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Performance of Community-based Animal Health Workers in the Delivery of Livestock Health Services

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ABSTRACT

Since the liberalization of animal health services in Kenya in the early 1990s, community-based animal health workers (CBAHWs) have become an important alternative animal health delivery channel in the country's marginal areas. However, professional veterinary practitioners have questioned the effectiveness of CBAHW programmes in animal health service delivery in Kenya. This is partly due to lack of information about their performance and partly because CBAHW programmes were implemented before the necessary changes in the existing legal, policy and institutional frameworks had been made. This study was designed to provide such information. In this regard, the productivity of livestock herds among farmers who utilized the services of CBAHWs was compared to that of livestock belonging to farmers who utilized the services of professional veterinarians. The annual live births per mature female (birth ratio) and the proportion of young stock to mature females (breeding index) was computed over a period of 3 years in cattle and goat herds under care of CBAHWs and professional veterinarians. The birth ratios in cattle and goats under CBAHWs were not significantly different from those under the care of professional veterinarians ($p > 0.05$). Furthermore, the breeding index of cattle and goats under the two categories was not statistically different. Besides the CBAHWs providing clinical services, they also created positive externalities through participatory learning enjoyed by neighbouring livestock keepers, who later dispensed with their services. Policy attention is therefore needed to enhance the participation of CBAHWs in animal health service delivery and to appropriately integrate their activities into the existing formal animal health delivery system in Kenya. Interventions that improve the professional development of these workers, with emphasis on areas pertaining to care of young stock, would not only promote the sustainability of CBAHW programmes but would also improve livestock productivity in the country's marginal areas.

Keywords: community animal health workers, animal health service delivery, marginal areas, breeding index, birth ratio

Abbreviations: CBAHW, community-based animal health worker; CBS, Central Bureau of Statistics; NGO, non-governmental organization; KETRI, Kenya Trypanosomiasis Research Institute; IPAR, Institute of Policy Analysis and Research; IFPRI, International Food Policy and Research Institute; BI, breeding index; BR, birth ratio; KVB, Kenya Veterinary Board; VO, veterinary officer; AHA, animal health assistant; SD, standard deviation; ITDG, Intermediate Technology and Development Group

INTRODUCTION

The livestock health sector in many developing countries is currently undergoing restructuring as part of the ongoing global policy of economic liberalization. One widely publicized grass-roots initiative to improve livestock health services delivery in marginal areas of Africa has been the introduction of community-based animal health workers (CBAHWs). The primary objective of the CBAHW programme is to supplement the existing but overstretched professional animal health delivery system in marginal areas of many developing countries.

By utilizing existing traditional knowledge, the CBAHW model encourages the participation of local communities in the design and delivery of animal health care services. The CBAHW initiative also empowers the local people to determine the type of animal health services that they receive. This approach has been shown to provide a unique framework for the full privatization of animal health services in the marginal areas of Africa (De Haan and Bekure, 1991; Holden, 1997; Akabwai *et al.*, 2000).

As a recent concept, however, the CBAHW approach has been implemented contrary to the existing legal, policy and institutional frameworks in animal health care delivery in many developing countries. Examples include experiences from Afghanistan (Leyland, 1993), Chad (Peters, 1993), Kenya (Blakeway, 1993) and Sudan (Dahir, 1993). Other are the village animal health workers in Nepal (Moktan *et al.*, 1990), the Anyamara veterinary technicians in southern Peru (Johnson and Chahuares, 1990) and the village-based parasite control programme for swamp buffalo in Thailand (Meemark, 1988). In implementing these community-based programmes, different approaches have been adopted in different countries, presumably to tailor the programmes to the specific needs of livestock farmers in varied environments. Although numerous terms have been used to describe these differing programmes, Hüttner and colleagues (2001) and Oakeley (2001) emphasized that most of them share similar features and goals such as: (1) selection of individuals for training by communities within which they work; (2) technical training in animal health requiring only a short period, usually less than a month; (3) low-cost strategies concentrating mainly on important livestock health and management issues of the farming community; (4) payment for services provided coming directly from clients.

