

## The social impact of blue tongue disease in Albania

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### Abstract:

*Among the data obtained during the study of the social impact of blue tongue disease, the most important aspects of this impact were selected to address in this paper. The results display a significant social impact of the blue tongue illness, which is concretized with some key indicators such as experiencing three sensations (disturbance, anxiety, stress) in over 40% of farmers, transmitting disease boredom to over 30% of farmers' women, the highest score of the state of boredom by over 70% of farmers and over 50% of them reflected the disease situation in mumbling within the family and harming family harmony (but none in tracking programs television), over 60% of farmers have not reduced their interest in childcare and over 70% of children have missed a day at school, as well as the worsening of family well-being as a result of illness in over 30% of farmers.*

**Key words:** social impact, state of boredom, school attendance, nervousness, well being, before and after illness, community life.

### INTRODUCTION

The time we live is characterized by a wide-ranging "epidemiological globalization", which affects the combination of economic and social forces, and even scientific and political

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forces, resulting from the emergence and reappearance of animal diseases. Social impacts can be expressed as indirect effects of health, either as changes in behavior, or on social values and status. They may feel at individual, family and community level (Evans B., 2006).

Disease impacts can be direct and indirect, and the latter should be the focus of work when considering the social impacts of animal diseases. Although it is not easy to determine, these indirect impacts are mostly the result of exposure to stress and long-term anxiety arising from calamities and financial difficulties associated with loss of income, or from feeling of failure or guilt. Of course, the social group which is most vulnerable to stress and anxiety and their consequences to behavior is the one who reacts first to the issue, dealing with elements of emergency recovery and management. Specifically, farmers, whose prolonged hours of work, who face exciting circumstances, difficult decisions, and the prospect of depopulation and annihilation of animals, can profoundly be affected in their mental and emotional health (United Kingdom Department of Health, 2002). Undoubtedly, these impacts constitute the social impacts of the disease.

The social impact of the blue tongue disease is generally not very well studied and written about, and this paper is an attempt to identify some indicators of the impact of the disease on the social life of farmers.

## **MATERIAL AND METHODS**

Some 342 farmers from the 9 regions of Albania (Berat, Debar, Elbasan, Fier, Gjirokastra, Korca, Kukës, Lezha and Shkodra) serve as the subject of study, The farmers of these regions' farms were affected by the outbreak of bluetongue in 2014. The total number of family members of these farmers amounts to 1719 people. The methodology followed is based on the acquisition of data by filling in type questionnaires, specially designed for this purpose and distributed and supplemented

with the responses of the above mentioned farmers. Although questionnaires are more complex and made up of several sections, only our Social Impact section is used for our case, with 21 questions in total. Their answers are generally based on 3 to 5 alternative options set out, but there are also some that relate to estimates realized with a pointing system (1 to 5 points), as well as some with average percentages. The responses are categorized in several lines in accordance with the directions of the social impact study of the disease mainly related to the feeling experienced by the farmers as a result of the disease and its transmission to family members or farm workers, with the assessment of the state of boredom and its reflection on family relationships, family routine, community and social life routines, the impact on children of their well-being at school, and the standard of family well-being. After their processing, the final results are summarized in tables and special charts.

Generally, all infectious animal diseases give social impacts to different extends. Since bluetongue outbreaks are the most recent, there are few studies of its social impacts, which is why reference to other diseases is often used.

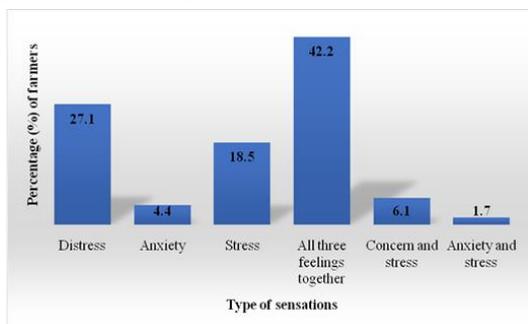
## **RESULTS AND THEIR ANALYSIS**

Social impacts from the outbreaks of infectious diseases are manifested with a wide spectrum of changes related to behavioral disorders, emotional, psychological, social and mental disorders, loss of property trust, fear of illness and consumption of products , etc. (Augustino et al., 2013; OIE, 2014; Cathy Bailey et al., 2006). These feelings can last more than a year (Cathy Bailey et al, 2006), and even in the case of 32% of people up to two years (Productivity Commission, Australia, 2002).

