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Development of Draught Animal Projects

2.1 THE USE OF WORK ANIMALS IN THE NINETEENTH CENTURY

The use of animal power in Sierra Leone can be traced back to the 19th century, when horses were an important source of transport in Freetown. However, since a devastating outbreak of disease between 1856 and 1858, trypanosomiasis spread by tsetse flies has effectively prevented the use of horses for heavy work in Sierra Leone, (Payne, 1980).

While horses succumb easily to certain species of trypanosome blood parasites, the small, indigenous Ndama cattle are tolerant of trypanosomiasis; and while cattle never replaced horses as a major source of transport around Freetown, it is recorded that, in the 1920s, oxen were used by the Department of Health to pull Freetown refuse carts (Growcott, 1977).

2.2 WORK OXEN SCHEMES OF THE DEPARTMENT OF AGRICULTURE 1928-1950

The use of draught oxen for agricultural purposes dates from 1928, when the Department of Agriculture, which was then based at Njala, sent some people to Kankan in Guinea to learn ox-training skills. On their return they were posted to Njala, Batkanu and Karina where they trained farmers in the use of oxen for ploughing swamps and upland. The then Director of Agriculture had "great confidence that the ox-plough had come to stay" (Lands, 1928). It is perhaps interesting to note that ox-ploughing was introduced *after* the first motor tractor had been used at Njala. Initial enthusiasm for the first tractor was marred by the often repeated story that useful work was greatly hampered by the breakdown of the tractor at the time when operations should have started (Lands 1922, 1923).

The initial reaction to ox-ploughing in the swamps and upland was good and, after 80 acres had been cultivated in the first year at Karina and Batkanu, additional ploughs and harrows were ordered. Further ox-training centres were also started in Port Loko and Koinadugu Districts (Agriculture, 1929, 1930). The Ransome 'Victory' plough was found to be stronger than 'L'Afrique' plough, but the

French Plissonier harrow was considered superior to its Ransome competitor, (Agriculture, 1929).

In the cattle centres of the Northern Province, "all operations in connection with actual (ox) ploughing succeeded almost beyond expectation" (Agriculture, 1930). At Newton, in the Western Area, it was considered in 1930 that oxen were not suitable for the banana area. Subsequent trials were more encouraging and ox-transport was used there for some time (Agriculture, 1938).

Throughout the 1930s, ox-ploughing persisted in areas of the Northern Province and at Njala. People present at that time report that oxen were used enthusiastically and effectively (Lahai, 1978; Sesay, 1980), but further development was limited by the supply of ploughs, and the difficulty of obtaining spare parts (Agriculture, 1938, 1946). It was considered at that time that there was "little doubt that the use of the (ox) plough could be successful in Sierra Leone if sufficient time and attention could be devoted to the necessary investigational work" (Agriculture, 1938). However, this necessary work does not appear to have been carried out, possibly due to the constraints imposed by the war; during the 1940s ox-ploughing at Njala was maintained, but not developed. In 1944, one of the ox-pairs from Njala was transferred to Rokupr where it was not highly valued (Agriculture, 1944, 1945).

In 1947, oxen were working an average of 585 hours per year at Njala (Kamara, 1974) and, in addition to ploughing, oxen were used to transport building materials, agricultural products and manure. However, in 1954 "all draught animals were culled as tractors replaced animal power." (Agriculture, 1954).

2.3 MABOLE VALLEY OX-PLOUGHING SCHEME

Around Karina, one of the original centres of ox-training, the use of oxen for ploughing persisted during the '30s and '40s, but with the lack of new ploughs and spare parts being a limiting factor (Sesay, 1980). By 1946, only 19 out of 30 ploughs around Karina were serviceable and these were used to cultivate about 270 acres/110 ha (Agriculture, 1946; Sesay, 1980). However, the Mabole Valley

Ox-ploughing Scheme was set up, allowing farmers loans of £10, repayable in three years, for the purchase of oxen and ploughs. This credit scheme led to the purchase of over 60 new Ransome 'Victory' ploughs from surplus stocks in Nigeria. From 1950-1955 there were 70 farmers involved in the ploughing of 500 acres/200 ha (Agriculture, 1950-1955; Sesay, 1980).



Fig 2.1 Ox-ploughing in the Mabole Valley.