Owing to their limited training and literacy, the CBAHWs have often been perceived by professional veterinarians as a threat to the provision of animal health services. As a result, there has been poor cooperation and, at times, hostile reaction from the formal veterinary service providers. This has left CBAHW programmes with little formal support and reliance mainly on structures set by the non-governmental organizations (NGOs) that initiated them (Sikana *et al.*, 1992). The suspicion of CBAHWs by professionals has been further compounded by the general lack of information about their effectiveness. In many areas where these programmes have been developed, few studies have been undertaken to assess their impact. As a result, the CBAHW programmes, although crucial to livestock keepers in arid and semi-arid environments, have remained controversial components of the privatization exercise in marginal areas of Africa (Oakeley, 2001; FAO, 1997).

The objective of this study was to assess the effectiveness of CBAHW programmes from the farmers' perspective, with the aim of providing information that could be used to advise and influence policy on these programmes in Kenya. It is worth noting that the viability and effectiveness of CBAHW programmes depends upon their support by the professional veterinary service providers. Therefore, if CBAHWs are to provide livestock health services efficiently, they need to be an integral part of these services (De Haan and Bekure, 1991). In Kenya, as in other sub-Saharan countries, the professional animal health delivery systems consist of (i) veterinarians consisting mainly of degree holders and (ii) two cadres of paraveterinarians (or paraprofessionals) who include diploma and certificate holders trained in animal health (Otieno-Oruko, 2000).

METHODOLOGY

Study area

This study was conducted in Mtito Andei division of Makueni district in Kenya. The area is semi-arid with an average rainfall of 550 mm annually and the vegetation is dominated by *Acacia* species. Farmers practise small-scale mixed livestock–crop farming in an agropastoral production system. Apart from crop and livestock farming, honey harvesting and marketing is also an important economic activity in the area.

The area borders Tsavo National Park and suffers from a high level of tick-borne diseases and trypanosomosis transmitted from the park by ticks and tsetse fly, respectively. Programmes supporting establishment of CBAHWs that have been initiated in this division include the German Agro-Action (GAA) agricultural project initiated under GTZ in 1995 and the Intermediate Technology Development Group (ITDG) programme of 1994.

Data collection methods

Both primary and secondary data were collected in this study. Secondary data collection involved a review of documents from the Ministry of Agriculture and Rural Development, the Department of Veterinary Services, the Central Bureau of Statistics (CBS), Makueni district development plans, project reports from various organizations including NGOs that have been involved in the implementation of CBAHW programmes, and journal articles and other publications. Internet sources supplemented the available literature.

Primary data were collected from a random sample of 180 farmers using a comprehensive questionnaire that had been pre-tested and amended. The questionnaire sought information on approaches used in management of animal health; level of awareness about CBAHW programmes as well as other animal health service delivery systems in the area. Information on herd dynamics including mortality, morbidity, births, receipts and sales between 1998 and 2000 was also collected. Interviews were conducted in the local dialect by a team of six enumerators and one research assistant, all with secondary-school level of education, supervised by one of the authors. Each

questionnaire took about an hour to complete. The data collection exercise was carried out between June and August 2001.

Sampling methods

A sampling frame was constructed from the 1999 population census returns obtained from the Central Bureau Statistics (2001). In 1999, Mtito Andei division had 66 663 people distributed in 13 354 households and clustered in 228 villages. Twelve of these villages were randomly selected and 180 households were sampled with a probability proportional to the village's population size. The selected households were visited, and the household head was interviewed.

Data analysis

The gathered data were coded and stored in Microsoft Access. Statistical analysis was performed using SPSS (SPSS Inc., Chicago, IL, USA). Descriptive statistics were used to describe the characteristics of livestock keepers. Analysis of variance was used to compare productivity of livestock under different animal health delivery systems.

Computation of productivity indicators

Productivity analysis was based on the premise that improved livestock management including regular de-worming and disease prevention may increase productivity of both cattle and goats (CARD, 1989). The animal health service in use could improve animal production by enhancing both the levels of health and production management standards. The impact of animal health services can be analysed by relating the size and productivity of herds to the type of service used. The degree of success that livestock keepers have achieved under each delivery channel in increasing livestock fertility and decreasing calf mortality can be obtained by calculating a breeding index (BI) (equation 1):

$$\mathrm{BI} = \frac{\%\mathrm{YA}}{\%\mathrm{AF}} \tag{1}$$

where BI = breeding index; YA = number of young animals in the herd at a specified time period and AF = number of adult females in the herd at a specified time period.

