

# The impact of the oxenization programme in the North-Western Province of Zambia

by

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## Abstract

*The North-Western Province of Zambia has never been considered an area of high economic potential. Ninety per cent of the population of the province live in villages, and most are engaged in subsistence-based farms. There is a continuous exodus of young people. Economic problems prompted the Zambian Government to develop the use of animal traction. In the development area of the North-Western Integrated Rural Development Project the average area now plowed is 6.7 ha per pair per year, well beyond the target of 5 ha. With various local hire arrangements, one plow can serve up to ten farmers. Draft animals are used to meet transport needs and 80% of marketed produce is now transported to depots in ox carts. Prices of the package have risen steadily, particularly that of the cart. The ox cart represents more than 50% of the cost of the animal draft equipment, but presently contributes only 20% of relevant income, and the transport market seems saturated. While people are generally happy with the oxenization, hire arrangements and jealousies have caused tensions in village communities. Few farmers are aware that existing numbers of animals and implements are only sufficient to plow half the cultivated area.*

## Introduction

### The region

The North-Western Province of Zambia is a remote, rural area that is mainly covered with vast woodlands. It is sparsely-populated, with only 2.4 people per km<sup>2</sup>. The climate is suitable for rainfed agriculture (with 1000-1400 mm rainfall during the rainy season). However most soils are quite sandy and not suitable for permanent cultivation. Though

the resources of the province are more than sufficient to satisfy basic needs, the area has never been considered to have high economic potential. The colonial and post-colonial economy of Zambia was based on copper and on the establishment of large-scale import-substituting industries in the urban centres. Thus the economic development of remote rural areas like North-Western Province was widely neglected and there was a continuous exodus of young people to big cities resulting in Zambia's urbanization rate of 45%.

### The people

Most (90%) of the population of the North-Western Province live in villages and most are involved in subsistence-based farming. Cassava and sorghum are the major staple foods. Traditionally the system was based on extensive shifting hoe-cultivation (appropriate to the limited soil fertility) and this was supplemented by hunting, fishing and gathering of wild fruits. After people were brought into the cash economy (through the colonial tax system), cash was raised through sales of surpluses and also through trading, piece work, production of crafts and remittances sent by relatives from the towns.

### The problem

During the 1970s, world copper prices declined and the Zambian economy was in crisis. There were decreasing opportunities for villagers to obtain the necessary minimum amount of cash from urban remittances from migrants or from piecework with the govern-

Table 1:

Summary of animal traction expansion in North-Western Integrated Rural Development Programme area

Years	1980	1981	1982	1983	1984	1985	1986	1987
Pairs of oxen distributed in the project area	9	13	17	36	42	76	110	112
Total area cultivated by oxen-owning farmers and groups (ha)	218	568	850	1279	1586	2566	3406	4085

ment's Public Works Programme. At that time agricultural services such as loans for inputs, marketing schemes, extension advice and tractor hire services were directed only towards the 5% of farmers who were medium-scale "emergent farmers". The great majority of farmers and villagers had no reliable access to markets, credit or information. As there was no means of transport in the villages and hardly any private purchasing of local products, the peasants were dependent on government agencies and other official organizations for improvements in production and marketing. The tractor plowing schemes which once served some rural farmers proved to be economically out of reach for most farmers. By 1968 the failure of the scheme was recognised. In a speech at Mulungushi in April 1968, President Kaunda expressed his dissatisfaction with capital-intensive rather than labour-intensive projects, citing the "ill-fated tractor scheme" proposed by experts of the Food and Agriculture Organization (FAO) and the Economic Commission for Africa (ECA) as an example (Dodge, 1977; Roberts and Elliot, 1971). By the 1970s the high costs of fuel and tractors, coupled with a poor road network, led to great interest in the use of work oxen for land cultivation and rural transport. In the North Western Province the Integrated Rural Development Project (NWIRD), with support from GTZ, had a specific oxenization component.

## The impact of animal traction

### Transport

Roughly 40,000 bags of crops have been carried to marketing depots by 470 ox carts

(370 carts having been provided through NWIRD). This represents about 80% of the 50,000 bags of marketed produce of Zambezi and Kabompo Districts. It appears that capacity was sufficient to meet the demand: one pair of oxen has the capacity to transport about 100 tonne-kilometres during the two months marketing season in July and August, and thus 400 pairs are sufficient to transport 90,000 bags of maize over an average distance of 5 km.

