Institutional Framework and Farm Types Characterising the Kenya Boran Cattle Breeding Programme

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Abstract

Structured breeding programmes have three core platforms: performance recording, planned mating and genetic evaluation, performed either by government or non-governmental organisations. The organisational structure supporting the breeding of Kenya Boran cattle is presented here. The organisational players range from government institutions, national agricultural research systems to cattle keepers. The structure is not exclusive to Boran cattle (other cattle breeds also benefit from these institutions), nonetheless, the Boran breeders are considered one of the most active breeders' associations. The roles of the stakeholder institutions are described. These institutions include: The National Beef Research Centre, the Central Artificial Insemination Station, the Livestock Recording Centre and the National Agricultural Research Systems. The organisational structure also depicts the informal interactions between interest groups such as the Animal production Society of Kenya and also between the different farm types keeping Boran cattle. Since 1951, Kenya Boran cattle have undergone some level of organised management and strategic breeding under the Boran Cattle Breeders' Society. Today, there are five main categories of commercial beef ranches in Kenya (approximately 454 ranches in number) sub-divided on the basis of ownership as: group ranches (321), private company ranches (84), cooperative ranches (17), public company ranches (2) and government ranches (30), a majority of which are group ranches and private ranches. The institutional framework presents possibilities for the establishment of sustainable long term breeding programmes for the Kenya Boran cattle. As the breeding organisation changes from government driven to farmer driven, the role of the Boran Cattle Breeders Society has to change from just information users to decision makers matching animal mating decisions with information from genetic evaluation.

Introduction

Strategies for sustainable development build on in-country systems, which provide coordinated sets of participatory processes, at national and local levels. A good strategy needs to develop into an iterative learning system from the development of a shared vision to the management of sustainable development. In the 2002 World Summit on Sustainable Development, the Millennium Declaration and particularly the Millennium Development Goals adopted in 2000 were reinforced. The summit pledged to; *"integrate the principles of sustainable development into country policies and programmes, and reverse the loss of environmental resources"* (www.undp.org). To achieve this goal, strong in-country institutions relevant to the shared vision are needed for the various sectors of the economy. Agriculture, and especially livestock production is an important sector in Kenya. The livestock sector in Kenya has a thriving beef industry that benefits from a very consistent and active local market and the availability of a robust beef breed, the Kenya Boran cattle. One of the challenges for the beef industry has continued to be the lack of consistent supply of quality breeding stock for the Boran cattle breeders. This challenge has been aggravated by the lack of support for sustainable breeding programmes due to infrastructural bottlenecks and weak institutional involvement. Kenya has a number of agricultural institutions that were established to respond

to the needs of cattle keepers, however, coordinated efforts for systematic development of breeding programmes have been lacking. This study explores the intuitional framework and farm types characterising the Kenya Boran cattle with the aim of defining strengths and weaknesses and possibilities for improvement.

Materials and Methods

To identify the institutional support available for Boran cattle breeding in Kenya a selective review of literature coupled with key-person interviews was employed. The studies reviewed included those that reported exclusively on organisational development of Boran cattle farmers as well as their interrelationship with government institutions, research institutions and animal production companies (Heath, 2001; Rege *et al.,* 2001; Aklilu, 2002; Animal Genetic Training Resource 2, 2006; Gamba, 2006; Kahi *et al.,* 2006; Rewe *et al.,* 2006; BCBS, 2007). The breeding policy for Boran cattle in Kenya was assumed to reflect the recommendations of Meyn and Wilkins (1974) that suggested that commercial Boran cattle production is to be practiced in semi-arid rangelands. The key persons were selected based on the importance of the supporting institutions they serve in, namely the, Boran Cattle Breeders Society (BCBS) and the Boran cattle ranchers. The contact persons were consulted for unpublished information on cattle population, breeding herd management and breed standards using open questions. The interrelationship between the stakeholder institutions with respect to their contribution to Boran cattle breeding was analysed, depicting the organisational support available for sustainable breeding of Boran cattle.

Results and Discussion

The organizational structure supporting the breeding of Kenya Boran cattle is presented in Figure 1. The organizational players range from government institutions, national agricultural research systems to cattle keepers. Boran cattle breeders are considered one of the most active breeders' associations (Kahi, 2007). The main institutional stakeholders include the Central Artificial Insemination Station (CAIS), which is the national AI service, the Livestock Recording Centre (LRC), which doubles up as a database manager for animal recording and a genetic evaluation Centre. The LRC established in 1973 a separate department for beef cattle namely, the Kenya Beef records (KBR) (Kahi et al., 2006). The National Agricultural Research Systems (NARS) manages research activities, and the different farm types keeping Boran cattle (Rege et al., 2001). Beef cattle breeders measure and keep animal records which are to be primarily collected from the various farms for analysis at the LRC. The information on breeding values for the main selection groups, especially bull sires is to be sent back to the farmers who make informed decisions on which bulls to use and which ones to transfer to the commercial herds. The decision making body is the BCBS secretariat supported by experts from the NARS. The cost of a breeding programme could therefore be shared between the beef cattle farmers, BCBS and the LRC, with a bulk of the costs falling on the BCBS. Notably, current revenue collection for BCBS could be restructured to bolster its ability to manage the breeding programme. For example, apart from receiving membership fees, BCBS could also receive a commission for every sale of breeding stock and charge a levy for the use of its brand name, which could be widely marketed to consumers to inform their choice for Boran meat. The main marketing arm for the beef industry is the Kenya Meat Commission (KMC) and private butchers. The collapse of KMC in the late 1980s led to full privatisation of beef marketing and price increases. However, recently the reestablishment of KMC has renewed organised marketing for beef (Gamba, 2006).