Woods (2000) used this approach to estimate the productivity of goats in relation to distance from the source of animal health services in Zimbabwe. The present study adopted Woods' approach to estimate and compare the productivity of cattle and goats under different health delivery channels. In addition, this study also estimated the ratio of live births to the number of adult females in the herd in each year between 1998 and 2001. This was named the birth ratio (BR) (equation 2):

$$\mathrm{BR} = \frac{\mathrm{LB}}{\mathrm{AF}} \tag{2}$$

where BR = birth ratio; LB = number of live births in a specified period and AF = number of adult females in the herd at a specified time.

Good management of trypanosomosis and helminthosis has been shown to increase lambing and kidding rates, respectively, in sheep and goats and to lead to increased birth weights and reduced mortality in young stock (CARD, 1989; Berrag and Cabaret, 1998; Osaer *et al*., 1999, 2000). Since trypanosomosis and helminthosis are the major diseases in the study area (KETRI, 2000), their proper management is likely to increase birth rates and reduce mortality in livestock herds. The BR and BI were used to determine this effect in livestock herds under different animal health delivery channels.

RESULTS

Characteristics of livestock keepers

The average age of the livestock keepers was 49 years, and they owned a mean acreage of 27.8 acres (range 2–268). All the households surveyed kept some livestock that included cattle, sheep and goats. The mean herd size was 6 for cattle, 3 for sheep and 27 for goats. Fifty per cent of the household heads engaged in some form of additional income generation besides crop sales and livestock off-take. The ratio of the mean annual farm to non-farm income was 4:1. The total income was not significantly different between male-headed and female-headed households ($p > 0.05$). Female-headed households formed 21% of the sample. Eighty-seven per cent of all household heads visited were literate.

Access to and utilization of animal health delivery channels

Four main animal health delivery channels were identified in the study area. These included public veterinary service providers comprising a government veterinary officer and an animal health assistant, private veterinary practitioners consisting of an animal health assistant, veterinary drug shop operators, and community animal health workers. The mean distances from the livestock keepers' farms to each of these health delivery source points are summarised in Table I.

TABLE I
Mean distances to nearest sources of animal health service

Service provider	Mean distance (km)	Standard deviation
Veterinarian	33.79	31.88
Animal health assistant	21.91	8.72
Veterinary drug shop	12.46	9.05
CBAHW	2.00	1.72

Source: Survey data, 2001

During the year preceding the survey, 77% of the livestock keepers had used the services of CBAHWs, 66% had undertaken their own treatments using drugs and advice obtained from veterinary drug stores, and 16% had used the services of professional animal health personnel. Of the livestock keepers who had treated their own animals, 40% indicated that they had acquired the skill from CBAHWs and then dispensed with their services. Most of the CBAHWs sold drugs in single doses. This practice was most prevalent for antihelmintics (for gastrointestinal tract parasites), antibiotics (mainly for tick-borne diseases) and trypanocides for trypanosomosis.

Characteristics of farmers using specific animal health delivery systems

Information gathered to determine how each of these health delivery channels was utilized showed that 53 livestock keepers had used CBAHWs exclusively since the inception of the programmes in 1994; 8 had utilized only qualified animal health personnel (veterinarians and paraveterinarians); 31 had relied only on veterinary drug stores; and 79 had used a combination of these channels. The rest could not be conclusively classified. Table II summarizes the characteristics of these livestock keepers stratified by health service delivery channel used in the previous 6 years.

Users of trained professional veterinarians had significantly larger livestock herds compared to users of other animal health delivery channels. They also had significantly higher farm and total income. On average, they also had larger (but not significant) parcels of land. On the other hand, there was no significant difference in income level between users of the other health delivery channels. These findings are in agreement with past studies that have shown that farmers who seek the services of professional veterinarians are usually better resource-endowed than those seeking other animal health delivery channels (Wamukoya *et al.*, 1995).