### Plowing

In the 1986/87 season, roughly 1750 ha (43% of the total cultivated area in all three Districts) were plowed by oxen drawing 260 ox-plows. The average area plowed by one pair was 6.7 ha which is well beyond the target of 5 ha. This was encouraging, particularly in the light of the numbers of recently trained pairs.

### Contract services

In the project area, most of the 308 farmers' groups (known as Lima groups) have qualified for packages of loans and implements to start animal traction and 370 oxen-packages had been distributed by 1987. About 2,500 farmers had therefore obtained access to plowing services, which represents 54% of the Lima farmers so far covered by the project. Of the total area plowed, 22% was on the fields of ox-owners (1.5 ha per ox-owner), 24% was carried out free-of-charge for relatives or for the plow men (1.6 ha per pair) and 54% (3.6 ha per pair) was contract plowing for other farmers. Thus up to 10 farmers appear to be benefiting from each plow, and this is regarded as a satisfying result.

## Constraints to animal traction

### Price of the package

The price of the package has increased greatly. In 1985 the package cost K1621; in 1986 this had increased to K3805 and in 1988 the package cost over K7000. This was mainly due to a tremendous increase in the price for ox carts (K650 in 1985; K2200 in 1986; K3100 in 1987; K3400 in 1988). The cart price was strongly influenced by the price of the axle (K1950 in 1988). Since the last price increase in February 1988, the package as a whole does not appear economically viable at the present rates of utilization and produce prices. If one separates the components of the package, it is the ox cart which causes the main economic problems. The ox cart represents more than 50% of the cost of the package, and yet it contributes only about 20% of the revenues coming from oxenization. This is mainly due to the comparatively low prices for transport services and the low utilization rate of 75% of the ox carts during the off-season. One day of plowing brought in K32 in 1986, while one day of transport brought only K8. This indicates that in spite of the clear value of the ox carts, there is presently insufficient transport demand in the villages throughout the year. The existing demand seems to be satisfied by the 25% ox-owners who use their carts regularly throughout the year. While there already seems to be an over-capacity of ox carts, it will be difficult to reduce the animal-traction package to plows only. This is because it is feared that four weeks of plowing per year will not be sufficient to keep oxen in good working condition.

### Dissatisfaction with contract plowing

In the eyes of the rural population, the oxenization programme has been the most welcome innovation brought by the NWIRDP. Nevertheless it is also an innovation which has brought many complications and dissatisfaction to village communities. People have complained about contract plowing services as

these often come late. Thus everybody now wants to own their own pair of oxen, rather than relying on other people. People now expect that all land should be plowed with oxen, and in a reasonable time, even though the present plowing capacity is only sufficient for half of the cultivated area.

### Résumé

*La province nord-ouest de la Zambie n'a jamais été considérée comme une région à haut potentiel économique. 90% de la population vit d'une agriculture de subsistance, produisant essentiellement manioc et sorgho. L'exode rural des jeunes est continu. Des difficultés économiques amènent le gouvernement, avec l'aide de l'Allemagne de l'Ouest, à développer l'utilisation de la traction animale. Les animaux de trait disponibles suffisent aux besoins en transport. La superficie moyenne labourée par charrue est de 6,7 ha, bien au-delà de l'objectif de 5 ha. Grâce aux services de location, on compte une charrue pour dix fermiers. Les prix des équipements et des charrettes en particulier augmentent régulièrement. Une charrette représente la moitié du coût d'une chaîne complète, et compte seulement pour 20% des revenus du fermier. Le développement de la traction animale est apprécié par tous les fermiers, mais les systèmes de location et la possession ou la non possession d'animaux créent des tensions dans les villages. Toutes les familles veulent posséder une paire de boeufs, plutôt que d'utiliser les services de location qui ne sont pas très fiables. La plupart des fermiers ne sont pas conscients que les animaux et les équipements disponibles suffisent tout juste à labourer la moitié des terres cultivées.*

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