

Of goats and humans; the societal costs of the Dutch Q fever saga

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Background

In the Netherlands, more than 4.000 human Q fever cases and 24 deaths were notified between 2007 and 2010 during an unprecedented outbreak, implicating dairy goats as the main source. Veterinary control measures were taken reluctantly as economic damage was feared. Measures were introduced late, gradually increased and culminated in the culling of approximately 60.000 goats, 3 years after the outbreak began. Growing numbers of Dutch patients are reported to develop late complications; Q fever fatigue syndrome or chronic Q fever, with implicit high costs to society. We estimated the societal cost of the outbreaks by combining data from veterinary and human health sector sources.

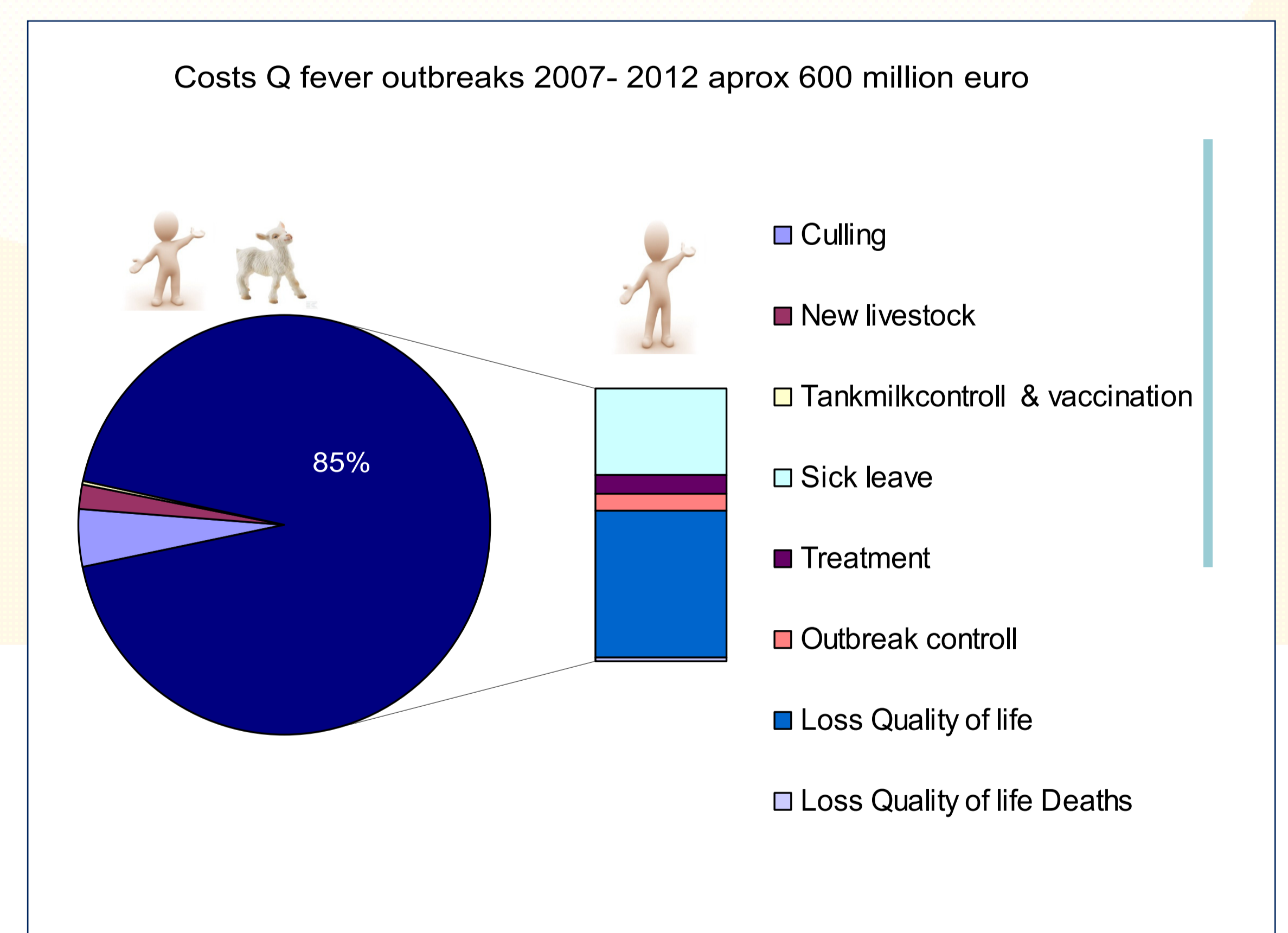
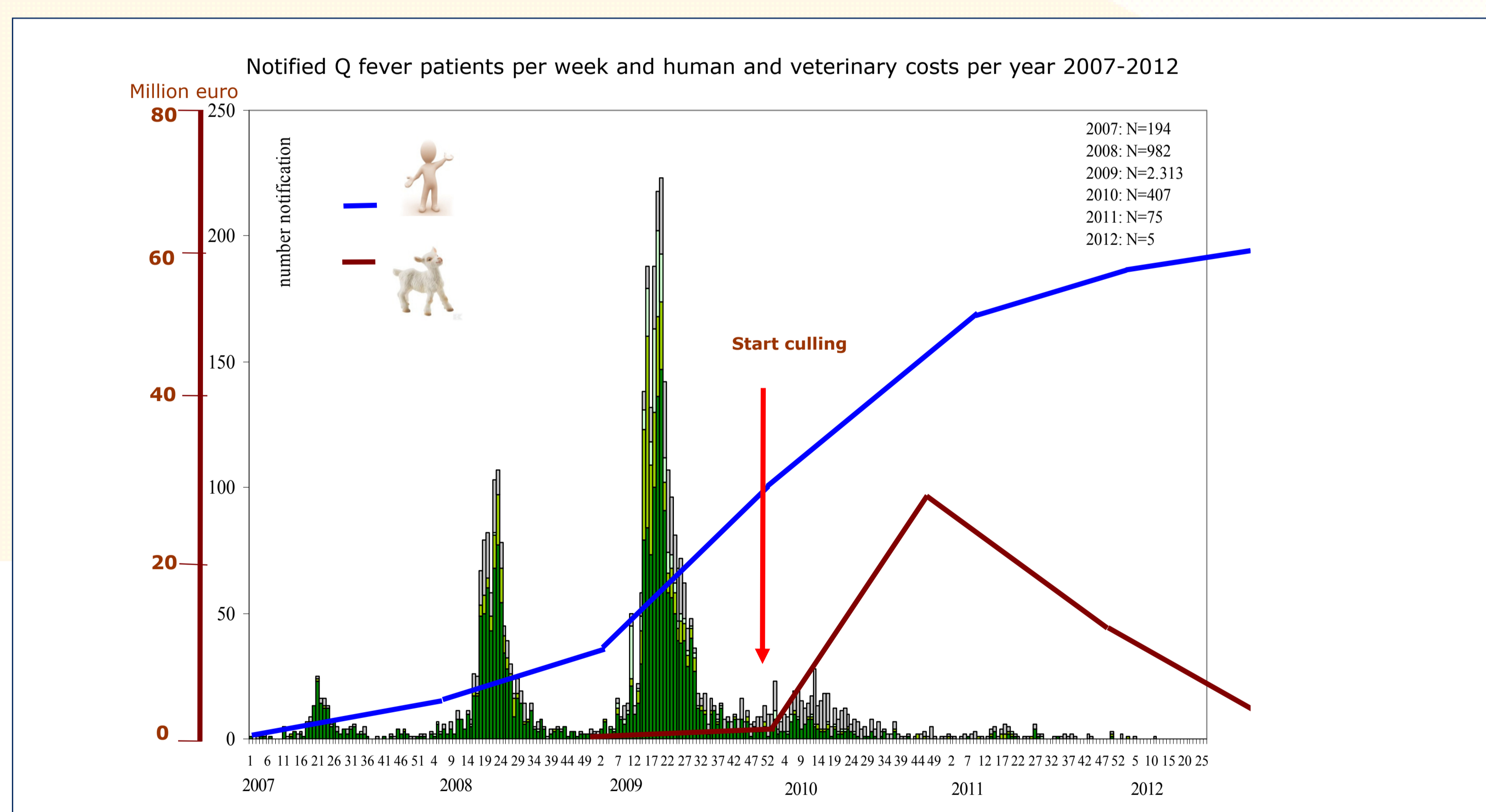
Methods