There were no significant differences between different health channel users as far as age, formal education and years of farming experience were concerned. Users of veterinary drug shops were nearer to drug outlets than users of other delivery channels. However, users of CBAHWs and veterinary personnel were not more advantaged than users of other channels in terms of their physical access to sources of animal health services.

Livestock productivity among users of different animal health service delivery channels

Table III summarizes the breeding index (BI) and birth ratios (BR) for herds of cattle and goats stratified by animal health service delivery channel. On average, the number of births per cow for livestock keepers using veterinary personnel was lower than that of CBAHW users. On the other hand, the breeding index for cattle herds belonging to users of veterinary personnel was higher than that of users of CBAHWs. However, the differences were not significant ($p > 0.05$).

Table III further indicates that livestock keepers who used all the health delivery channels attained a significantly higher birth ratio than users of professional veterinarians and veterinary drug shops. However, this ratio was not significantly different from that of CBAHW users.

TABLE II
Characteristics (means) of livestock keepers stratified by choice of animal health service delivery channel

Characteristic	CBAHW users	Veterinary staff users	Drug shop users	Mixed service users
Number	53	8	31	79
Owned goats 1997	25.4[a] (26.5)	73.5[a,b,c] (82.2)	30.4[b] (29.2)	23.7[c] (27.5)
Owned goats 2001	23.6[a] (22.3)	53.0[a,b,c] (74.1)	29.2[b] (39.2)	28.1[c] (22.8)
Owned cattle 1997	3.35[a,e] (4.1)	17.9[a,b,c] (22.8)	7.8[b,e] (9.7)	5.75[c] (7.96)
Owned cattle 2001	2.85[a] (3.4)	13.5[a,b,c] (27.0)	6.41[b] (8.2)	5.44[c] (7.74)
Annual farm income (Kshs)	25 688[a] (23 019)	350 062[a,b,c] (929 547)	23 327[b] (21 567)	25 907[c] (84 454)
Annual total income (Kshs)	35 654[a] (28 784)	385 912[a,b,c] (943 881)	28 746[b] (24 877)	36 977[c] (103 517)
Land size (acres)	19.84[a] (20.55)	42.37 (49.93)	22.45 (20.83)	35.78[a] (38.89)
Nearest veterinary drug shop (km)	8.9[b] (6.0)	14.3[a] (10.8)	7.9[a,b] (6.0)	17.3[b] (8.8)
Nearest veterinary personnel (km)	26.7[a,b] (17.6)	44.0[a] (20.1)	25.0[a,b] (19.9)	40.6[b] (17.7)
Nearest CBAHW (km)	1.87 (2.43)	2.13 (1.81)	1.79 (0.82)	2.23 (1.64)
Age (years)	46.5 (11.2)	56.1 (15.5)	51.9 (14.3)	48.5 (14.5)
Formal education (years)	2.3 (0.9)	2.6 (1.5)	2.2 (0.7)	2.2 (0.9)
Farming experience (years)	15.5 (8.5)	16.0 (6.8)	15.3 (7.4)	16.3 (11.1)

Source: Survey data, 2001

[a,b,c]Values with the same superscript in a row are significantly different between groups ($p = 0.05$), $n = 171$

1 US$ = Kshs 78 (June 2001)

Figures in parentheses represent standard deviation

TABLE III
Breeding index and birth ratio for cattle and goats among livestock keepers stratified by health service delivery channel

Productivity index	Animal health delivery channel			
	CBAHW users	Veterinary staff users	Drug shop users	Mixed service users
Cattle				
Breeding index	0.3466	0.6625	0.3595	0.3840
	(0.4115)	(0.4749)	(0.3837)	(0.3955)
Birth ratio	0.4272	0.3347	0.3149	0.4094
	(0.3847)	(0.2950)	(0.2695)	(0.3698)
Goats				
Breeding index	0.4545	0.4022	0.5563	0.5853
	(0.2972)	(0.3111)	(0.4292)	(0.3897)
Birth ratio	0.4997	0.2485[a]	0.4016[b]	0.6136[a,b]
	(0.4532)	(0.1547)	(0.2227)	(0.4117)