This period, however, was one of great diamond mining activity in the east of Sierra Leone and many Madingo people from the Karina area left to seek their fortunes in the diamond fields. The success of these mining activities can be seen from the impressive buildings erected at this time at Warra Dara, close to Karina. Thus, with the active men of the community in search of diamonds, farming was neglected. This, together with the problem of obtaining new plough-shares led to a decline in ox-ploughing so that by 1958 only "a hardcore of enthusiasts" continued ploughing (Agriculture, 1958).

Despite the lack of spare parts, the sturdy 'Victory' ploughs continued to be used for many years. In 1980 there were 30 farmers cultivating about 250 acres/100 ha around Karina with ploughs over 30 years' old (Sesay, 1980). Then, with the decline in diamond fortunes, the men returned to Mabole Valley and interest in ox-ploughing grew again.

Strong ox-ploughs were unobtainable in Sierra Leone so that, in 1979, one of Chinese manufacture was purchased privately from Guinea. However, the farmer found it to be unsuitable for his Karina boliland. It is interesting to note that, although there has been no formal extension effort around Karina since 1958 relating to ox-ploughing, its popularity has nevertheless continued to increase. In 1980, the Section Chief of Karina compiled a list of 110 farmers, of whom 50 owned oxen, who wished to purchase new ox-ploughs. These farmers were mainly Madingo people, but included some neighbouring Limba farmers (Sesay, 1980).

2.4 WORK OXEN IN THE KOINADUGU DISTRICT

An ox-training scheme was developed in the 1950s in the Koinadugu District north of Karina. Between 1953 and 1955, some 72 oxen were trained at Musaia and were sold through the District Council (Agriculture, 1955). It was considered that oxen were "more suitable than tractors in the long narrow swamps of the Koinadugu District" (Agriculture, 1954). The use of work oxen continued to be encouraged in the '50s and 1960 was a particularly good year for ox-ploughing. The arrival of tractors in 1965, however, led to reduced support for oxen and in that year they ceased to be used at Musaia. The Station came under the control of Njala University College and the remaining ox equipment was transferred to the District Headquarters at Kabala where it continued to be available until the late 1960s. The ploughs were used for as long as they were serviceable and, in 1980, there were still 10 'Victory' ploughs in villages around Musaia and Binkolo. In villages of the Koinadugu District, many shareless 'Victory' ploughs can be seen on verandahs in the hope perhaps that new shares or other parts can be found to extend still further a working life which can exceed 25 years.

One solution to the problem of lack of ox-ploughs and shares through District extension



Fig 2.2 Ransome 'Victory' plough at Karina held by E.W. Sesay, Agricultural Superintendent in charge of Mabole Valley Ox-Scheme from 1950-1958.



Fig 2.3 Old plough, yoke and harrow in Koinadugu District.

services has, however, been found by farmers around Falaba, near the Guinea border. In 1980, at least 10 farmers were using Chinese manufactured ploughs which had been imported privately from Guinea, and one trader purchased 10 ploughs to sell to others. Thus, while people in the Falaba area had been involved with the earlier ox-ploughing schemes and some had retained their 'Victory' ploughs, the subsequent importation from Guinea represented a private diffusion of ox-technology. Late in the 1970s a number of farmers were adopting ox-cultivation techniques for the first time.

2.5 CHANGING ATTITUDES TO WORK OXEN, 1960-1974

The decline of the Government sponsored ox-projects during the late '50s and '60s can be attributed to a variety of reasons, including the attitude of agricultural staff and the migration of farmers to the east in search of diamonds or associated trades. However, more seriously, there seems to have been a chronic lack of equipment and spare parts. In addition, Government-owned tractors became increasingly available for ploughing at this time and it has been suggested that by the 1960s Government policy actively discouraged ox-ploughing and stopped the importation of new ox-ploughs and spare parts (Kamara, 1974; Growcott, 1977). While individual farmers still persevered with ox-cultivation, there appeared to be little interest among policy makers for encouraging the use of animal power in Sierra Leone. However, there was one small scheme in the '60s in which a number of United States Peace Corps community development workers took 'pony' ox-ploughs to a few villages, but due, apparently, to lack of planning and co-ordination the project quickly faded.

During the 1970s, interest in work oxen slowly increased and this may have been related first to the expense and then the unreliability and breakdown of tractors, together with the rise in the cost of fuel

and machinery. At the same time, there was a greater appreciation of the desirability of appropriate technology for the small farmers of the country. In 1974, Professor Kamara, in a study entitled "Ox-ploughing in Sierra Leone" concluded that work oxen should be the ideal farm technology for the more remote areas and smaller farmer units; he suggested that further studies might ultimately lead to the renewed use of draught animals in the country.