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Kenya Stud Book (KSB), forming the breeder group of the society (BCBS 2007; P. Valentine, personal communication, 2008). The KSB is a government agency that keeps pedigree records of purebreds for various animal breed societies; this responsibility has been handed over to the Livestock Breeders Organisation (LBO). Kenya Boran cattle totaling over 580,000 heads are found in different farm types, many of which are not members of the BCBS. These types include group, company, private and government ranches, some of which are no longer operational due to multiple factors including competition from illegal grazers and banditry (Heath, 2001; Gamba, 2006; Animal Genetic Training Resource II, 2006). Over the years, active Boran cattle breeders have supplied their own cow replacements and breeding bulls with minimal introduction of animals from commercial herds into the stud herds (closed nucleus). The most important roles of BCBS are to maintain breed standards and explore markets for Boran genetics. The breeder's society introduced standards for registering typical Kenya Boran cattle which are executed by a panel of inspectors. The main standards for qualification include an animal's purebred status as an offspring of purebred parents, at least one of which should be registered with the stud book. The animal must meet the weight, conformation and colour standards of the breed. An important consideration related to the breed standards is the management aspects of the animals that must correspond to the minimum feeding, health and other routine management practices that support the maintenance of the breed on-farm (BCBS, 2007).

General discussion

There are three core platforms for structured breeding programmes, namely: performance recording, genetic evaluation and planned mating, which are either performed by government or non-governmental organisations. In developing countries, especially in Africa, most livestock breeding activities are implemented on a national scale by government institutions working with foreign development agencies with no leader roles for participating livestock keepers (FAO, 2007). This phenomenon has hampered the success of many well intended breeding programmes in these countries (Sölkner *et al.,* 1998). Breeding organisations and private companies have been described as effective non-governmental stakeholders that can implement successful breeding programmes (FAO, 2007). However, all key stakeholders namely, government, animal breeders and research organisations, are important in the organizational structures that constitute functional breeding programmes. In developed livestock industries, two forms of organizational structures are common, farmer's cooperatives and shareholder controlled companies (Miller, 2002). The development of these organisations has in most cases been preceded by the formation of breed associations. As the breeding organisation in developing countries changes from government driven to farmer driven, the role of professional cattle breeders will change from just information users to decision makers, consequently leading to livestock breed associations playing a major role in making animal mating decisions matched with information from genetic evaluation (Miller, 2002).

In Kenya, the roles of the stakeholder institutions differ significantly in relation to their influence in Boran cattle breeding. Most of the institutions (Figure 1) are government institutions, including public universities. It follows that political decisions play a major role in the efficiency of their functions. Over the years, political interference that led to underutilization of resources contributed to low human resource output as well as non-performance of these institutions (Heath, 2001; Gamba, 2006; Kahi *et al.,* 2006;). Transforming these organisations into independent parastatals (autonomously run government institutions) could be helpful in enhancing their ability to deliver services to farmers. The success of the Boran cattle breeding programme depends on the strength of the association between the BCBS and the stakeholder institutions that manage essential services in the breeding industry in Kenya. Even though these supporting institutional structures are not working at their optimum, the fact that they exist is a strong point for the breeding programme establishment. The most important institution is probably the BCBS because of its direct influence on the cattle in question. The organisation exerts influence from the breeding to the marketing of breeding stock showing reasonable levels of organisation. The continued sound

performance of Boran cattle in semi-arid rangelands presents an encouraging sign for success of the programme. Despite their susceptibility to some tropical diseases, Boran cattle have continued to produce a good quantity of meat from dry grassland pastures with minimal or no feed supplementation at all (Rewe et al., 2006; Animal Genetic Training Resource II, 2006). However, the major challenge to be overcome relates to sharing the responsibility of managing the breeding programme. For example, the three main stakeholders, Boran cattle farmers, BCBS and LRC, need to form a binding committee to oversee the day to day activities of the programme. The formation of such a committee is compounded by the fact that LRC is a government institution that is controlled by policies of government which at the moment have not put a high priority on animal breeding. Appropriation of funds for breeding activities will require enactment of effective breeding policies to activate the LRC and legalise activities of BCBS and other breeders' societies in trading and handling of animal breeding material. Computerisation and centralisation of animal data from the dispersed breeding herds poses another major challenge considering that the fiscal and technological infrastructure is still a work in progress in Kenya. Nonetheless, consensus has to be built on the need for a breeding programme if demand for reliable breeding stock for local and international customers is to be met. This is probably the driving force that allows the stakeholder institutions to gradually but positively adjust to deliver the breeding programme to Boran cattle farmers in Kenya.