Source: Survey data, 2001

[a,b]Values with the same superscript in a row are significantly different between groups; $n = 161$ for goats and $n = 101$ for cattle ($p = 0.05$)

Figures in parentheses represent standard deviation

BI and BR indicated are means of 3-year averages (1998/1999, 1999/2000, 2000/2001)

DISCUSSION

Effectiveness of community-based animal health workers

Reforms in the livestock sector were meant, among other things, to increase the efficiency of animal health service delivery to livestock keepers. While this worked well in the high-potential areas of Kenya, it did not fare as expected in the marginal areas. With the unique characteristics of arid environments, i.e. remoteness, poor infrastructure and poverty, provision of veterinary services in these areas was thrown into disarray following economic reforms (Omiti and Irungu, 2002). Typical problems included drug shortages, lack of transport and re-emergence of diseases of major economic and social importance such as rinderpest and contagious bovine pleuropneumonia (CBPP) (Catley, 1999). Thus, contrary to expectation, reforms in animal health service delivery did not meet the envisaged objective and were therefore not a panacea for economic development, especially in the marginal areas of Kenya. The emergence of community-based animal health worker programmes in these areas was geared towards bridging this gap.

In this study, CBAHWs were more accessible to livestock keepers than were the formal veterinary service providers. This means that livestock keepers were able to access treatment when required without walking long distances to local veterinary drug stores or veterinary officers. Distance contributes to transaction costs in that it imposes a double cost to the livestock keeper, who must pay in time and money to get to the practitioners to request service and then pay again for the latter's trip to the farm. This may in turn reduce both the livestock keepers' demand for animal health services as well as the practitioners' supply of these services. For example, Lee (2000) in Uganda and Woods (2000) in Zimbabwe, observed that long distances to animal health service providers significantly reduced the demand for veterinary services. Reducing the travel time to the service providers, for example through improvement of rural road infrastructure, would probably increase both the demand for and supply of veterinary services. This might in turn increase livestock productivity as well as reduce production costs to livestock keepers, who may become more inclined to use veterinary inputs.

Apart from being accessible to livestock keepers, CBAHWs were comparatively inexpensive compared to the professionals and paraprofessionals. This was attributed to their charging less for their services and selling drugs in individual doses. In addition, they provided advice and assistance in drug administration. In so doing, the CBAHWs were able to reduce competition from veterinary drug retailers as well as create loyalty among their clientele. Because the CBAHWs' basic training was similar to that of the livestock keepers, some of the farmers quickly acquired their skills and were able to treat their own livestock. This was evidenced by the fact that 40% of the livestock keepers who treated their own livestock had acquired this skill from CBAHWs. This suggests that the CBAHW programme in Mtito Andei has created positive spillover to the community. In the absence of CBAHWs, livestock keepers would have to rely on their own knowledge, or on the advice provided by drug stores. Some studies have shown that some of these veterinary drug stores are manned by persons without any training in animal health (Bett, 2001). Under such circumstances, the risks of drug misuse are likely to be greater than when livestock keepers are acting under the advice of CBAHWs.

In neo-classical economics, the demand for goods or services is influenced by, among other things, the ability to pay, which in turn is dependent upon the buyer's stock of resources or wealth (North, 1990). In most African communities, wealth is often measured by land and livestock herd sizes, with larger sizes showing greater wealth (Wamukoya *et al.*, 1995). In this study, users of services of CBAHWs had significantly less wealth than users of trained veterinary personnel. The mean cattle and goat herd sizes in the year 2001 were 13.5 and 53, respectively, for users of veterinary personnel, and 2.85 and 23.6 for users of CBAHWs. It appears, therefore, that the choice of an animal health service channel in Mtito Andei was influenced *inter alia* by the wealth status of livestock keepers. Past studies have shown that farmers who seek the services of professional veterinarians are usually better resource-endowed than those seeking other animal health delivery channels (Wamukoya *et al.*, 1995).