The results obtained from the testing of farmers regarding the sensation experienced as a result of the disease (including distress, anxiety, stress and their combinations) are

shown in Figure no. 1. The fact that most of the farmers (144 farmers or 42, 2%) have experienced the three feelings together, while 93 farmers (27, 1%) were only concerned and 63 (18, 5%) just stressed. Anxiety is experienced by a minority of farmers (15 farmers or 4, 4%) and even less of them (6 farmers or 1, 7%) have experienced anxiety and stress at the same time. Regarding anxiety, literature gives 5.6% (Productivity Commission, Australia, 2002) figure in the case of foot-and-mouth disease. As it seems, most of the affected farmers have dominated the presence of the three emotions together (distress, anxiety and stress), which proves a serious social impact. Meanwhile, in special sensations, the first place is "distress", then "stress" and finally anxiety. As a socially overwhelming sense of stress, the stress is relatively high, which is consistent with the assertion of a bibliographic reference to the epizootic ability that raises the stress of parents and children (Productivity Commission, Australia, 2002). That same source says one out of six people result in nervousness disorders as a result of the disease, while the number of farmers in our case is 2 to 3 times higher.

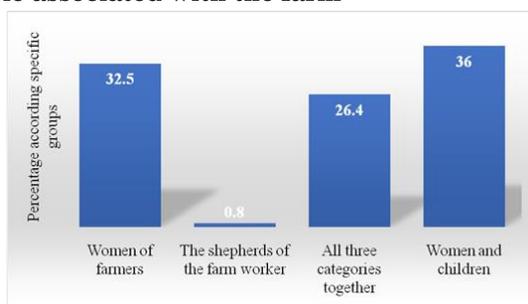
**Figure Nr. 1 – Feelings experienced by farmers as a result of the bluetongue disease outbreak**



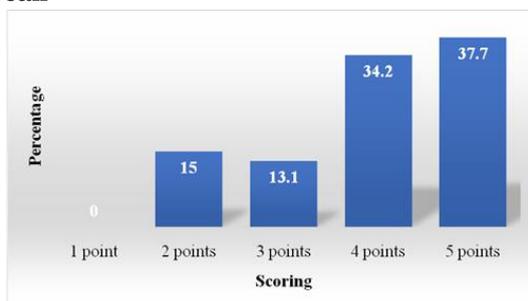
In figure no. 2, the data showing the transmission of the above sensations to the other persons associated with the farm, respectively to the women of the farmers, the children and the shepherds or the farm workers, are presented. As expected,

these feelings were transmitted more to women together with the children of farmers (123 cases or 36%) as the most vulnerable category (Productivity Commission, Australia, 2002) and somewhat less only to women (111 cases or 32.5 %). Interestingly, the fact that shepherds or farm workers are almost refractory to these feelings; only in 3 cases (0.8%) was reported the state of boredom, which ultimately shows a minimal but inconsistent responsibility to the animals and working with them.

**Figure Nr. 2 – Transmitting the feeling from the bluetongue disease to other people associated with the farm**



The state of the boredom of the farmers as a result of the disease is also evidenced by a scoring system (evaluation of 1 to 5 points, depending on the level of boredom). From the results shown in Figure no. 3, it is noted that no farmer results in a low level of boredom, rated at 1 point, only 96 farmers (28.1%) have an average boredom level (with 2 to 3 points), while most farmers 72%) estimated the maximum 4 and 5 point sickness caused by the illness, which is largely approximated with the data of a study conducted in Berat district (Edmir Vreko, 2018). Of course, unlike pastors and employees treated earlier, this demonstrates the high sensitivity of farmers to the disease, even for economic reasons.

**Figure Nr. 3 – Scoring the state of farmers distress from bluetongue disease outbreak**

Because of the feelings created in the families of farmers, the presence of the disease creates an emotional aggravated situation (Cathy Bailey et al, 2006), which inevitably reflects on the way of life and family routine. Precisely the disturbances of the most significant indicators of this reflection (family mood, TV tracking, going to bars, exchange of family visits, and their combinations) are shown in Table no. 1. Doing so much with the different combinations of four basic disease reflection indicators, the latter draw some attention: in over half of the farmers (57%) the disease is reflected in the mood disruption within the family, it is not reflected in the tracking of television programs, was negligible in attendance at the premises (0.9%), and very little in the exchange of family visits (2.6%). The leisure time at the bar is very low compared to the study conducted in Berat, resulting in 51% (Edmir Vreko, 2018). However, there is a significant figure (18.4%) of farmers where the disease is reflected in all four aspects or indicators. This reflects a small category of farmers who feel the most serious of the disease. The other combinations of these indicators reach 21%, ranging from 0.9% to 7%, but not having any special significance. Among the four indicators, the breakdown of family mood is the most affected aspect of the disease. It may result from the fact that the family is an intimate environment, where not only is it necessary to pretend or to be forced, but also where the psycho-emotional state is naturally manifested or discharged, without any obstacles. Referring to the other

three indicators, it is noted that on the follow-up of television programs:

