Genetic resources quality standards enforcement Challenge in Kenya: perception of stakeholders

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This brief is based on a qualitative study involving focus group discussions (FGDs) and interviews with diary sector stakeholders to elicit their views about enforcements of quality standards associated with genetic resources/semen in the Kenyan context. Genetic material in this section largely refers to the semen used by AI inseminators.

Background

Artificial Insemination (AI) has proven to be an effective technique of breeding in the dairy sector compared to the beef sector with a population of ≤1% bred through AI (Makoni et al., 2015). AI aims at improving dairy productivity & fertility, minimize disease transmissions and increase calving rates (Karanja, 2003). In Kenya, 95% of insemination that occur are conducted by the private service providers and cooperatives following liberalization of the dairy sector (Makoni et al., 2015). The provision of AI services by the private sector and farmers groups has rapidly increased the access to superior germplasm to smallholder dairy farms (SNV, 2013; Wafula and Creemers, 2018).

An increased use in AI has been reported by Muia et al (2011) as a result of increased intensification of production, improved access to credit facilities and extension services. According to Makoni et al. (2015), the use of AI in the Kenyan dairy sector has a projected estimate of 1.5% increase from 650,000 to 2.3 million inseminations annually by 2023.

Despite the increased uptake of AI in Kenya, the sub sector has faced several challenges including; high cost of semen and services, low quality of semen and reduced access to the services due to insufficient number of qualified AI personnel in the field (Murage & Ilatsia, 2011; Mwanga et al. 2018). In addition to this, progress in the dairy sector has been hindered by the unregulated and uncoordinated AI activities in the livestock sector (Odero-Waitituh, 2007). This has resulted to a decline in the performance of the dairy herd within the smallholder dairy farms (MoA&I, 2018). This is confounded by unfavorable policies and legal frameworks to sustainable genetic resources (MoA&I, 2018).

Arguably, these reasons may have caused many small-scale farmers to turn to use of bulls for breeding purposes and hence the reduced use of AI by small-scale farmers (Technoserve, 2008; Mutavi et al. 2016).

Empirical studies about the nature of services pertaining to acquisition and provision of genetic resources and veterinary services to small-scale dairy livestock keepers are scarce (K'Oloo et al. 2015). In addition, the network of actors providing these services is quite complex whereby animal health services and livestock production and extension services are intertwined.

Key findings

✓ There is a disconnect amongst the semen providers, suppliers and AI service providers in ensuring quality standards.

✓ Inadequate coordination among the semen suppliers and AI service providers in quality adherence.

✓ There is lack of proper mechanisms in reporting and dealing with non-compliance in relation to AI service delivery.

✓ Human and infrastructural capacity challenges at different scales to provide regulatory oversight in semen supply and AI service providers.

Recommendations

❖ Public-private coordination in ensuring quality genetic resources and efficient service delivery along the dairy value chain.

❖ Stronger farmers' groups advocating for quality semen and service delivery.

❖ Close working relationships between National and county governments in monitoring and reporting operations of AI semen and service providers.

❖ Holistic capacity building involving all stakeholders including farmers.

Key findings

Majority of the respondents (53% key informants versus 100% or all the 7 FGDs) were dissatisfied with quality of semen they accessed from AI services (Figure 2). To qualify this perception, their assessment was based on the observed increased repeat insemination services per cow and low conception rates following use of AI.
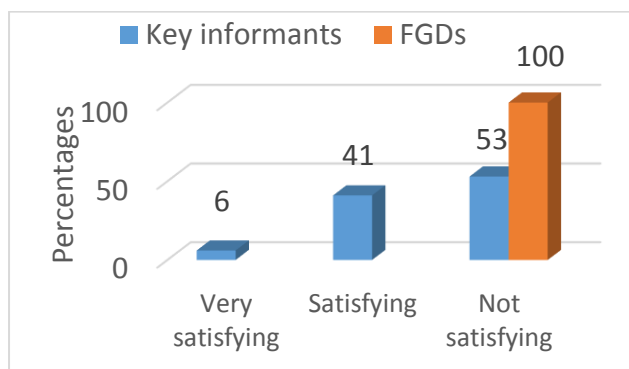
Figure 1: Level of satisfaction with quality of AI/genetic resources

These varying levels of were based on different factors that are described below.

