

Animal traction technology for logging in Zambia

by

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Abstract

The introduction of tractors and trucks in the forestry industry in Zambia has not been successful. These machines are capital (foreign exchange) intensive, and the country lacks the necessary infrastructure and trained manpower to maintain and repair them. The Zambia Forestry and Forest Industries Corporation (Zaffico) has therefore been studying the use of animal traction technology to supplement tractor power and hence cut costs. It has found that four pairs of oxen can do the work of one tractor, but because the investment and operating costs of oxen are much lower than those of tractors, oxen can be 10 times more cost-effective than tractors. The move to animal traction brings other benefits to the rural sector. Zaffico hires oxen from farmers, thus creating income-generating work for the farmers. And the local people therefore have a vested interest in protecting plantation trees from forest fires for which, previously, they were partly responsible. Research and development efforts on improving animal traction technology are continuing, and include the design of new implements for log skidding and ox-drawn transport.

Background

In the second half of the 20th century countries in eastern and southern Africa enjoyed the fruits of their political struggles (in the form of independence), and anticipated economic independence for their peoples. Many lives were sacrificed in the pursuit of this goal. But the question being asked today is: has the quality of life of the people of this region actually improved in comparison to what it was before independence? If the answer is yes, then bravo. If the answer is no, what went wrong?

After attaining political independence, the governments of the day became pre-occupied with establishing large industries. They were in a great hurry to catch up with their former colonial masters. They believed that large industries were essential to their socioeconomic development and hence to the improvement of the quality of life of their peoples, by providing jobs and involving them in production activities.

Effects of industry-led development

Because the industries were set up in or near urban centres, the much dreaded rural-urban drift ensued. The urban areas are now overpopulated, and local councils do not have enough money to provide the necessary services and amenities. The rural areas, on the other hand, have not only remained underdeveloped but have now been deprived of their able-bodied young men and women; even the ones that have stayed in the rural areas are only waiting for their chance to drift. Therefore, instead of benefiting the rural areas by way of the "trickle-down" effect, large industrial set-ups have further weakened their intended beneficiaries.

This bitter experience should teach us that any society is only as strong as its weakest components. Countries in eastern and southern Africa are only as strong as their poor rural populations, regardless of the large industries in their cities.

Possible solutions

Although there are several possible practicable solutions that can benefit the rural population socioeconomically, improved animal traction technology is the "locomotive power" in rural socioeconomic development. In its current state, animal traction technology is of little significance to the betterment of the intended beneficiaries. This notion is proved by efforts that have been made in the past decade to substitute the technology with mechanical power in the form of farm tractors and other diesel and petrol engine powered machinery. The region lacks the necessary infrastructure and adequate trained manpower to maintain and repair the machines, and most of machines have not lasted for their expected economically productive lives. As these machines are capital (foreign exchange) intensive, the main result of their purchase by the poor countries in the region has been an increase in foreign debt.

This has led to below-capacity production levels in industry, and agricultural produce not being collected from rural areas or being collected at huge cost which the regional economies cannot afford.