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A Net-Map insight into veterinary service delivery in Kenya

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Introduction

Livestock production plays a very critical role in the livelihood of the rural populations in Kenya (Kristjanson *et al.*, 2004; Kosgey and Okeyo, 2007). Privatization of clinical veterinary services in the early 1990s resulted to emergence of different livestock health service delivery systems depending contextual factors and livestock service attributes (Umali *et al.*, 1992; Oruko *et al.*, 2000). These players include private and government veterinary surgeons, private and government animal health assistants (AHAs), community based animal health workers (CAHWs) and non-formally trained Para-professionals (Irungu *et al.*, 2006). However, the key service providers to small scale dairy livestock keepers who also contribute about 60 to 80% of Kenya's milk output still remain largely unclear (Oruko *et al.*, 2000). This study aims to determining the key actors, the linkages between the various stakeholders and their interactions in the process of livestock service delivery in the rural areas of Kenya, taking Kakamega County as an example.

Material and Methods

Two surveys were conducted in this study. A structured questionnaire was administered to 128 smallholder dairy farming households selected using a two-stage cluster sampling technique. The household questionnaire mainly captured information on farmer characteristics, farm characteristics, livestock production and disease control and management among others. The second survey targeted service providers (both government employed and those in private practice). Both semi-structured questionnaire and open ended discussion regarding delivery of livestock services in the area were used. The service providers' questionnaire dwelt mainly on delivery of animal health and breeding services in the study area. A total of 30 livestock service providers were interviewed. The service providers were then later asked about their professional networks, occupational profile and their perception about the working environments. Later, a team of livestock service providers drawn from both government and private practice were selected to participate in the mapping of the key actors in the livestock delivery systems in the area using the Net-Map Tool developed by Schiffer (2007) of International Food Policy Research Institute (IFPRI). The Net-Map tool is an interactive interview based mapping tool which can be used to help people understand, visualize, discuss and improve situations in which many different

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actors influence the outcomes. Creating the influence network maps enables individuals and groups to clarify their own view of a situation, foster discussion and develop a workable approach to their networking activities. Through the use of the Net-Map tool, the researcher together with the net-map players were able to map out the key actors involved in the livestock delivery in the area, the types of interactions between them and the level of importance of their roles in the veterinary service delivery to livestock keepers.

Results and Discussion

The average land holding is 4.99 acres, approximately 2 ha¹, with 67.2% of the surveyed household having less than five acres (2 ha) of farming land. These figures tally closely with the findings of Musalia et al. (2007) in which it was revealed that the average land size owned by dairy farmers in selected districts of Western Kenya was 2.4 ha. Considering the fact that the two studies were carried out in the same region, the difference in figures of average land size can be a clear indication of a decline in average land holding, which can be attributed to the growing population and continuous subdivision of land due to intergenerational inheritance as siblings demand their share of inheritance, resulting to fragmentation of farms. This trend had earlier been observed by Bebe et al. (2003) among the smallholder dairy farmers in the Kenya highlands where it was noticed that it is one of the major driving forces towards intensification process of livestock production. Only 2.3% of the respondents use AI services, which is rather low but not surprising. It confirms the observations of Bebe et al. (2003) of the declining trend of the provision of AI services to the farmers following liberalization of animal health and breeding services in the early 1990s. Some of the most prevalent diseases are tick borne diseases such as East Coast Fever (ECF), anaplasmosis and babesiosis which account for 32%, 16% and 7% of all the reported cases. Prevalence of tick-borne diseases is one of the major constraints to livestock production in Kakamega County as is the case in many parts of Kenya and many tropical countries especially in Sub Saharan Africa, confirming the views of Thornton (2010). The most prevalent disease is East Coast Fever (ECF), a situation similar to the observations made by Oruko et al. (2000) among dairy farmers in Kilifi District and also by Bebe et al. (2003) among smallholder dairy farmers in the Kenya highlands.