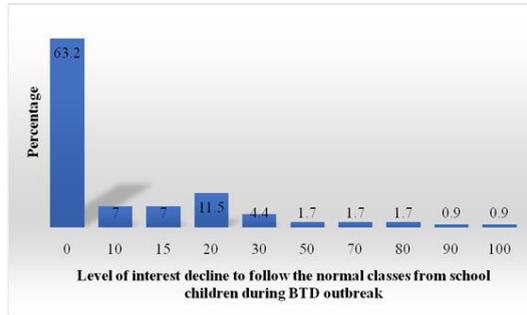
**Table Nr. 1 – The aspects of the reflection of disease in the daily routine**

The aspects of the reflection of disease	No of farmers	%
Family mood	195	57
Watching tv programs	-	-
Going to bars	3	0,9
Exchange of family visits	9	2,6
Family mood + Following tv programs + going to bars + Exchange of family visits	63	18,5
Other combination of the aspects of this study	75	21

The disease results to have zero impact. This is explained by the fact that they remain the only true source of information, can be followed without any special focus, and perhaps also because of the need for relaxation. While the attendance at the bars and the exchange of family visits have been little affected, because they are rituals that contain the obligation and the need to follow, even to drink something and to talk in order to alleviate the state of boredom. Literature sources support our data, highlighting the impact of illnesses on recreational activities, increased frustrations, tensions and conflicts, even over the reduction of health visits (Productivity Commission, Australia, 2002). Indeed, the literature mentions agitated nerve-induced cases of farmers, to extreme acts of suicide with weapons or poisonous substances when they are faced with fever or mass slaughter of their farm animals (Fiona Judd et al, 2005)

An important social aspect was the interest of farmers regarding the well-being of children in school during the period of the disease on the farm, expressing this change of interest with approximate and average percentages. The data is presented in figure no. 4.

**Figure No. 4 – Decline the interest of children in school during BTB outbreak**



where there is a majority of farmers (216 or 63%), to whom the level of decline in interest is 0%. Naturally, this is very positive and proves that they have been able to balance the priorities of family affairs and duties, have managed to share the concerns of the farm with the children's school, while not neglecting children's welfare at school. In addition, 87 farmers (about 25%) have lost interest rates at 10-20%, while only 6 farmers (or 1.8%) have lost interest in school attendance, respectively 3 in 90% and 3 others 100%. In the social terms, this aspect can generally be considered less affected by farm illness and this is the merit of parenting farmers.

Meanwhile, children are the most subtle social category, which shows a more pronounced sensitivity to animals in suffering from an illness, greatly influencing this. For this reason, this impact was studied in terms of their absence at school (from engaging with sick animals), performance and learning outcomes, as well as psychological trauma as a result of animal deaths or slaughter. The earned results are presented in Table no. 2, which points out that in 74.5% of the cases, children have no absentee days at school and

**Table No. 2 – The impact of BTM on the children category**

<b>The aspects of the influence of disease</b>	<b>Nr.</b>	<b>%</b>
Days of absence in school – 0 days	255	74,5
Days of absence in school– 1 upto 3 days	45	13,1
Days of absence in school– 4 upto 6 days	30	8,9
Days of absence in school– 7 up to 10 days	9	2,6
Days of absence in school– 15 days	3	0,9
The influence on the results at school	261	76,3
Psychological trauma from the death/slaughter of animals	243	71

It indicates that they, at least formally, have not been influenced by the situation and have continued the teaching process. In this regard, the literature provides interesting data, showing that the impact of animal diseases on school welfare and child behavior results twice as much as in children without these problems in their families (Productivity Commission, Australia, 2002). There are a number of (13.1%) who have 1 to 3 days of non-attendance, about 11% with 4 to 10 days and only 0.9% have 15 days absence at school. At first glance, these results give the impression of a moderate impact on school attendance, but the latest table data presents another picture; in 76.3% of cases, the disease situation in the farm has negatively affected the school results. This means that the satisfactory behavior of the disease in school attendance did not coincide with the results achieved there, on the contrary, the disease has had a significant impact on reducing the performance and well-being of children in school. On the other hand, to some extent (71%), there is also the psychological trauma of children due to the death or slaughter of diseased animals. Although a high figure, this is completely understandable and acceptable because the sensitivity of children is delicate, especially when they are related to animals and when it comes to death or slaughtering.

