

# Appropriate Animal Traction Technology for Rural Women in Nigeria

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## Abstract

*This paper presents the findings of a national survey of traditional techniques and activities of rural women in Nigeria and rural infrastructural facilities available to them. It looks at the relative contribution of animal traction technologies to other technologies used by rural women and recommends the adoption of several strategies for improving their quality of life, including the implementation of appropriate animal traction technologies.*

## Introduction

The rural women discussed in this paper do not have access to basic amenities like pipeborne water, electricity, access roads. They also lack other locally developed or imported technologies that are useful to conduct their normal day to day work, covering home, farm and other income-generating activities.

The development of rural areas in Nigeria is dependent on the productivity of these women, who are involved in nurturing children while still engaged in all their other activities. Unlike their counterparts in urban areas of Nigeria, they predominantly use manual labour for their day to day activities. Equipment, where available, is very crude and no longer meets present-day population growth demands and changes in traditional practices.

The lack of appropriate technologies to suit the conditions of rural women dwellers was identified as one of the major factors affecting their productivity. Therefore, in order to seek a solution to this problem, the Federal Department of Agriculture (then Rural Development) in 1983 sponsored a national workshop on 'Indigenous Technology for Rural Women' where issues surrounding the problem of appropriate technologies for rural women were discussed.

Following the recommendations of the workshop, a National Committee on Appropriate Technology was set up with the following terms of reference:

- to develop an effective management framework around which to structure appropriate technology development for rural women in Nigeria;
- to establish machinery for the survey and analysis of the use by Nigerian rural women of the relevant equipment and indigenous technologies;
- to establish machinery for the survey of locally developed or improved technologies in use in Nigeria, their sources, problems and prospects for wider adoption;
- to establish machinery for the generation and diffusion of technologies that could enhance the quality of life of rural women in Nigeria.

It was agreed that subsequent activities on rural technology would be expected to use the results of the survey to identify selected technologies for further development and eventual dissemination to rural areas.

The committee then conducted a national survey of traditional technologies and activities of rural women in Nigeria, noting the various methods used by them in performing their day to day work. This paper presents a summary of the data obtained during the survey, showing existing rural infrastructural facilities and the relative contribution of animal traction technology to each of the other technologies used by rural women. It then analyses data and makes recommendations to implement appropriate animal traction technology programmes for rural women.

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**Table 1. Infrastructural facilities at surveyed locations.**

State	Villages surveyed	Infrastructure								
		A	B	C	D	E	F	G	H	I
Anambra	10	0	0	10	10	10	0	4	6	7
Bauchi	10	1	1	9	8	10	7	0	1	8
Bendel	9	1	2	8	5	8	6	0	4	2
Benue	6	0	0	6	3	6	0	1	1	0
Borro	10	2	2	10	2	8	1	0	0	5
Cross River	11	3	3	3	1	9	1	2	2	0
FCT*	3	0	1	1	2	2	2	1	2	1
Kaduna	9	3	6	8	4	7	4	3	5	2
Kano	10	7	8	10	7	9	5	8	4	5
Gongola	10	1	0	9	3	5	1	2	4	0
Imo	10	7	4	10	10	10	0	5	9	7
Kwara	3	1	3	2	3	3	3	0	1	2
Lagos	5	2	1	4	4	5	2	4	5	4
Niger	2	1	2	2	2	2	2	1	1	2
Ondo	8	6	5	7	6	7	2	1	3	4
Ogun	4	2	2	3	2	3	0	2	3	2
Oyo	2	1	1	2	2	2	1	2	2	1
Plateau	8	2	2	7	5	8	3	3	7	4
Rivers	6	6	5	5	5	5	0	1	4	5
Sokoto	6	0	0	5	3	5	3	0	0	0
<b>Totals</b>	142	46	48	121	87	124	43	40	64	61
<b>Percentages</b>	100	32	34	85	61	87	30	28	45	43

\*FCT = Federal Capital Territory

A = Tap water

F = Post primary school

B = Electricity

G = Recreation facilities

### Data Analysis

The survey was carried out in the then 19 Nigerian States and Federal Capital Territory. In general, in most villages surveyed there was no tap water or electricity. Conversely in most there were primary schools and reasonable access to public transport. Health institutions were relatively available though not as frequently as primary schools. With the exception of some states, post-primary schools were lacking, as was the case with recreational facilities. The presence of women's cooperatives and financial institutions varied from state to state, but in general slightly more than half of the villages surveyed had one or the other.

The presence or absence of these institutions has a bearing on the potential use of animal traction.