Descriptive statistics show that privately practicing animal health assistants are the key livestock service providers attending to 38% of all the reported cases (See Table 1).

Table 1. Proportion of cases attended to by various service providers

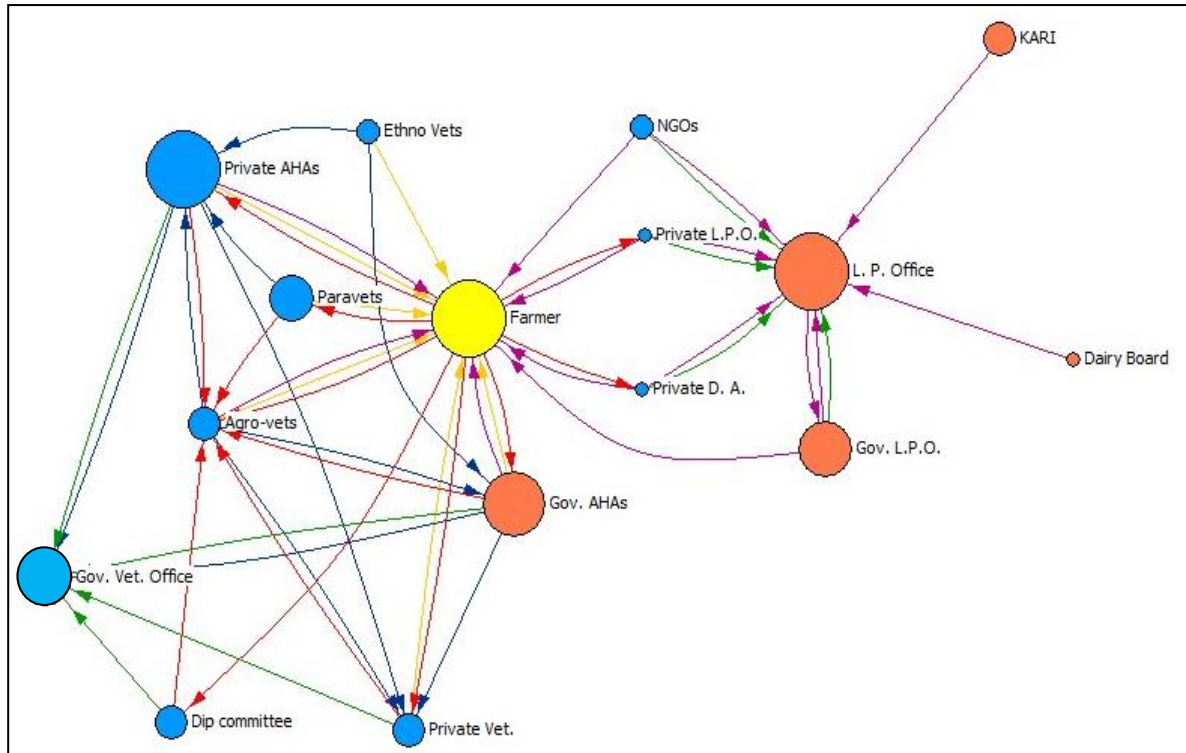
N=71	Category	Frequency	Percent
Valid	Private Vet. Surgeon	2	2.8
	Drug seller	1	1.4
	Government AHAs	15	21.1
	Para vets (Quacks)	19	26.8
	Traditional animal doctor	7	9.9
	Private AHAs	27	38
Total		71	100

However, there is also a wide coverage 27% of all the reported cases by the non-formally trained paraprofessionals. From the colonial times till the early 1990s, livestock service delivery has been the domain of the public sector (Oruko *et al.*, 2000). Liberalization of both clinical and breeding services has prompted the entry of many players into the market of livestock service delivery (Oruko *et al.*, 2000; Murage & Ilatsia, 2010).