The government through various agencies is mandated to provide support services in the AI sub sector. The department of veterinary services (DVS) supports in the issuance of import permits and collection of AI returns. The Kenya Animal Genetic Resources Centre (KAGRC) supports in the supply and delivery of semen and liquid nitrogen. However, there has been a conflict of interest post-devolution after the county government took over the role of enforcement of semen quality standards from the DVS. Recently, the role of regulation and provision of extension services in AI has been transferred to the Livestock Genetic Society of East Africa (LGSEA).

Explaining the varying perceptions on quality of genetic resources in relation to quality standards

- **A disconnect between decreasing quality of AI and enforcement of quality standards**

Increasingly, farmers are experiencing decreased quality of the services provided by AI service providers irrespective of cost or availability of service. In addition, some farmers reported that AI inseminators are concerned primarily with administering semen and are less concerned with enforcement of quality standards.

- **Uncoordinated regulatory efforts by government agencies**

Enforcement of standards is a responsibility of mainly the county government and the Directorate of Veterinary Service (DVS) but their efforts need to be coordinated.

- **The high cost of genetic resources may be attributing non-compliance with quality standards**

The majority of FGDs (6 groups out of 7 or 86%) perceived that farmers may be accessing low quality genetic materials at high costs. This is compared to 49% of the key informants who perceive that farmers may be accessing high quality genetic materials at high cost and 37% who perceive that farmers may be accessing low quality genetic materials at high costs (Figure 2). These results suggest that there is a direct relationship between cost and declining use of AI services versus increased use of bulls as source of genetic resource.
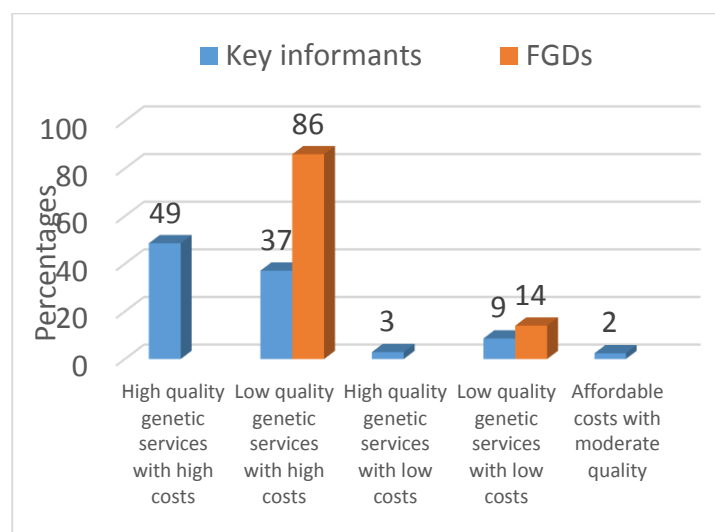
Figure 2: Perception levels on the quality of genetic resources versus cost

Arguably, with increased number of supply chain actors there will be increased cost to be met by ultimate farmers (Figure 3). Furthermore, due to expensive genetic resources, some farmers are unable to access the right quality genetic resources for production and reproduction (ILRI, 2015; SNV, 2013).
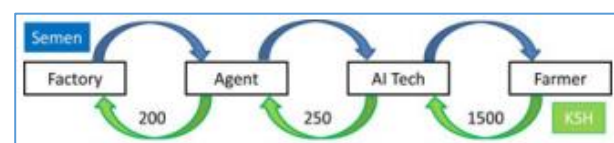
Figure 3: AI supply chain from factory to farmers. Source: Ojango et al., (2016)

Ineffective monitoring for genetic resources quality standards

The majority of key informants and the farmers in the FGDs were of the opinion that the respective standards and regulations for genetic resources are not being implemented as they should. They attributed this to inadequate policies, inadequate personnel, and corruption.

