INTEGRATED GOAT PROJECTS IN KENYA: IMPACT ON GENETIC IMPROVEMENT

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INTRODUCTION

Goats contribute significantly to the food resource of many families in Kenya and are relatively more adaptable than other livestock as they thrive in a variety of ecological and management systems (Rege, 1994). Genetic improvement of goats over time has been done mainly as a component of integrated goat projects whose main aims were development oriented. This paper briefly reviews some of these projects, which had a breeding component, with the aim of assessing their impact on genetic improvement of traits of economic importance.

INTEGRATED GOAT PROJECTS

Food and Agriculture Organization, United Nations Development Programme and the Government of Kenya (FAO/UNDP/GOK) Sheep and Goat Project. This project was initiated in 1971. The main long-term objective was to increase the meat and milk production (FAO/UNDP, 1976). The emphases were on characterization and multiplication of local goat populations (Galla and East African). Phenotypic and genetic parameters were estimated and the adaptability of these breeds studied. Stud flocks for these breeds were established through selection for economically important traits. Crossbreeding with the Boar, Toggenburg and Anglo-Nubian was also practiced. Attempts were also made to establish a model dairy goat semi-intensive farming system for the exotics and their crosses with the local breeds. Reportedly conflict of interest among the collaborating agencies compromised the success of the project among other reasons. It was recommended that a breeders association be developed to oversee the breeding programmes and recording systems in the government research stations.

Small Ruminant – Collaborative Research Support Programme (SR-CRSP). This programme was established in 1980 by GOK and the United States of America International Development Agency (USAID), supported by a battery of participating US institutions. The objectives were to establish a dual purpose goat (DPG) and DPG production systems which will contribute to increased milk and meat production in western Kenya and to provide training to enhance long-term capability for research and development of small stock. The DPG was a four way cross of Toggenburg x Galla x Nubian x East African (Ruvuna, 1986). The programme imported germplasm of existing dairy goat breeds from USA and Europe (Toggenburg, Nubian and Alpine) and crossbred these with local females to utilise F1s and other crosses. Breeding schemes to disseminate “elite” sires to farmers were also established (Cartwright, 1984).

GOK and The Overseas Development Administration Project (GOK/ODA). This project was initiated in 1981 and concentrated on the development of the indigenous Galla goat. The main objective of this project was to identify a system based on the Galla goat in its own environment for milk and meat production while conserving the natural resources in the marginal areas where the Galla goat thrives (Carles *et al.,* 1986).

The Integrated Small Livestock Project (ISLP). This was initiated in 1992 in central Kenya and was a joint venture between the GOK and the German government through its technical assistance agency (GTZ). The project introduced Alpine bucks in 1992 to upgrade local goats (Galla and Small East African) up to a blood level of 87.5% exotic. The project led to the launching of a Dairy Goat Association of Kenya (DGAK) in 1994 (Theuri, 1998). The performance of the Alpine upgrades with local goats is still under evaluation; most of the reports are yet to be documented.

Farm-Africa Dairy Goat and Animal Health-Care Project. FARM-Africa**,** a British non-governmental organisation presently supports a project in central Kenya, initiated in 1996 with the introduction of Toggenburg dairy goats from Britain. The objective of this project is to improve the milk production and decrease kidding interval of the local goats (Galla and East African) through crossbreeding with the Toggenburg to a level of 75% exotic blood. The project is six years old and several field days have been organised to reveal the first F_1s born in farmers' custody (Ahuya, 1998).

IMPACT ON GENETIC IMPROVEMENT

Were these projects successful? The criterion of evaluating success or failure is based on whether the project achieved its objective and if it was sustainable. The fact that at present no stud flocks of Galla or small East African goat are established in Kenya and that no dual-purpose goat for Kenya exists puts the achievements of the FAO/UNDP/GOK and SR-CRSP projects in jeopardy. For religious and social reasons the target group for the SR-CRSP project did not favour the consumption of goat milk, additionally the dual purpose goat evaluated on selected farms reportedly performed unimpressively hence they were not popular (Gichohi, 1998). The demand for milk in Kenya is fairly higher than its supply, the dairy goat initiative was meant to supplement the shortfall of dairy cattle milk production. However, this objective is yet to be achieved. The farmer participatory approach of ISLP and FARM-Africa projects is commendable. These projects are practically similar and operate virtually in the same region casting some doubts on the possible impact of the FARM-Africa project. It was probably of some value if the milk supply in central Kenya was boosted however it is also essential to realise that this same region is where abundant dairy cattle thrive. The formation of DGAK via the ISLP is a step forward since through such organisations genetic improvement policies can be designed and implemented.

Breeding strategies. In one way or another, these projects utilized similar breeding strategies namely crossbreeding, upgrading and breed replacement without due regard to the threats these strategies have on the indigenous genetic resources. Rarely was the genotype matched with the environment. This is exemplified by the fact that in the operation areas of some of these

projects, the genotypes that were being promoted are scarce. Unlike in dairy cattle where crossbreeding has been defined and utilised in maximising milk production in Kenya (Kahi *et al.,* 2000), no research was done on the optimum level of exotic dairy goat blood that the promoted genotypes required for efficient production and adaptation in the project areas. These projects lacked sustainable breeding objectives, which might have contributed to their failure to provide genetic improvement of indigenous goat breeds. Inadequate infrastructure, lack of local expertise, funds after the completion of the projects and field recording might also have contributed to failure of some of the projects (Jasiorowsky, 1991).

CONCLUSIONS

A sustainable project should be that which has few and appropriate objectives. There is the need to match the genotype with the environment if a project is to be sustainable. The potential of the indigenous breeds should not be underestimated and hence the necessity to undertake measures to conserve these genetic resources. The demand for goat meat is increasing tremendously in Kenya. Similarly dairy goats are gaining value mainly for subsistence milk production and for localised sale of milk. An organised marketing system for goat products will be an area of great concern. There is the need to encourage the development of sustainable breeding programmes that take into account specific needs and circumstances of the target group.

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