Fig 2.4 Obtaining information on the use of Oxen in the Koinadugu District.

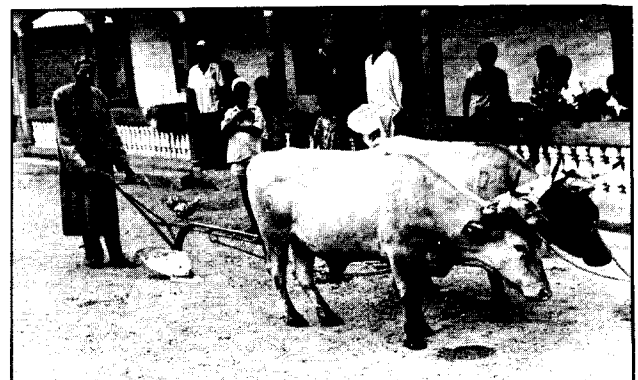


Fig 2.5 Farmer at Benikoro with well-used Ransome 'Victory' plough.

2.6 USE OF OXEN ON CHINESE RICE STATIONS

In 1974, a series of rice stations were built in co-operation with the People's Republic of China and the Chinese agriculturists trained a number of oxen, bulls and cows to work in the rice fields. Single animals were harnessed with shoulder yokes and simple wooden ploughs with cast iron shares and mouldboards were used to cultivate developed swamps. In addition to ploughing, the oxen pulled simple wooden harrows, swamp levellers and sledges. A stock pile of ox-equipment was kept in the stores at Rolako, but there seemed little or no demand for it from farmers. It would seem that little attempt was made to encourage local farmers to use oxen and ox commands were given in Chinese, while Fulahs were generally employed to look after the cattle.

When the Chinese left, animals were retained at Rolako, Makali and Ogoo. The agricultural staff responsible for the rice stations appeared convinced of the technical possibilities for using oxen but, while the animals could work effectively, their use on the stations was not frequent. This is almost certainly explained by the fact that the Chinese also provided a considerable number of 4-wheel tractors, crawler tractors and power tillers, together with numerous spare parts. As long as tractors and tillers were readily available for merely the cost of the fuel, it is not surprising that relatively little interest was shown in the use of draught animals. Some of this machinery was still in operation in 1980, so that the test had not yet arisen as to whether ox-cultivation will be recalled when the last of the tractors and tillers left by the Chinese are finally scrapped.

2.7 WORK OXEN IN THE INTEGRATED AGRICULTURAL DEVELOPMENT PROJECTS (IADPs)

The Koinadugu IADP was the first to have a specific work oxen component. In planning the project it was considered that ox-training would take place at Musaia and at six agricultural centres, while credit would be required by over 150 farmers in the first four years for the purchase of oxen, ploughs and carts (NAO/MANR, 1977). Numerous constraints and delays in the first two years of the implementation of the KIADP held up progress on the work oxen training component but, by late 1980, the first small batch of ox-ploughs had arrived. At the same time a British volunteer (VSO) had been assigned to assist in the development of the work oxen scheme.

In the Northern Area IADP, oxen were trained at Binkolo Farm, but they were transferred to Masanga Leprosy Hospital in 1979 when the Binkolo Farm was handed over to the Seed Multiplication Project. At Masanga, the animals were found ideal for work on the

Hospital farm, but proposals to use oxen in a rehabilitation programme for leprosy patients were eventually rejected for the various reasons associated with physical, social and economic problems likely to be encountered by leprosy patients returning to their villages with work oxen (Sleeman, 1980). At both Binkolo and Masanga, unexplained mortality of oxen occurred, although this could not directly be linked with their work function. The animals at both Binkolo and Masanga had been used with single shoulder yokes of the Chinese design.

Although the NIADP covers the Mabile Valley where the majority of work oxen in the country occur, the first phase of the project made no provision for meeting the big demand for ox-ploughs in the area. However, in the preparation for the second phase running from 1981, it was stated that the use of animal power would be developed and that oxen would be trained at Mara Ranch and at Teko. However, there was no specific provision for assisting those farmers in the area already convinced by ox-technology.

