



Animal Health Service Delivery Systems in Kenya's Marginal Areas under Market Liberalization: A Case for Community-Based Animal Health Workers



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BACKGROUND

Livestock health service delivery in many developing countries is undergoing privatization as part of an international restructuring for economic development. One widely publicized initiative to refocus livestock health service delivery has been the introduction of community-based animal health workers (CBAHWs). This initiative involves training community-selected representatives in basic animal health care and livestock production techniques. The primary objective is to supplement and support the existing but overstretched professional system for delivering such services to communities in marginal areas of many developing countries.

Community-based livestock services in developing countries have received increasing attention during the past decade. This attention has come not only from the communities concerned, but also from several important international development agencies.

Several studies of the concept of community participation and its role in animal health services delivery have concluded that community-based approaches offer viable alternatives to the resource-constrained and poorly functioning public veterinary services in developing countries. In implementing these community-based programs, different countries have adopted different approaches, presumably to tailor the programs to the specific needs of livestock farmers in varied environments. Although numerous terms have been used to describe these differing programs, most of them share similar features and goals. The communities within which they work typically select individuals for training. Technical training in animal health is short, usually less than a month. Low-cost strategies concentrate mainly on important livestock health and management issues of the farming community. Payment for services provided normally comes directly from clients.

Experiences from these programs indicate that, by using existing traditional knowledge, CBAHW programs encourage the participation of the local communities in the design and delivery of animal health care services. The CBAHW model also empowers the local people to determine the type of animal health services they receive. In some areas conditions may exist that would permit full privatization using this approach. This community-based approach has shown that pastoralists and agropastoralists, for example, can organize themselves to select CBAHWs for training and offer animal health services.

In many areas where these programs have been developed, however, no accompanying studies have been undertaken to assess their impact and to establish factors that may influence their success and sustainability. These community-based projects have tended not to collect quantitative data because of resource and logistical constraints, and the need to demonstrate positive impact on animal health to local communities is becoming more apparent. CBAHW programs have become crucial yet controversial components of the privatization design. This study addresses this gap in the literature by assessing the impact of this community-based approach on animal health service delivery, with the objective of evaluating it as a model of animal health delivery in arid lands of the developing world.

This study was designed to help understand the nature, characteristics, and activities of CBAHW programs in marginal areas and their influence on livestock productivity. The aim was to generate information that would guide policy debate about integrating CBAHWs into formal health delivery systems where appropriate. The set of CBAHWs operating in Makueni district, Kenya, was used as a case study.

OBJECTIVES OF THE STUDY

The overall objective of the study thus was to produce information that can strengthen policies for facilitating viable and sustainable CBAHW programs for efficient delivery of animal health services in arid lands of Kenya. Specifically, the study aimed to:

- Document the evolution and structure of CBAHW programs following the privatization of animal health services;
- Assess the performance of CBAHW programs in the delivery of animal health in arid and semi-arid lands (ASAL);

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- Assess the investment opportunities in informal animal health delivery systems in ASAL; and
- Offer suggestions for policy changes to improve animal health delivery systems in ASAL.

STUDY AREA

Makueni is an exceptionally good case study area because of the fundamental importance of livestock in the region's economy, enduring difficulties with controlling major livestock diseases in the region, and its similarity to other arid and semi-arid areas in eastern Africa and elsewhere on the continent.

The CBAHWs studied were based in Mtito Andei division, one of the 14 divisions in Makueni district, which lies approximately midway on the Mombasa -Nairobi road. The region is semi-arid and is covered with dense shrub vegetation. Farmers practice rain-fed agriculture and keep varying sizes of flocks of sheep and herds of goats and cattle. This area borders the Tsavo National Park and suffers from a high level of tick-borne disease and trypanosomiasis transmitted from the park by ticks and tsetse flies respectively.

Makueni district is one of the 12 districts in the Eastern Province of Kenya covering an area of 7,440 square kilometers. It is divided into 14 administrative divisions and 52 locations. It is generally low lying and rises in altitude from 600 meters at Tsavo in the east to about 1,900 meters in the Kilungu hills in the west. A large part of this district is of low agricultural potential. Major livestock products, in order of economic importance, are beef, hides and skins, goat and sheep meat, honey, chicken, and eggs.

Crop farming is mainly for subsistence purposes. The main crops grown in the area are maize, pigeon peas, and cowpeas. Irrigated horticultural farming also takes place in smallholdings along some rivers. The main cash crops include coffee and cotton and are mainly found in the high-potential parts of the district.

Several organizations have been involved in development programs in the district in the past. These programs have included education, crop and livestock production, livestock health, forestry, water, human health, credit, and infrastructure development.