The effectiveness of CBAHWs in Mtito Andei was clearly demonstrated by the fact that there was no significant difference in the productivity indices of livestock under the care of CBAHWs and professional veterinarians. This suggests that while the

CBAHWs are clearly not as well trained as veterinarians or paraveterinarians, they provide a necessary compromise to avoid having just a few resource-endowed livestock keepers being correctly advised by veterinarians or paraveterinarians and the majority of the community receiving no advice at all. One would, however, expect the performance of livestock under the care of professional veterinarians to perform better. This was not the case in this study, as the major parasites and diseases that affected livestock in the area (helminthosis, trypanosomosis and tick-borne diseases) appear to have been handled well by CBAHWs.

The study also shows that there was no significant difference in the livestock productivity for mixed service users compared to those who used only the services of CBAHWs, professionals and paraprofessionals. Given that 77% of the livestock keepers had used services of CBAHWs in the one-year period preceding the survey, this implies that those who had used a combination of health delivery channels had used services of CBAHWs in addition to others. Bearing in mind that all the mixed service users had also used CBAHWs, it seems that there is a positive synergistic impact on livestock productivity when CBAHW services are complemented by other sources.

Institutional and policy implications

As demonstrated in this study, the CBAHWs play an important role in the provision of animal health services in marginal areas of Kenya. However, the existing legal, institutional and policy provisions have not recognized this and continue to limit their participation in the provision of animal health services. For instance, the current licensing requirements for private veterinary practice exclude non-professionals from engaging in private practice irrespective of the socio-economic and physical characteristics of the locality of the practice. Because of the demand for animal health services, unethical practices such as drug misuse and maladministration have been seen in areas in which circumstances have failed to attract professional veterinary practitioners. It is important that CBAHWs wishing to offer services to their communities should be encouraged to do so. Likewise, the CBAHWs currently offering services should be recognized and registered.

A clear regulatory framework that encourages professional fair play should be enacted. The existing government animal health services structure has a clear and definitive role for veterinarians and paraprofessionals. Borrowing from this, a new framework to regulate the activities of CBAHWs could be designed. If this is the case, legislation should be considered to allow for an official and regulated role of CBAHWs. By legitimizing the activities of these service providers, the state will be better able to monitor their performance and control malpractice. The formation of CBAHW associations could enhance training standards and encourage the formation of links with veterinarians. Such associations will also act as a link between CBAHWs and the Kenya Veterinary Board (KVB).

The KVB's mandate as a regulatory body should be expanded to include a wide range of activities. Membership on the board should be expanded to include farmers or

livestock keepers' groups. The four main stakeholders in the livestock industry, namely the government as the public trustee, the livestock producers, consumers, and animal health service providers, would then jointly formulate policies on service delivery. The new board would act as an arbitrer of disputes and also ensure maintenance of ethical standards in animal health practice. It is also within this expanded board that the operational framework of all service providers would be designed.

In conclusion, CBAHWs are trained as primary health care providers targeting diseases found in a locality. As livestock keepers themselves, these workers share the same social, cultural and linguistic background and are easily accessible by fellow livestock keepers because they live and work in the same vicinity. These workers are able to provide reliable information on animal diseases to maintain equal levels of productivity, and in essence compensate for professional advice that would be obtained less frequently from qualified veterinarians. This study has shown that CBAHWs have enhanced the capacity to deliver animal health services in marginal areas of Kenya, albeit without the necessary enabling environment. The government should therefore be ready to support the CBAHWs through training, and CBAHWs can in return provide a front-line service in animal health delivery in these areas. There is thus a positive synergy between the government and CBAHW, that the government should consider exploiting.

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Performances des pourvoyeurs de soins aux animaux basés dans la communauté dans la prestation de services de santé au bétail