¹ (1 acre = 0.4047 hectares)

The actors and their network

Figure 1 outlines the linkages and the types of interactions between the various livestock service providers. Livestock services delivery systems can broadly be categorized into three main categories as outlined by Mirajkar et al. (2011). These include the animal health services, the livestock production and extension services.



KEY

- Gov. Vet. Office = Government veterinary office
- Gov. AHAs = Government Animal Health Assistants
- Private D. A. = Private Dairy Assistant
- L. P. O. = Livestock Production Officers
- L.P. Office = Livestock Production Office
- KARI = Kenya Agricultural Research Institute

LEGEND

- Extension services
- Farmer
- Clinical /Veterinary services
- Reporting
- Referrals
- Delivery of clinical services
- Delivery of extension services
- Payments

Figure 1. A Net Map diagram of actors in the livestock service delivery system in the area

The animal health service delivery system in the study area is structured in such a way that there are three main groups of actors involved, i.e. the government veterinary service providers, the livestock production officers and the private veterinary service providers as illustrated in Figure 1. The Net-Map diagram illustrates the high level of service dominance by the private animal health assistants (Private AHAs) in the provision of veterinary services to farmers, (The bigger the circle, the more important is the livestock service provider to the farmer). The government veterinary office which houses the government animal health assistants acts as a coordinating

office for disease monitoring and surveillance. The livestock production office acts as the coordination office for extension services. All the service providers purchase veterinary supplies from the agro-input dealers, commonly known as agro-vet shops. Livestock production officers (Gov. L.P.O.), through the livestock production office (L.P. office) offer extension services to farmers. The livestock production office acts as the coordinating office for the livestock extension services. These actors in the livestock service sector who include government employed and private veterinary surgeons, government employed and private animal health assistants (AHAs), livestock production officers (LPOs) and non-formally trained Paraprofessionals, herein referred to as paraprofessionals or Para-vets are interlinked and sometimes closely interact with each other in the process of service delivery to the farmers.

Key actors and networks in the livestock service sector

The key actors in veterinary service delivery in the study area are the private animal health assistants as illustrated in the Net Map diagram. The high presence of private practitioners is a result of the privatization process. Increased private practitioners participation was one of the main aims of privatization as stipulated in the policy guidelines of Gok (1996) cited in (Oruko *et al.*, 2000). The presence of non-formally trained paraprofessionals may be an indication that there exists a gap in the delivery of veterinary services that needs to be filled. Their presence coupled with low coverage of the professional veterinary surgeons makes the quality of veterinary service in the study area debatable. These findings confirm the observations by Musalia *et al.* (2010) that the quality of veterinary service in Kakamega County was generally low as the farmers preferred to use the less experienced animal production officers and animal health assistants because they charge less. It further corroborates the observation by Cheneau *et al.* (2004) that a great majority of the rural poor still don't enjoy the range and quality of services required to support the growing livestock related livelihoods.

As illustrated in the Net-Map diagram, government employed animal health assistants report the complicated cases that they cannot handle to the District Veterinary Officer (DVO). The non-formally trained paraprofessionals refer complicated cases to the private animal health assistants (private AHAs), whom in case of complications, further refer their cases to the private veterinary surgeons. This kind of arrangement is similar to that observed by Rubyogo *et al.* (2005) among community animal health workers and the animal health assistants in Mwingi District where community based animal health workers refer complicated cases to animal health assistants who further refer to the District Veterinary Officer in case of complexity. There also exists a legal requirement that requires private practicing animal health assistants to report their activities to the District veterinary office.

Conclusions and Outlook

The reporting and referral mechanisms that have been established between animal health assistants and the private veterinary surgeon as well as the veterinary office are steps in the right direction. However, the presence of some non-formally trained paraprofessionals jeopardizes the quality of the services offered to some unsuspecting farmers contrary to the aim of privatization. This calls for a strong regulatory framework to ensure that the quality of veterinary services is upheld since the focus of the privatization process was to increase private sector participation in the delivery of clinical services with quality assurance.

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