Because of limited funds, one division (Mtito Andei) was purposively selected for implementation of the study. This is the largest division in the district with the highest concentration of CBAHWs and is easily accessible. The division covers an area of 1,809 square kilometers with a population of about 70,000 people. Experience has shown that CBAHWs operating in agropastoral areas, like Makueni have similar modes of operation. These CBAHWs attend to their neighbors' animal health problems in addition to their own, whereas CBAHWs found among pastoralists concentrate more on treating their own animals and only sell drugs to other pastoralists. Therefore, it is assumed that the findings of this case study could be applicable to other CBAHWs working within agropastoral communities.

MODELING AND DATA ANALYSIS

The performance of the CBAHWs was assessed based on multiple regression analysis, with the number of cases CBAHWs handled during the calendar year preceding the survey as the dependent variable. Factors that are likely to keep CBAHWs in active practice were identified using logistic regression. Analysis of variance was used to investigate the differences in productivity between livestock keepers using different animal health delivery systems. This productivity analysis was based on the premise that improved animal management—e.g., regular de-worming and disease prevention—may increase livestock productivity.

FINDINGS AND POLICY IMPLICATIONS

About 79 percent of livestock keepers interviewed had used the services of CBAHWs within a period of one year preceding the survey. 40 percent preferred CBAHWs over all other providers. Of these, 37 percent had used CBAHWs exclusively as a source of animal health services. The rest had used CBAHWs in combination with other channels like veterinary personnel and veterinary drug shops.

Factors found to significantly influence the performance of the CBAHWs included those capturing recent participation in professional development courses, proximity to roads and retail service and input outlets, and non-farming income.

The study found that CBAHWs provided mainly curative health services; many are able to offer other kinds of services, including vaccination, artificial insemination, and training. However, sustainability continues to be a problem. For trainees to continue actively providing services to livestock keepers, the study finds, continual professional development through regular refresher training was important. Odds ratio analysis indicates that a CBAHW that attends three refresher courses is 17 times more likely to stay in active practice than is one who has attended only one course. Furthermore, a commitment to work, shown for example through proper record keeping, is likely to help keep trainees in active practice. Odds ratio analysis suggests that a CBAHW keeping records is over 100 times more likely to remain in practice than is one that does not keep records. Years of stock raising experience and formal education of trainees were found to have a positive but not significant effect on the likelihood that a given CBAHW would remain in active practice. Total income had a negative but insignificant influence on the likelihood of a CBAHW's remaining in active practice.

The study also established that CBAHWs provided services to farmers who have fewer resources than do the farmers served by professional veterinarians. In comparing livestock productivity, the average annual live births per mature female (birth ratio) in cattle and goats herds under the care of CBAHWs were significantly higher than were those under the care of professional veterinarians. Although the livestock of clients of CBAHWs attained improved fertility, this did not translate into a higher ratio of young stock to females (breeding index) compared with the clients of veterinarians. This suggests that young stock within the CBAHW clientele may suffer from higher mortalities than do stock of the veterinarians' clientele. Besides providing clinical services at a fee, CBAHWs also

created positive externalities through the participatory learning enjoyed by neighboring livestock keepers who later dispensed with their services.

Sustainability of the CBAHW model

CBAHWs' levels of record keeping and professional development were the main attributes that determined their level of activity. But given the limited initial training offered to the CBAHWs, it appears that livestock keepers are likely to acquire this knowledge from them and thereafter dispense with their services. Sixty-six percent of the livestock keepers interviewed reported that they had undertaken their own treatment of their livestock within a period of one year preceding the survey. About 40 percent of these livestock keepers revealed that they had acquired this skill from CBAHWs, and 91 percent of them reported that they had obtained the drugs used in treatment from veterinary drug stores. In order to remain financially viable, therefore, CBAHWs must be able to compete with veterinary drug stores for livestock keepers' business. Common sense says that even if the services of CBAHWs include advice and assistance in administration of drugs, livestock keepers will only be willing to pay for drugs priced at levels comparable to those offered by veterinary drug stores. CBAHWs have a competitive advantage over drug stores, however, in that they can lower their drug prices by selling individual doses to livestock keepers. Most drug packaging available from veterinary drug stores is meant to treat several animals, but CBAHWs can sell individual doses by treating several livestock keepers' animals within a few days. The administration of antihelminthics (for gastro-intestinal parasites) and trypanocides (for trypanosomiasis) is particularly amenable to this practice.

It would appear that CBAHWs who do not keep records had difficulty pricing drugs for subsequent sale. For those found to be keeping accurate records made a profit from their activities, whereas those who did not keep records may have been spending more on drugs than they could recoup from sales and therefore were unable to restock their drugs in time to continue offering services.

CBAHWs who regularly enhanced their level of animal health knowledge by attending refresher courses were more active than those who did not. Therefore it is logical to argue that CBAHWs need to remain more knowledgeable than ordinary livestock keepers on livestock health matters. Those who do not enhance their level of knowledge may find their services being demanded less as livestock keepers in their surroundings acquire an equivalent level of knowledge.