Résumé – Depuis la libéralisation des services de soins aux animaux au Kenya au début des années 1990, les pourvoyeurs de soins aux animaux basés dans la communauté (CBAHW) sont devenus une importante filière de prestation de soins alternative dans les zones marginales du pays. Les vétérinaires professionnels ont toutefois mis en question l'efficacité des programmes des CBAHW dans le domaine de la prestation de services de santé aux animaux au Kenya. Ceci est partiellement redevable au manque d'informations concernant leurs performances et partiellement au fait que les programmes des CBAHW ont été mis en place avant que les changements nécessaires n'aient été apportés aux cadres légaux, politiques et institutionnels. Cette étude a été conçue pour fournir de telles informations. À cet égard, la productivité des troupeaux de bétail parmi les fermiers qui utilisaient les services des CBAHW a été comparée à celle du bétail appartenant aux fermiers ayant utilisé les services de vétérinaires professionnels. Les naissances vivantes annuelles par femelle en pleine maturité (taux de naissances) et la proportion de jeunes stocks par rapport aux femelles en pleine maturité (indice de reproduction) ont été calculées sur une période de 3 ans chez le bétail et les troupeaux de chèvres mis sous les soins des CBAHW et des vétérinaires professionnels. Les taux de naissance chez le bétail et les chèvres mis sous les CBAHW n'ont pas été significativement différents de ceux qui ont été mis sous les soins de vétérinaires professionnels ($p > 0.05$). De surcroît, l'indice de reproduction du bétail et des chèvres sous les deux catégories n'a pas été statistiquement différent. Mis à part les CBAHW fournissant des services cliniques, il a également été créé des externalités positives par le biais d'un apprentissage participatif auxquelles se sont joint des gardiens de bétail avoisinants, qui par la suite ont décliné leurs services. Une attention réglementaire est par conséquent requise pour améliorer la participation des CBAHW à la prestation de services de santé aux animaux et pour intégrer de façon appropriée leurs activités au système formel existant de prestation de services de soins aux animaux au Kenya. Les interventions qui améliorent le développement professionnel de ces intervenants, avec l'accent mis sur les domaines afférents aux soins du jeune bétail, non seulement encourageront la durabilité des programmes CBAHW mais amélioreront également la productivité du bétail dans les zones marginales du pays.

Actuación de los trabajadores de la salud animal con base en la comunidad en el despacho de servicios de salud para el ganado

Resumen – Desde la liberalización de los servicios de salud animal en Kenia a principios de 1990, los trabajadores de salud animal con base en la comunidad (CBAHWs, en inglés) se han convertido en una importante vía alternativa en el despacho de asistencia sanitaria animal en áreas marginales del país. No obstante, los médicos veterinarios profesionales han cuestionado la efectividad de los programas CBAHW en el suministro de servicios sanitarios animales en Kenia. Esto es en parte debido a la falta de información sobre su actuación y en parte porque los programas CBAHW fueron implementados antes de que se hubieran efectuado los cambios necesarios en las estructuras legales, de política, e institucionales existentes. Este estudio se diseñó para facilitar esta información. A este respecto, la productividad de los rebaños de ganado entre granjeros que utilizaban los servicios de CBAHWs se comparó con la del ganado perteneciente a granjeros que utilizaban los servicios de veterinarios profesionales. Los nacimientos vivos anuales por hembra madura (tasa de nacimiento) y la proporción de ganado joven con respecto a hembras maduras (índice de reproducción) fue computerizado durante un periodo de 3 años en rebaños de vacas y cabras bajo el cuidado de CBAHWs y veterinarios profesionales. Las tasas de nacimientos en el ganado vacuno y cabrío bajo CBAHW no fueron significativamente diferentes de aquellas bajo el cuidado de veterinarios profesionales ($p > 0.05$). Más aún, el índice de reproducción del ganado vacuno y cabrío bajo las dos categorías no fue estadísticamente diferente. Además de los servicios clínicos proporcionados por CBAHWs, también se crearon repercusiones positivas a través de un aprendizaje participativo del que disfrutaron los cuidadores de rebaños vecinales, quienes más tarde prescindieron de sus servicios. Se necesita por tanto prestar atención a esta política para aumentar la participación de CBAHWs en el despacho de servicios sanitarios animales e integrar adecuadamente sus actividades en el sistema de despacho sanitario animal formal existente en Kenia. Aquellas intervenciones que mejoren el desarrollo profesional de estos trabajadores, con el énfasis puesto en áreas asociadas al cuidado del ganado joven, no sólo promoverán la sostenibilidad de los programas CBAHW sino que mejorarán la productividad del ganado en las áreas marginales del país.