapo-Tas only use tools in land preparation, while in Tapo-Memo and Aidabaleten, where the rice is an important crop, draught animals are more used (Table 5). In these two sucos, the majority of the animals are owned by the households. For Baucau District, Silva (2011) found that around 52.1% of farmers use buffalos and 24% use horses in rice land preparation.

**Table 5:** Percentage of households using animal draught power

	Tapo-Tas	Tapo-Memo	Aidabaleten	Total
Animal draught	0	40.6	22.9	20.6
Owned	0	84.6	100	90.5
Rented	0	15.4	0	9.5

During the Portuguese colonization and Indonesian occupation, several unsuccessful attempts were made for the introduction and to reinforce the usage of animal draught, not only for rice but also for the other agricultural activities such as maize. Since long ago ploughs are not used by the rural population of Timor-Leste once the country is outside the diffusion area of the Chinese plough, that reached Philippines and North

Borneo, and also from the Indian plough, that affected Java and Bali (Thomaz 1973, OXFAM 2004).

As a mean of transportation, horses are still used, mainly in mountainous regions, but much less than were in the past. However, when families do not have another mean of transport, they use the animals mainly for cargo.

### **Socio-cultural**

Livestock ownership, specially cattle and buffalos, is an index of social wealth, an outward sign of wealth, the greatness of a King or a simple man was, and is, assessed by the size of his herd (Valdez 1929; Artur 1926; Costa 1950; Silva 1954; Friedeberg 1974; Cruz 2003; MED 2008).

According to Cinatti (1987), in Timorese society, the buffalo is one of the most useful/helpful animals. The buffalo is a “multi-task” animal: feeds, works, gives prestige and is used in ceremonies. During the last century, several authors mention the buffalo as the sacrificial animal per excellence in agriculture, weddings and burial rituals (Valdez 1927; Martinho 1936; Thomaz 1974; Sá 1963). Martinho (1936) refers that “estilos” of "Ocoí-Mate" are the cause of slaughter of some thousands of buffalos, pigs and goats around the year. Even nowadays buffalos are part of the “barlaque” and are indispensable in “estilos” of Ocoí-Mate. The *estilo* of "Ocoí-Mate" is a memorial service for departed souls. Animistic and superstitions say that the soul of the deceased does not feel quiet if relatives, in funeral ceremonies, do not sacrifice a few buffalos.

Buffalo meat is considered to be of inferior quality than cattle meat but in Timor-Leste it is appreciated and used extensively in most of the territory. The most valuable buffalos are those with the biggest horns and not with the largest size and volume of the body.

One of the social functions is the use of animals for the fulfilment of a set of rituals and social obligations (funerals, ritual slaughter and bride wealth) of families and communities, either formal or informal. For the three sucos studied, the animals that are more relevant for traditional ceremonies and festivities “estilos” are pigs and cattle followed by chicken and goats. Cattle are more important for Tapo-Tas and Aidabaleten, while pigs and chicken are for Tapo-Memo (Table 6). Regarding the households that are involved in livestock rearing, 51.5% use cattle, 47.0% pigs, 46.7% goats and 30.0% chickens. The animals used are cooked, often in a special way, and shared by participants.

**Table 6:** Percentage of households which use livestock animals for ceremonies and festivities

Species	Tapo-Tas	Tapo-Memo	Aidabaleten	Total
Chickens	17.4	64.3	6.9	30
Pigs	31	74.1	37	47
Goats	33.3	63.2	34.8	46.7
Cattle	47.6	55	51.9	51.5
Buffalos	0	0	11.1	6.7
Sheep	0	0	12.5	11.1

Among the several ceremonies performed around the year, it is worth to highlighting the “*Finados*” celebrated by 99% of respondents followed by the day of All Saints (Table 7).

**Table 7:** Rituals performed every year (% of households)

	Tapo-Tas	Tapo-Memo	Aidabaleten	Total
Build and inaugurate sacred house	28.6	15.6	22.9	22.5
Remove mourning (desluto)	25.7	28.1	20	24.5
All Sould’s day (finados)	100	100	97.1	99
All Saints day	68.6	93.8	71.4	77.5
Funerals	34.3	18.8	22.9	25.5
Weddings	17.1	15.6	11.4	14.7
Call the rain	60	37.5	17.1	38.2
Burning grass	11.4	28.1	8.6	15.7

Almost all families celebrate some kind of worships before or/and after harvest of the main agricultural activities and they do that mainly as a household or family ceremony and more than half of them as a larger communal ceremony (Table 8).