Enhancing the record keeping and professional development of CBAHWs will strengthen their capacity in service delivery. Livestock keepers will have easy access to veterinary inputs. They will be able to obtain treatment when required without having to walk longer distances to local veterinary drug stores. Furthermore, livestock keepers will be able to purchase the exact quantity of drugs required. This will reduce the cost of treatment. Livestock keepers will therefore be more inclined to treat or protect their animals with veterinary inputs. At the same time, more knowledgeable CBAHWs will be able to effectively advise livestock keepers on correct drug dosages, especially in areas where livestock keepers are illiterate and cannot follow instructions on drug packets. In the absence of CBAHWs, livestock keepers will have to rely on their own knowledge or on the advice provided by drug stores. However, studies have revealed low levels of training in animal health among personnel manning veterinary drug stores. Under such circumstances, the risks of drug misuse are likely to be greater than when livestock keepers are acting under the advice of CBAHWs. The CBAHWs, although clearly not as well trained as veterinarians or para-veterinarians, appear to provide an improvement over having a few resource-endowed livestock keepers correctly advised by veterinarians or para-veterinarians and the majority of the community receiving no advice at all.

This study has shown that CBAHWs have enhanced the capacity to delivery animal health services in marginal areas. The government can support the CBAHWs through training, and the CBAHWs can in return provide a frontline service in animal health delivery in these areas. There is thus a positive synergy between the government and CBAHWs that the government should consider exploiting.

Regulation and service delivery enhancement

The current licensing requirements for private veterinary practice exclude important types of animal health service providers. The role of CBAHWs is critical in the provision of animal health services in marginal areas, given the state of events and infrastructure in these areas. 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.

Nonetheless, 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 para-professionals. Borrowing from this, a new legislative framework to regulate the activities of CBAHWs and give them an official role could be designed. By legitimizing the activities of these service providers, the state will be able to better 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 could also act as a link between CBAHWs and the Kenya Veterinary Board (KVB), whose mandate as a regulatory body should be widened to include a wide range of activities. Membership on the board should be expanded to include farmers or livestock keepers' groups. The three main stakeholders in the livestock industry, namely the government as the public trustee, the livestock producers, and the animal health service providers, would then jointly formulate policies on service delivery. The new board would act as an arbitrator in disputes and 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.

The current animal health services policy in Kenya is outdated because it was enacted before the wave of liberalization within the African continent. If a review is to be undertaken, a National Veterinary Drug Policy (NVDP) is fundamental and can have a positive impact not only on health delivery, but also on public health and the environment. This policy should include the establishment of an Essential Veterinary Drugs List (EVDL)—that is, a list containing those drugs that have been found to be efficacious and safe for prevention and control of important animal diseases. The EVDL should contain the following components:

- The animal species for which a drug is used;
- Disease condition and usage (treatment or control); and
- Classification—that is, which category of animal health delivery channel should use the drug (qualified veterinarians only, para-veterinarians, CBAHWs, etc).

Such a drug policy could provide the rationale for embracing different components of animal health delivery systems, stimulate pharmaceutical industries to ensure quality control and regular supply, and allow CBAHWs to keep drugs to facilitate their activities. Such a list of drugs should, however, need frequent updating to incorporate advances in scientific knowledge.

Training and support of CBAHWs

The structure and content of training are vital factors in CBAHW programs. The technical content and scheduling of training courses should be planned in the context of the local livestock production system. Training could be expanded to include not only the identification, diagnosis, and treatment of common diseases, but also the handling and use of veterinary drugs and the expected role of CBAHWs in relation to veterinary authorities. Furthermore, the training could be expanded to include broader animal husbandry and production techniques and extension skills. These training and supervision activities should offer an opportunity for active involvement of local private and government veterinarians and para-veterinarians. The training package should be developed through close consultation with the livestock-keeping community, using participatory assessment techniques. It may also be preferential to conduct the training in villages rather than in urban centers. Emphasis should be given not only to animal species and health problems present in the area, but also to likely epizootic diseases that could afflict the area. All programs should emphasize the importance of refresher training and field visits. The activities of CBAHWs should remain community funded, whereas the government should handle the supervisory role.

RELEVANCE OF THE FINDINGS TO OTHER COUNTRIES

Policy attention is needed to appropriately integrate the activities of CBAHWs within the existing formal animal health delivery system in marginal areas of Kenya. Interventions that improve the professional development of these workers, with emphasis on areas pertaining to care of young stock, would not only promote sustainability of their activities but also improve livestock productivity in marginal areas. These findings have wide applicability.

Problems in redesigning the structure of animal health service delivery to livestock keepers in response to the privatization process are common to most African countries. Public sector, budgetary constraints and external pressures mean that livestock keepers must meet larger shares of costs of services increasingly provided by private operators. This study indicates that arid and semi arid lands — where millions of livestock and their owner reside — do not provide conducive environments for high cost private veterinary practice. The results point to support for CBAHWs as a low-cost and sustainable strategy. However, supportive institutional and legal frameworks — which are currently lacking in most African countries — should first be developed. Further, CBAHWs require training in new skills and competencies if they are to be viable in the long run.

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