Indeed, the various aspects of the social effects of the disease, in their entirety, create a tense psychological state, which is discharged mainly within the family but also outside it. As a result, family harmony is ruined, and the routine of community life is disrupted. Relatively correlated with these,

the dependence of the standard of living standard of the livestock farm is also noticed. These results are presented in Table no. 3, which shows that family harmony results to be affected due to illness in 48.2% of farmers, while the community life routine at 64%. The fact that more than half of farmers are not affected by family harmony means that in the face of the boredom caused by the disease, the correct relationship and family harmony prevailed. Generally, farmers have shown self-restraint by not transmitting farm concerns inside the home to the extent that they affect family harmony, which they seem to consider to be very important. This is reinforced by the high figure of the community routine disorder, which shows that the daily life of the community seems more sacrificed, in addition to the sanctification of family harmony.

Although the standard of living appears to be mainly an economic indicator, it certainly has a social impact because the higher it is, the better the relationships and social interactions. In this respect, the dependence of the standard of living by the livestock farm in some way conditions the social status of the farm units, or is reflected in it. Based on the table data, it results that massively (87.7%) the standard of family living depends on livestock farms and as a result, the deterioration of the farm's situation from illness lowers the standard of living, thus causing various social disturbances. As expected, a number of dominant farmers have based their living standards to their farms, so it can be accepted with certainty that in this case the presence of the disease and the damages it causes also have a significant social impact.

**Table No. 3 – The ratio of the affect on the family harmny, community activity, as well as the dpendence of living standards on the animal farm**

Studied options	Yes		No	
	No.	%	No.	%
Ruining of the family harmony due to the disease	165	48,2	177	51,8
Reflection of aggravated disease situation in the disorder of the community life routine	219	64	123	36
Dependence of family living standard on the animal farm	300	87,7	42	12,3

Lately, family and farmer welfare before and after the disease was also studied to identify its possible change (with the expectation of deterioration), which is closely related to the violation of social tranquility within the family. Well-being is a complex and ancient concept, whose "eudemonic" theories come from the arguments of Aristotle (Dolan, P. et al., 2012). Of course, the reduction in the level of well-being is a prerequisite for the negative impact on livelihood within the family and its social equilibrium, because socio-economic effects are more difficult for small farms and poorer, poorer families (Mwinyi, 2017). Through the questionnaires' responses, data on the categorization of well-being at 5 levels, before and after illness, are provided, which are presented in Table no. 4 and are quite interesting.

**Table no. 4 –The change of family well-being due to disease from the social impact point of view**

The level of well-being	Before disease		After disease	
	No.	%	No.	%
Very bad	-	-	14	4,1
Bad or not good	18	5,3	109	31,9
Average	171	50	171	50
Good	126	36,8	45	13,1
Very good	27	7,9	3	0,9

If before the disease there was no farmer's family recorded at "Very bad" level, after the disease this level of well-being was recorded at 4.1%. Obviously, after the illness, the number of families with "bad or not good" well-being level (from 5.3%

before the disease to 31.9%) is increased. Interestingly, the number of "Average" well-being households remains unchanged before and after illness (50%), while after the disease the number of "Good" and "Very good" welfare categories drops respectively by 23.7 % and 7%. Based on these figures, the invariability of the 50% figure before and after the illness is fully explained; from this level of well-being descend after illness at the two lowest levels 30.7% of households and 30.7% appear here from the two highest levels. In other words, 30.7% of high and very good pre-disease families go down to the average level after the illness, as the same family figure descends from illness from moderate to poor to very bad, keeping in equilibrium the number of families with average welfare.

## CONCLUSIONS

The data obtained from the study leads us to some conclusions:

- The blue tongue turns out to be a disease with considerable social impact, which has been demonstrated in several aspects included in the study.
- Regarding the three sensations experienced as a result of the disease (disturbance, anxiety, stress and their combinations), 42.2% dominates the presence of the three sensations together. Stress is noticed at a small figure, at 18.5% of farmers. On the other hand, these feelings are more transmitted to women in the family (32.5%) and to women and children (36%), while very low transmission (0.8%) to shepherds and farm workers proves their lack of human and professional responsibility.
- According to a scoring system, about 72% of farmers produce a high level of melancholy (with 4 and 5 points), while no farmer with the lowest level of bruise estimated at 1 point.
- The emotional state caused by the disease is mainly reflected in the mood disruption within the family (57%), very little in attendance at the premises and exchange of family visits (3.5%), and not in the pursuit of programs and television.

- Regarding the reflection of the disease in the interest of children's welfare, there is an interest rate of 63.2% of farmers who represent 0% of the decline in interest rates. Only a minority of them (6.9%) show interest reduction at 50-100%.
- Although 74.5% of children did not miss a single day at school, 76.3% of them had an impact on learning results, while not leaving this delicate social category out of the reach.
- Most of all, the severe illness situation has affected the disorder of the community's community routine (64% of them), while in 87.7% of the farmers the standard of living has direct dependence on livestock farms.
- 30.7% of farmers are experiencing a deterioration of family well-being as a result of the disease, falling from good and very good welfare levels to the lower ones.

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