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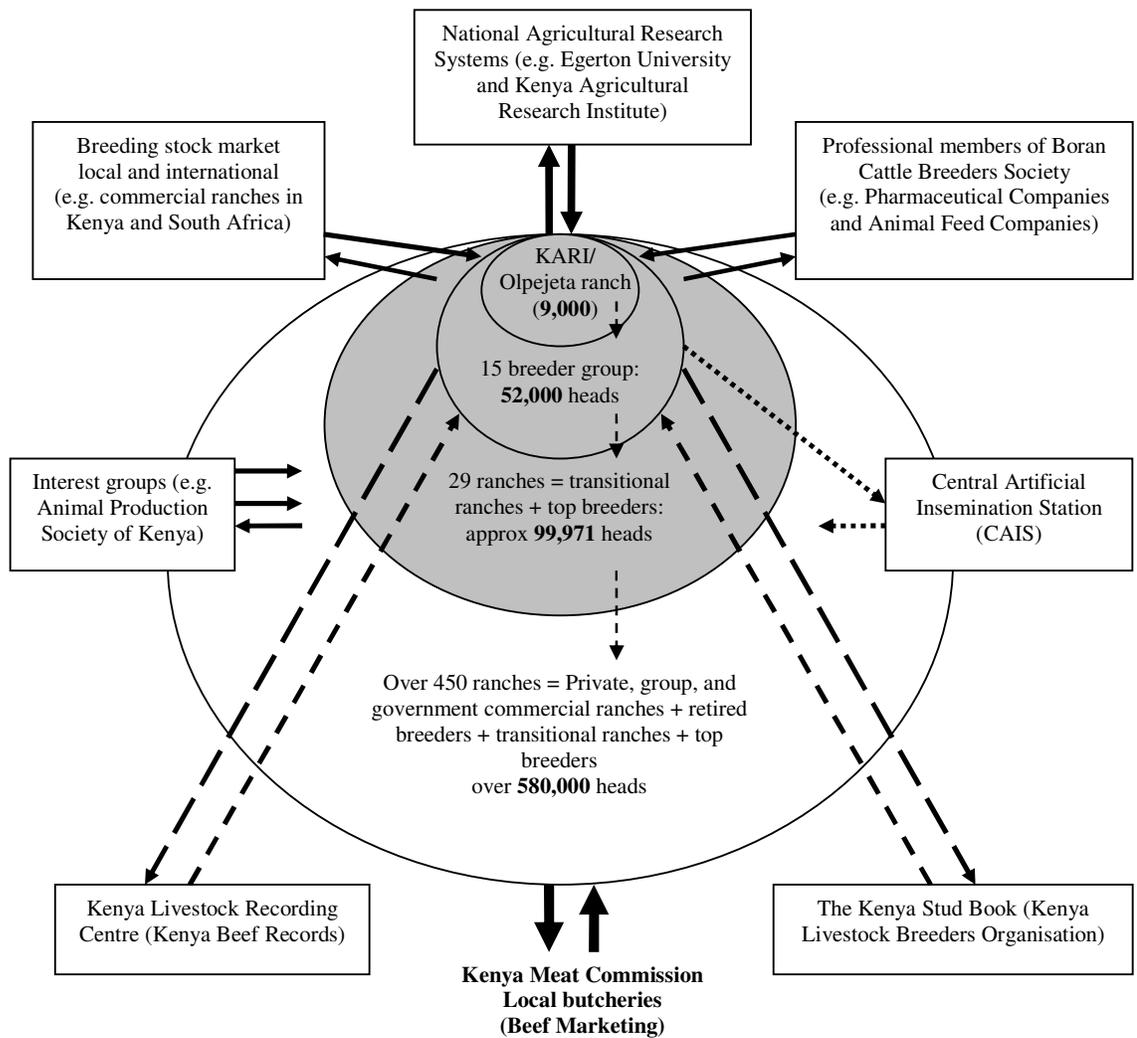
Figure constructed based on information from: Rege et a., 2001; Aklilu, 2002; Animal
Genetics Training Resource, version 2, 2006; Kahi et al., 2006; BCBS, 2007;

Key: Joined lines indicate strong interaction while dotted lines indicate informal
interaction either through exchange of breeding material between the
informally perceived tiers in the Boran Cattle Structure, data recording, or
market information

Core membership of Boran farms in the Boran Cattle Breeders Society

Figure 1. Organisational structure depicting the Boran Cattle Breeders Society, Kenya Boran
cattle keepers and institutional support in the Kenya Beef cattle breeding industry