

A note on the impact of animal traction in Zambia

by

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Abstract

Small-scale farmers in Zambia are increasingly using work oxen. In the Southern Province of Zambia (a traditional cattle-rearing area) 42,000 farmers have access to oxen through ownership and another 17,000 farmers hire or borrow oxen. In such areas, the use of animal traction is thought to have resulted in lower labour costs, increased area cultivated and higher crop yields. The use of tractors is too costly and too complicated. Animal traction is simple, cheap and profitable.

Introduction

Livestock production in Zambia has undergone several changes since independence in 1964. Even in areas where livestock keeping was not practised, the role of cattle is now gradually gaining in importance. Estimates indicate that the present total cattle population in Zambia is 2.6 million. Almost half of these (1.25 million) are found in the Southern Province of the country, with most of the remainder being distributed in the other main cattle-rearing areas in the Western, Eastern and Central provinces.

The impact of animal traction

In Zambia, oxen are the principle source of farm power available to the small-scale or subsistence farmer. Depending on the type of operation and the condition of the soil, implements are normally powered by a pair of oxen, or two pairs. The impact of animal traction has not only caused small-scale farmers to value oxen more than bulls, but has significantly affected their use.

In the Southern Province (a traditional cattle-rearing area) an estimated 10,000 farm families on the plateau and 7,000 in Gwembe Valley use oxen for land preparation through borrowing or hire arrangements, even though they do not own oxen. Furthermore, an estimated 30,000 farm families on the plateau and 2,000 in the Gwembe Valley own at least one pair of oxen for land preparation and general farm work. Another 10,000 farm families on the plateau, who represent the most advanced of the traditional farmers in the province, own several pairs of oxen and large herds of cattle.

It has become government policy to encourage small-scale farmers, currently contributing 60% of the national food production, to use animal power. In areas where animal traction has been used, increased cropped areas, higher crop yields and low labour costs have been observed. By contrast, in the early 1980s, the government provided tractors for use by small-scale farmers in the Northern Province. Today very few farmers can boast of the same tractor and implements. From the outset farmers experienced difficulties because of their lack of knowledge in the use and maintenance of the machinery, the lack of fuel and lubricants, insufficiently trained operators and many other related problems. However this same province is now showing impressive results in productivity through the use of animal traction, and so are the others which are not traditional cattle-rearing areas.

In order to achieve its goal in reaching all the farmers and to motivate them in the use of animal traction, the government introduced the dynamic "training and visit" (T & V) system of extension. This system is based on a

systematic and methodical approach aimed at establishing extensive contact between farm families and extension workers, who thus become part of the farmer's life and activities. As a result of the introduction of the T & V service in the Southern and Eastern Provinces, the adoption of animal traction packages increased substantially. Other provinces have also initiated similar approaches with resounding success. Evidently, animal traction in Zambia has had a big impact on subsistence farmers who see it as the only means of achieving their farming objectives. A recent survey conducted in the Southern Province showed that a large number of farm families own one or more ox-drawn implements such as plows, harrows, cultivators, ridgers, ox carts and sledges. This success has encouraged the development of the necessary technical support to programmes promoting the adoption of animal traction.

Some advantages of animal traction

By using oxen farmers are able to prepare with better timeliness larger areas and at the same time improve their land preparation techniques. Farmers may also reduce the need to employ costly labour and thus save money which can be used for other improvements. Oxen are cheap to feed and maintain: they graze in the bush during the rains and their food is supplemented by crop residues in the dry season. The system of harnessing oxen with a wooden yoke is both simple and cheap.

Ox-drawn implements are simple to handle and easy to maintain (without the need for a complicated manual). Normally the oxen can be worked for four hours at a stretch during the early morning and another four hours during the afternoon, with a three-hour rest in between. In Zambia the work oxen are trained by the farmers themselves without the need for time-consuming operator training. Animal traction allows easy transportation of farm inputs and produce. The light, animal-drawn implements may well reduce soil degradation compared with heavy machinery. Models have been developed to illustrate the profitability of using animal traction.

Résumé

Le cheptel zambien est maintenant estimé à 2,6 millions de têtes. Les petits fermiers tendent à valoriser davantage les boeufs que les taureaux, du fait de leur usage en culture attelée. Dans la province sud de la Zambie (une région où l'élevage est une activité traditionnelle) 42.000 fermiers utilisent leurs propres boeufs de trait. 17.000 paysans les empruntent ou les louent. Dans ces zones, l'utilisation de la traction animale a permis de réduire les coûts du travail, d'accroître les superficies cultivées et d'augmenter la productivité. Par contre, la mécanisation avec ses tracteurs et autres équipements sophistiqués sont trop onéreux et réduisent le niveau de productivité des petites exploitations. L'utilisation des tracteurs est trop onéreuse et complexe. La traction animale est simple, économique et d'une bonne rentabilité.