All patients notified in 2007 and 2008 received a questionnaire 12 to 26 month after the onset of initial illness. Human costs were based on real cost data of sick leave, health care consumption and estimated costs of Quality of Life (QoL) loss, from patients notified in 2007 and 2008 and Dutch veterinary data. Cost data were extrapolated to other outbreak years also incorporating duration of illness information from literature.

Results

Following acute Q fever 40% of working Dutch patients reported long-term (>1 month) sick-leave. One to two years after initial infection 40% of patients reported persisting physical symptoms and 60% a severely affected health status. The general Quality of Life was affected in 44.9% of cases and 43.5% suffered from persisting fatigue.

The estimated societal costs of the Q fever outbreak are approximately 250-600 million Euros. Human costs account for 85%, are spread out over a decade and delayed. The largest costs are due to loss of QoL followed by productivity loss. Veterinary costs are much smaller but immediate.



Conclusions

Q-fever poses a serious long-term burden on patients and society. The real impact of a zoonosis outbreak only becomes apparent when combining both human health and veterinary costs.

Veterinary cost are proportionally small but more apparent as they are immediate. Because of a slow trickle down effect human cost and societal implications tend to be hidden and underestimated. Finding the balance between economic veterinary interests and human health remains a challenge when dealing with future outbreaks of zoonotic diseases.



The then ministers of health and agriculture faced with the goat issue.

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