2.8 WORK OXEN PROJECT, MINISTRY OF AGRICULTURE & FORESTRY (MAF)

In 1977 a project was prepared for the then Ministry of Agriculture & Natural Resources for the re-introduction of draught animals through training centres at Makeni and Bo (Growcott, 1977). The project was accepted in principle by the Ministry, but the proposals were not implemented immediately, thus leaving time for more studies to be made on the most appropriate methods of developing the use of draught animals in the country.

In 1978, the Farm Director at Njala University College initiated a research, development and equipment evaluation project on the use of draught animals (Starkey, 1979). The aim of the first phase of the project was to ensure that a sound knowledge of appropriate techniques and equipment, as well as possible constraints, was obtained

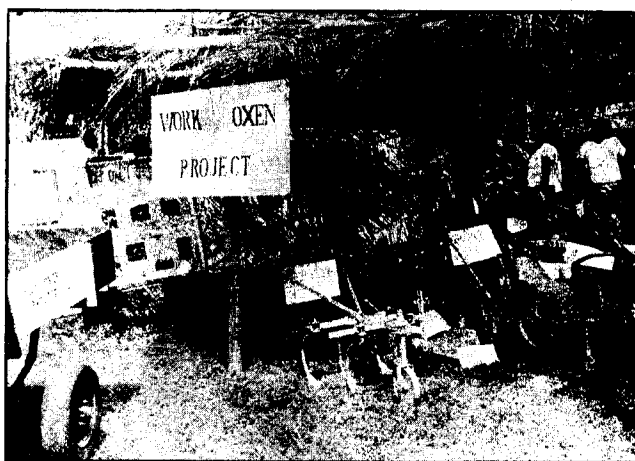


Fig 2.6 Work Oxen Project participating at the 1979 Njala Field Day.

before planning subsequent phases to encourage and facilitate the use of oxen in various parts of the country.

Initial equipment was purchased with funds from the Canadian High Commission Discretionary Fund and in 1978 and 1979 oxen were trained at Njala by an agricultural student and available literature and sources were reviewed (Starkey, 1980). With financial support from the Ministry of Agriculture & Forestry (MAF) and recruitment of expatriate personnel by the French Embassy and VSO, the *Ministry of Agriculture & Forestry Work Oxen Project* became established. The aim of the Work Oxen Project was to promote the use of work oxen in the country, both by the provision and dissemination of technical information and by working through existing Ministry organisations and projects to assist in schemes to encourage and facilitate the adoption of ox-cultivation by farmers. In December 1979, a French volunteer was assigned to the Work Oxen Project. Working in co-operation with the Farm Director of NUC, he undertook research and development studies at Njala and visited those farmers using oxen in other parts of the country.

In February 1980, a British VSO was assigned to the Tikonko Agricultural Extension Centre (TAEC) in a pilot scheme to appraise the use of oxen in the Southern Province. The TAEC, with its strong appropriate technology background, decided to initiate a scheme to use work oxen in villages around Tikonko. This followed the abandoning of its power tiller hire scheme which had necessarily required an unacceptably high fee against the cost of buying and maintaining its machines. During 1980, preparations were made for using the oxen in the swamps around Tikonko, an area with very few cattle; the initial work was funded by the Ministry of Agriculture & Forestry as part of the Work Oxen Project.



Fig 2.7 Work Oxen Project holds work oxen demonstrations at Njala in 1980.



Fig 2.8 Senior representatives of agricultural institutions examine harrow at a Work Oxen Project Open Day.

2.9 SITUATION AT THE BEGINNING OF 1981

By the end of 1980, the Work Oxen Project, while primarily funded by the Ministry of Agriculture & Forestry, had received offers of equipment from the British Overseas Development Administration (ODA) and from a French charitable organisation (CFCMCF) for a programme of on-farm evaluation studies to be carried out at several locations in Sierra Leone. At the same time, the KIADP was posed to start its work oxen training schemes in the Northern Province and around Karina over 110 farmers, many already using oxen, were anxious to purchase new ox-ploughs. In the Southern Province a programme of draught animal research and development was continuing at NUC and an ox-training scheme was being developed around Tikonko. There seemed to be favourable climate of opinion in the Ministries and in the country for the introduction or re-introduction, in appropriate circumstances, of ox-cultivation in Sierra Leone. Thus, at the beginning of 1981, the situation appeared ripe for the development of draught oxen in the agriculture of Sierra Leone.