Lack of capacity and related knowledge by regulators is a major issue in the AI service provision. The problem of inadequate staff is complicated by low technical knowhow and competence of veterinary officers and animal health assistants licensed to practice AI service.

Implications of ineffective enforcement of standards for quality genetic resources and advisory service

The adherence to standards for genetic resources is a major challenge in the dairy industry

AI in the dairy sector is poorly regulated thus allowing a large number of AI service providers to operate without licenses. Further, there are challenges associated with lack of proper work ethics, skills and transparency of AI service providers. AI service providers require refresher training courses to ensure their effective compliance to quality standards.

Human and infrastructural capacity is a major factor affecting an efficient quality assurance system

County government officials lack knowledge & capacity to provide the following services; licensing, supervising, reporting and regulation of AI providers. There is need to offer technical capacity building to these regulators to ensure they effectively execute the mandated duties. Before devolution, AI service providers reported all their activities involving successes and failures to their corresponding District Veterinary Officers (DVOs) for ease of monitoring and evaluation. This has changed significantly. There is poor record keeping thus making it difficult to regulate and monitor the provision of quality AI services.

Accessibility and choice of genetic resources

The high cost and low-quality semen have caused most farmers to revert back to the use of bulls for breeding as an alternative to AI. Some county governments offer subsidized AI semen to dairy farmers with the intention of offering high quality genetic resources at affordable costs. This has implications, one being an observed gradual decrease in the quality of the semen as well as the accessibility of the AI services. This coupled with low monitoring of the quality of the subsidized semen and insemination services may not ensure economic and productive sustainability of the subsidized semen by the county governments. There is need for increased awareness creation in this regard.

Figure 4 : AI service provider administering semen

Key messages

There is need to build requisite capacity for standards and regulation enforcement/implementation at the national, county and grassroots levels. The different capacity needs entail the following:

i. Technical capacity/ skills building
  There is need to train technicians and streamline educational curriculum to ensure a holistic training of livestock officers. In the licensing and monitoring provisions, the county governments have a responsibility to ensure proper training for animal health.

ii. Infrastructural capacity
  Proper localized laboratories, mobile testing tools and storage facilities are crucial to ensure an efficient breeding system in the dairy sector.

iii. Creation of awareness about quality standards at the level of policy makers (national and county levels) and grassroots farmers.

iv. Create a conducive ecosystem for public private partnerships in the genetic resources quality assurance.

v. Accountability for compliance or non-compliance to genetic resources quality standards. Support structures for reporting of unethical practices.

Policy recommendations

a. Review existing policies and enact draft policies and strategies through a collaborative process involving all stakeholders. Harmonize National and County policies/guidelines for an efficient and coordinated implementation.

b. The government to work with the county governments to regulate operations of private AI providers. Proper monitoring is essential to ensure quality semen is imported and administered at the grassroots level. Regulations need to be put in place

to ensure that only semen from productive/ well adaptable breeds is imported.

c. A public private partnership approach to a national wide campaign to sensitize the stakeholders about standards and requisite implementation. Counties should lead in this endeavor.

d. Coordination of regulatory programs is essential. The government should involve private sector in regulatory programs including capacity building. This would ensure improved enforcement of relevant regulations towards enhanced quality of genetic resources including AI services.

e. Farmers need continuous capacity building to ensure quality standards are maintained in processing and

distribution all through to insemination for quality genetic resources. Farmers also need capacity building on bull selection and follow up mechanisms before and after inseminations for easy upgrading processes.

f. Increased accessibility to high quality genetic resources at affordable costs needs to be undertaken by the semen suppliers and distributors to minimize the continuous use of low-quality bulls/semen.

g. Proper and well-equipped laboratories and gene banks should be installed at county levels for proper preservation/ storage of genetic resources.

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