

Impact evaluation studies

Animal health and production in sheep and goat flocks of farmers using veterinary services offered through Veterinary Field Units



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Summary

The Dutch Committee for Afghanistan – Veterinary Programmes (DCA - VET) has been working in Afghanistan for almost 25 years. Its focus is on livestock health and production and includes improving access to veterinary services to rural farmers/herders and livestock extension.

Since 2009, an EU-supported project “Support to Animal Health in Afghanistan, with focus on the Western region project” was implemented for 3 years in Herat, Ghor, Farah and Badghis provinces. The overall objective of the project is “To contribute to the improvement of rural livelihoods (food security and farm incomes) by improving the animal health and production of Afghan livestock”.

The most important results of the programme were expected to be an increase in food security in areas covered by paravets and other animal health service providers (AHSPs). This had to be achieved through preventive actions and subsequent reduction in morbidity and mortality from the commonest preventable and curable livestock diseases. Food security will increase because of concomitant increases in the number of livestock and its productivity.

To support these claims, DCA-VET has started a number of research studies into the animal health and production situation of farmers in Herat province. A three-pronged approach was implemented, including:

1. A survey in line with the previous study of 1996, using 1996 non-covered areas as a control group – 360 farmers
2. Comparison of intensive users (240 farmers that do use the veterinary services offered through VFU and paravets) and non-users (240 farmers that do not use these veterinary services)
3. Longevity study following a group of farmers continuously over a longer period – 40 farmers

Data of studies 1 and 2 were available for two years (2011 and 2012). Of study 3, data of just 10 farmers over a 12 months period were available.

The research objective of study 2 was most clear cut: to compare mortality rates and herd dynamics (incoming and outgoing numbers) in livestock between farmers making use of veterinary services (VS) provided through the VFU and farmers that do not use these services. The research objective of study 1 was to compare with data from 1996. However, to actually compare 2011 data with data collected in 1992-1993 seemed not relevant. For this reason, data of study 1 were analysed similar to study 2, comparing groups of farmers that make different use of veterinary medicines, purchased from different sources (local market or through the VFU).

Results of both studies were very much in line with each other. Regression analysis estimated a beneficial effect in herds of farmers using veterinary medicines and services through the VFUs compared with farmers not using these services. There was

- around 20% less mortality in adult sheep and goats (in both studies)
- around 30% less mortality in lambs and kids (in both studies)
- around 10% more off-take of lambs and kids (in both studies)

However, the data of this study also shows that animal health between years varied greatly. Across all herds, health in 2012 was considerably better than 2011. This effect was in some situations even larger than the positive effects seen of applying veterinary services through the VFUs. This underlines the importance to have these studies conducted across a number of years. It allows for differentiating general effects of years (climate, supply of nutrition, epidemics of infectious diseases) from the effect of using veterinary services.

Health or production indicator	Effect of 'year' and 'use of services through Veterinary Field Units'	Study 1	Study 2
Mortality in sheep and goats	Year effect: 2012 compared with 2011 Effect of medicines and services through VFU*	20% less mortality 20% less mortality	35% less mortality 20% less mortality
Mortality in offspring	Year effect: 2012 compared with 2011 Effect of medicines and services through VFU	No effect 35% less mortality	10% less mortality 30% less mortality
Off take of lambs and kids	Year effect: 2012 compared with 2011 Effect of medicines and services through VFU	15% more off-take 10% more off-take	15% more off-take 10% more off-take

* compared with no medicines delivered or services provided through the VFU

Considering these results, it seems appropriate to discontinue with study 1: results from this study provide similar results as study 2, while groups of farmers are less clearly defined and consequently there is less balance between farmer groups.

Instead, it is recommended to use resources to modify the current questionnaire to include collection of information on prices for off-take, prices for medicines and vaccines (through VFU and through market), on treatment and on economic losses due to mortality. With this information, it will allow for calculating the cost-benefits of veterinary services through VFUs.

Furthermore, to gain a more complete picture of the impact of the services through VFUs, studies on

- production of animal products (cashmere, wool, dried cheese),
- occurrence of disease (clinical signs of enterotoxaemia)
- on livelihoods – food security and farm income

were suggested at the end of consultancy on impact assessment (July 2012). Time saved by not continuing study 1 may well be used to conduct the studies on production and on occurrence of disease. An additional study on livelihoods will require more in-depths discussions with DCA staff and donors to clearly define objectives and study design.

Results of study 3 provide information on the herd dynamics. These results are very useful to learn about mortality and productivity over time such as in relation to seasons and festivities. An example is given in the figure below. It shows that lambing season starts in January up to March, while off-take of lambs is from April onwards. The balance of adult sheep is made through sales of ewes throughout the year compensated by purchase in the second half of the year. More data entry has to be done and this study surely should continue for 3 years. It will provide a detailed picture of herd dynamics across years and for different farmers.