**Table 8:** Type of worship made (% of households)

	Tapo-Tas	Tapo-Memo	Aidabaleten	Total
Worships before and after harvest	97.1	93.8	100	97.1
Individual worship	94.1	93.8	97.1	95
Family worship	73.5	59.4	94.3	76.2
Community worship	67.6	50	51.4	56.4

Beside the main vegetable production, cattle and buffalos are also subject to worship, mainly in Tapo-Tas which is in the mountain and the most rural of sucos (Table 9).

**Table 9:** Main agricultural activities subject to worship (% of households)

	<b>Tapo- Tas</b>	<b>Tapo- Memo</b>	<b>Aidabaleten</b>	<b>Total</b>
Maize	100	96.9	85.7	94.1
Rice	23.5	100	94.3	72.3
Coffee	64.7	6.3	2.9	24.8
Cattle	52.9	6.3	11.4	23.8
Buffalos	26.5	3.1	8.6	12.9
Fishing	8.8	6.3	60	25.7

Rural communities still perform a set of rituals with a “propitiatory” nature (before sowing, after harvest, in the case of pests, to ask for rain or to ask to stop the rain ...) and even technological innovations from outside the community have to be integrated into the local culture, such as the ritual of *Fasi karau ain* (washing the feet of the buffalo) that in the district Viqueque continues to be done, not only to animals but also to tractors (Miranda 2011).

Beyond the prayers, songs, dances and other gifts as gold, money and areca, the people proceed to the sacrifice of animals to offer to the spirits or to see in their bowels how the harvest will be.

This practice highlights the importance of the investment made in agriculture, despite the low number of animals that each family has, they do not fail to meet their ritual obligations, providing animals for communal feasts or sacrifices, in order to try to ensure a good harvest. As gift/sacrificed in ceremonies, the animals most used are chicken and pigs (Table 10). The buffalos are used only by about 3% of the households.

**Table 10:** Gifts offered in the worships (% of households)

	<b>Tapo- Tas</b>	<b>Tapo- Memo</b>	<b>Aidabaleten</b>	<b>Total</b>
Cock and hen	88.6	96.9	91.4	92.2
Pigs	65.7	84.4	80	76.5
Goats	22.9	9.4	48.6	27.5
Eggs	37.1	18.8	68.6	42.2
Cattle	11.4	3.1	11.4	8.8
Buffalos	5.7	3.1	0	2.9
Palm wine (tua mutin or tua sabu)	25.7	15.6	8.6	16.7
Areca and bétele	77.1	90.6	60	75.5
Money	45.7	31.3	54.3	44.1
Gold	14.3	12.5	5.7	10.8

To fully understand the social role of livestock, it is also important to consider the role that gender plays in livestock production. Treating the pigs and chickens is considered a women's work, on the opposite the guarding of buffalos and cows, which are male property, is considered a man's job. The same division applies to their commercialization, women are in charge of small animals and men of big ones (our

observations and Miranda 2011). In rituals, there are animals that have a feminine symbolic value and others with masculine symbolic value, for instance pigs are considered feminine social goods while buffalos and cows are masculine social goods.

Comparing these findings with the past documents, it seems that buffalos are losing importance. According to our informants, the decreasing use of buffalos in ceremonies is not because they are not important and desirable but due to the fact that they are very expensive and only affordable on very rare occasions and for very few families. This idea confirmed the description made by Claudine Friedberg: she mentioned that “During my presence, these rituals were no longer performed, undoubtedly because one no longer could afford them” referring the ‘cooling’ ritual in which a piglet and a goat were traditional slaughtered (Friedberg 1989).

## **Leisure**

Some of the livestock species have a leisure value; once they were used for racing, hunting and fighting games and raw materials for handicrafts. During the Portuguese colonial period horse racing became very pleasing to the Timorese people and the descriptions made say that bets were made, in which participated local and European people, involving sometimes appreciable amounts. Horses and riders entered the racetrack under standing ovations and assistants accompanied the running of the race with great enthusiasm, especially the punters or betters (Figueiredo 2004). Nowadays, horse racing is regaining its importance as a driver for tourism and economic development with the construction of a hippodrome in Batugadé (border to West Timor) (Narciso 2012).

