Smallholder sheep farmers in Narok County benefit from KALRO/ICARDA’s support on improving sheep value chain

Sheep rearing has been widely promoted in many countries and particularly so in the arid and semi-arid lands (ASAL) as a major contributor to rural development. Sheep production is a way of life for the communities in the lowlands of Narok. The sheep are regarded as ‘Automated Teller Machine’ (ATM) in the county because of their immense socio economic significance. To the Maasai community of pastoral Narok, sheep are petty cash and is must have for every farmer. In the County, sheep are the most populous livestock, numbering 1.6 million followed by cattle that are slightly below one million.

Sheep are majorly grazers, fast growing and have high twining rate, an attribute that make them combine well with the wheat enterprise practiced in many parts of the County. Their ability to feed on the crop by-products; bean haulms, maize stover, fallen wheat grains and wheat straw make them a major component of the production system.

The International Fund for Agricultural Development (IFAD), KALRO/ICARDA phase II project set out to work with farmers in improving sheep rearing and products in the county. The project had three facets: improving sheep nutrition, improving sheep genetics and establishment of onfarm sheep finishing for market, developed a model; code named Sheep Research to Business (R2B) to actualize the intervention. The success of the R2B model was dependent on availability of quality fodder, a strategy achieved by the establishment of a two acre (0.75 ha) of Boma Rhode grass in April 2015. The plot served as seed bulking plot for harvesting the seed and expanding to other farms. Sheep weight gain is a factor of feeding, health and breed. In order to improve on the genetics of the indigenous sheep breed, Red Maasai (RM), an upgrading scheme with the fast growing Dorper was initiated. Six pedigree Dorper rams were purchased from a reputable sheep breeding farm in the Country, Gicheha farm, and distributed to the farmers for enhancing the gene pool.
The sheep onfarm finishing for market component also involved the development of feedlot and other accompanying facilities – sheep pen, hay barn, watering and feeding troughs and shepherd house. The R2B model piloted on-farm lamb feedlot finishing of 134 lambs of 4 months old that were contributed by the participating farmers. A Pilot 10 acres feedlot plot, land donated by one of the participating farmers, was established at Nturumenti and planted with Boma Rhodes grass sown with wheat for fattening the lambs. The project initially worked with 40 individual farmers, 20 from Nturumenti and 20 from Olulunga. Each of the participating farmers had also planted 2 acres of improved wheat varieties sown together with boma Rhodes grass seeds, all donated by the project. The straw from the wheat plot was used to enhance nutrition of sheep for the farmer. Even though the project was working with a community based organization (CBO), AntiFGM Poverty and Aids Organization (AFAMPO), they willingly allowed none participating farmers to engage in the activities.

The project organized and trained group of farmers on technological packages (sheep management, housing, strategic deworming, treatment, sheep calendar, feed processing and conservation, important sheep data and recording, live weight estimation and closed castration). The first training was conducted on 8th July 2015 involving 4 ladies and 17 men while the second training held on 9th July 2015 with 5 ladies and 17 men participating. Additional farmers were trained later in diverse dates totaling to about 80. A group of 3 farmers was taken to Gicheha farm in Ruiru, Kiambu County, a reputable commercial sheep breeding farm for breeding management exposure.
Two open day fora were also facilitated by the project, one being low key open day/leaders consultative forum held on 8/4/2016 and attended by 19 stakeholders inclusive of 13 farmers. This particular event was very important since the leaders developed the road map for establishment of a livestock auction yard at Nturumenti Centre. The ground work of market yard was laid out and the auction of the finished sheep lambs acted as the first market day of the envisioned livestock market yard. The second event was a major field day held on the day of auction of the finished sheep lambs on 11/4/2016 and attended by over 50 stakeholders including farmers, livestock traders, extension officers, abattoir/butchers, meat processors, scientists, donor representative, political leaders and the local administration.

Indeed, the sheep R2B model is promising to revolutionize sheep enterprise in the study sites even though its initial profitability is minimal because of the immense initial capital requirement. Nevertheless, the concept is adding value to an important and sustainable alternative source of petty income to rural pastoral areas that will benefit communities by enhancing their livelihoods.

The public auction for the finished sheep lambs was indeed successful and an initial flock of 60 finished lambs weighing 30 (kg) and above sold out and on live weight basis, KES 130/kg, as the project intended. The remainder were disposed off within a week. Most of the farmers observed that the new method of sale, live weight basis, was better than visual assessment system. According to the farmers, the finished lambs returned profits of upwards of KES 2300 a piece and took 3 months to finish as opposed to the farmer practice of fattening for a period of more than 3 years. Therefore, the project working with the CBO, managed to pioneer the sale of finished sheep lambs on live weight basis and through public auction forum which was a new experience in the area. The fattening experiment observed that it was possible to finish and market sheep within a period
of 3 months rather than keeping them a year or so as is the normal practice. The prices realized from sold sheep lambs were far much better than the prices obtained when similar lambs are sold on visual appraisal at farm gate. The AFAPO CBO, based on a written agreement, got a contribution of 10% from the sale proceeds from each animal, amount totalling to KES 61,000. The CBO used the money collected for table banking and as capital for loaning to individual community members to meet family expenses and therefore improving their livelihoods.

Economic profitability of sheep fattening scheme was evaluated through estimating the expected cost benefit parameters (net present value (NPV), gross margin (GM), benefit cost ratio (BCR) and internal rate of return (IRR)) under different scenarios. The estimation were based on an inflation rate of price per annum of 10%, a depreciation on capital asset of 5%, a discounting rate of 11.5% which is the current Central Bank of Kenya interest rate and mortality rate per season of 4.5%. The first scenario is a case whereby the farmer has to buy 132 sheep lamb at the age of 3-4 months for fattening and thereafter sell through auction. In this case the farmer would experience a negative net benefit (NB) of KES 182,043.42 in the first season which is largely contributed by the capital expenditure. The internal rate of return (IRR) of 124.9% indicates that the project will be self-sustainable in future. This IRR implies that for every one Kenya shillings invested, a return of Kenya shilling 124.90 will be realized which is far much above the Kenya commercial banks interest rate that range from 14-15%. The positive net present value (NPV) of KES 1,406,429.48 that is far beyond zero implies that it is profitable investing in sheep fattening scheme. The benefit cost ratio (BCR) of less than one indicate that the project will not be able to pay in the first season but the BCR above one in the second season implies that the project will be breaking even in subsequent season. The second scenario is a case whereby the farmers come together and contribute 132 sheep lambs for fattening under feedlot system. Under this scenario, the computed cost benefit parameters gave a positive NPV and GM and a CBR above one. This means that the costs invested in the sheep lamb fattening scheme are recovered and high benefits realized. The discounted NPV was far above zero implying that it is worthy investing in sheep lamb fattening for enhanced future benefit with a very high IRR of above 500%.