Deer hunting was done in the past and in some zones is still done nowadays. In the past, horses were used in this activity in which animals were hunted with a javelin. The old descriptions tell us about the ability of hunters in handling simultaneously the horse and the javelin when tracking down and killing the deer.

Cock fighting is one of the older traditions of Timor-Leste and one of the games preferred by Timor-Leste people from all regions. It is a popular masculine pastime where women are not allowed to participate (Hicks 2001). Cockfights are held on any social occasion when men get together, from the spontaneous to more formal occasions and are part of many weekly markets. In the past, cocks represented always two factions or two villages and the cocks not only fight for their owners, but also for the villages or kingdoms. There were two fights, one between the two cocks and the other between the bets made by people belonging to the two factions.

It is a gambling game and a very important leisure activity in Timor-Leste. It is a fight to first blood, and is very quick, 10-20 seconds from the wind-up to first blood, and there is always someone on site, to stitch up the loser and he can go home to the cooking pot or to stud. East Timorese people say gambling is in their blood after centuries of cock-fighting and many times lose all their belongings in an afternoon of betting in cock fighting (Braga 1935; Fontoura 1940; Sá 1963).

Cocks are admired in Timor because of their courage and perseverance and the courage of a man is sometimes compared with that of a cock, while a coward is called a hen. The cock fighter is inseparable from his owner and it is common to see men carrying cocks

under their arms as precious possessions. Beside the fact that many drawings *tais* include the cock, its representation in the coins (10 *cêntimos*) is a tribute to the culture and to the courage of Timorese's people to fight over time to achieve their independence. The portuguese poet Ruy Cinatti, also in a tribute to Timor-Leste culture make the following poem about cock fighting.

<b><i>A Luta de Galos</i></b> ( <i>desporto número um dos Timorenses</i> ) <i>Galo doido, meu brinquedo,</i> <i>Aninhado nos meus braços.</i> <i>Sinto o meu coração preso</i> <i>Só de pensar no combate.</i> <i>Pintei-lhe de verde as penas</i> <i>Só a pensar no combate.</i> in " <i>Um Cancioneiro Para Timor</i> " – Ruy Cinatti 1996	<b>The cock fighting</b> (Timorese number one sport) Cock crazy, my toy, Tucked away in my arms. I feel my heart stuck Just thinking about the fight. I painted its feathers of green Just thinking about the fight
--	--

The old description says that the Timor-Leste people, with their patience and perseverance, manufactured small articles from the black and white horns of the buffalos, such as dolls, utensils of ménage and adornments, which are a demonstration of their skills and artistic sense (Fontoura 1940; Braga 1935). Nowadays there are some handcrafts made with animal raw materials such as skins and horns, used to makedrums and other artifacts.

## Conclusions

- Our research and the literature written about Timor-Leste identify that livestock had in the past and has nowadays different functions for Timor-Leste rural households. These functions are very important for the wellbeing of rural households and livestock can be used as a driver for rural development.
- In addition to the economic, household and leisure functions, our observations, interviews and talks with local people emphasized the importance given by households and communities to the sociocultural function. Many of these functions are often ignored when estimating the total contribution of livestock to wealth and wellbeing of Timor-Leste rural households.
- The value of the livestock sociocultural functions are difficult to evaluate and specific and additional research is needed to better understand and assess the role of livestock, to quantify its monetary and non-monetary values, and to find out the best integrated policies able to promote the wellbeing and the development of rural communities of Timor-Leste.

## References

- Artur R 1926** Política, Administração e Trabalho na Província de Timor – A organização agrária, Boletim da Agencia Geral das Colónias, ano II, nº 9, Lisboa, pp: 53-86.
- Braga P 1935** *A Terra, a Gente e os Costumes de Timor*. Cadernos Coloniais Nº7, Edições Cosmos, Lisboa.
- Cinatti R 1987** *Motivos artísticos Timorenses e a sua integração*, Lisboa.
- Cinatti R 1996** “*Um Cancioneiro Para Timor*”, *Editorial Presença*, Lisboa.
- Costa M 1950** “Pecuária, Defesa Nacional”, Ano xvii, n.º s 193 – 194, Lisboa, pp: 47- 48.
- Cruz C J 2003** “Livestock Development in East Timor, in Agriculture: New Directions for a New Nation - East Timor (Timor-Leste)”, Edited by Helder da Costa, Colin Piggin, Cesar J da Cruz and James J Fox, ACIAR Proceedings No. 113.
- Deus C C 2011** “Impacto do desempenho da Cooperativa Café Timor na satisfação e qualidade de vida dos seus membros”, Tese de Mestrado em Gestão, Universidade de Évora, Évora.
- Figueiredo F 2004** Timor a presença Portuguesa: 1769-1945, Dissertação de Doutoramento em História, Faculdade de Letras, Universidade do Porto.
- Fontoura A 1940** “O trabalho dos Indígenas de Timor”, *Congresso do Mundo Português*, Volume XVI, Tomo 3, III Secção, Lisboa, pp: 14- 95.
- Friedberg C 1974** “Agricultures Timoraises”, *Etudes rurales*, Nº 53-54-55-56, pp: 375-405.
- Friedberg C 1989** *Social relations of territorial management in light of Bunaq farming rituals*, In: Bijdragen tot de Taal-, Land- en Volkenkunde, Rituals and Socio-Cosmic Order in Eastern Indonesian Societies; Part I Nusa Tenggara Timur 145 (1989), no: 4, Leiden, 548-563. This PDF-file was downloaded from <http://www.kitlv-journals.nl>.
- Hicks D 2001** “Blood and feathers – masculine identity in East Timorese cockfighting”, World and I.
- ILRI** (International Livestock Research Institute) **1995** *Livestock Policy Analysis*, ILRI Training Manual 2, ILRI, Nairobi, Kenya, pp: 264
- Martinho J S 1936** “Medidas tendentes à protecção e selecção das espécies pecuárias existentes na Colónia e desenvolvimento daquelas que melhor satisfaçam a indústria pecuária, em primeira conferência económica do império colonial português”, 3ª Comissão, Ministério das Colónias, Lisboa, pp: 1–10.
- MED** (Ministério da Economia e Desenvolvimento) **2008** “Relatório de Estado da Nação”, Volume IV, Relatório de Situação de Sector, Grupo da Produção, Díli, Timor-Leste.
- Miranda S 2011** “Género e Agricultura em Quatro Distritos de Timor-Leste (Bobonaro, Ermera, Manatuto e Viqueque)”, Secretaria de Estado para a Promoção da Igualdade, Díli, Timor-Leste.
- Moyo S and Swanepoel F J C 2010** “Multifunctionality of livestock in developing communities” in The Role of Livestock in Developing Communities: Enhancing Multifunctionality, edited by Frans Swanepoel, Aldo Stroebel and Siboniso Moyo, Co-published by The Technical Centre for Agricultural and Rural Cooperation (CTA) and University of the Free State.
- Narciso C 2012** Corridas de cavalos (Horses racecourse stadium at Batugadé, in Bobonaro, East Timor). [http://www.youtube.com/watch?v=yBtVdJG7\\_1w&feature=plcp](http://www.youtube.com/watch?v=yBtVdJG7_1w&feature=plcp) (consulted 2012.06.30).
- OXFAM 2004** “Overview of the rice sector in Timor-Leste”, OXFAM, Díli.
- Sá A 1963** *Timor*, Sociedade de Geografia de Lisboa, Semana do Ultramar, Reeditado por TimorAgri.
- Silva H 1954** “Panorama Pecuária de Timor”, *Revista de Ciências Veterinárias*, Vol. XLIX.: 348–349, pp: 157–187.
- Silva J 2011** “Desenvolvimento e recursos humanos no sector da orizicultura no distrito de Baucau em Timor-Leste”, Dissertação de Mestrado, Universidade de Évora, Évora.
- Thomaz L 1974** “O programa económico de Timor”, *Revista Militar*, Ano XXVI, nº 8/9, Lisboa, pp:1-10.

**Thomaz L F R 1973** "Vida Rural Timorense", *Geographica*, ano IX, Lisboa, Sociedade de Geografia, n° 33, pp: 3-26.

**Valdez J A 1927** "A Pecuária de Timor", Boletim da Agência Geral das Colónias, ano III, Lisboa, Agência Geral das Colónias, n.º 19, Janeiro, pp: 85-88.

**Valdez J A 1929** "Timor e a sua pecuária", Boletim da Agência Geral das Colónias, Ano V Agência Geral das Colónias, Lisboa, n° 54, pp: 55-71.

*Received 6 March 2014; Accepted 10 March 2014; Published 5 April 2014*