The non-availability of pipe-borne water suggests the need for appropriate animal traction technology for fetching water.

No electricity in an area will require adoption of animal traction technology to overcome the drudgery of activities like oil-extraction, milling, grinding etc.

Use of ox-carts by rural women in the presence of effective 4-wheel and 2-wheel vehicles like buses, motorcycles, bicycles, trucks etc. may be difficult. It would therefore be important to know the position in each locality in respect to the public highways.

Financial institutions such as banks or other lending institutions will normally play an important role in terms of credit facilities for operation of animal-powered based programmes.

The importance of women's cooperatives lies in enhancing the general well-being and social competence of women, through home economics groups teaching them crafts, sewing and knitting.

**Table 2. Infrastructural facilities at surveyed locations Summary of the contribution of each technology to selected home-related activities.**

Activity	Technology						Total resp.
	Manual		Animal		Mechanical		
	resp.*	%	resp.	%	resp.	%	
Fetching firewood	126	73	13	8	33	19	172
Cooking	107	58	0	0	77	42	184
Washing clothes	178	99	0	0	2	1	180
House cleaning	182	100	0	0	0	0	182
Child care	165	97	0	0	6	3	171
Threshing	124	95	0	0	5	5	130
Sorting/cleaning	144	100	0	0	0	0	144
Hulling	110	91	0	0	11	9	121

\* resp. = number of respondents

The existence of recreational facilities helps women by offering recreation to themselves and more importantly, their children.

The existence of schools where most of the training will be given to the growing children also needs emphasis. The schools may also serve as training centres for most of the rural activities of women in home, farm and other income-generating activities.

The summary of data collected from various locations on selected women's activities – home-related, farm-related and income-generating activities – revealed that Nigerian rural women are continuously involved in the following activities in the rural areas:

#### Home-Related Activities

Fetching firewood, cooking, washing dishes, washing clothes, ironing, house cleaning, child care, threshing, sorting, hulling, sieving.

#### Farm-Related Activities

Bush/land clearing, soil tilling, ridging, planting, transplanting, weeding, chemical/fertilizer application, bird scaring, irrigation, harvesting.

#### Income-Generating Activities.

Spinning, weaving, dyeing, knitting, crocheting, sewing, drying, smoking, Cruing, grinding, oil-processing, packaging, storage, hawking, transport, other crafts.

The grouping is not based on intensity of labour nor priorities. It is simply a compilation. Some of the activities of women are complementary to those of men; sometimes a woman is totally in charge.

#### Recommendations

The demand of present day socio-economic conditions in rural areas has placed more responsibility on Nigerian rural women. Many of them have also been forced to be breadwinners.

**Table 3. Summary of the contribution of each technology to selected farm-related activities.**

Activity	Technology						Total resp.
	Manual		Animal		Mechanical		
	resp.	%	resp.	%	resp.	%	
Bush clearing	124	75	1	1	40	24	165
Soil tilling	124	81	0	0	29	19	153
Ridging	105	69	7	5	41	27	153
Planting	157	94	1	1	8	5	166
Weeding	159	95	0	0	6	5	165
Chemical/fertilizer application	130	95	1	1	5	4	136
Harvesting	169	97	1	1	3	2	173

**Table 4. Summary of the contribution of each technology to selected farm related activities.**

Activity	Technology						Total resp.
	Manual		Mechanical		Man./Mech.*		
	resp.	%	resp.	%	resp.	%	
Weaving	44	100	0	0	0	0	44
Dyeing	25	92	1	4	1	4	27
Knitting/Crocheting	45	98	0	0	1	1	46
Sewing/Mending	49	34	7	4	92	62	148
Drying (produce)	173	98	0	0	3	2	176
Grinding	56	33	7	4	111	63	174
Oil extraction	108	83	3	3	19	14	130
Storage	170	97	5	3	0	0	175
Packaging	130	97	3	3	0	0	133
Trading/hawking	98	78	3	2	25	20	126
Transport	74	44	6	4	89	52	169

\*Man./Mech. = Manual/Mechanical.

Therefore, the following recommendations should be given top priority in order to reduce significantly the drudgery attached to the many activities of rural women :

- Introduction and popularisation of animal-powered devices that will cut down on effort, improve timeliness of operation of labour-intensive tasks like lifting and carrying water, oil-extraction, grinding, planting, weeding, carrying of firewood.
- Importation of animal-powered machinery should be discouraged. Rather, local artisans should be encouraged to make simple low-cost, animal-powered technologies appropriate to the needs of rural women.
- Encouragement of more outlets for credit facilities in the rural areas through government policies.
- Establishment of more animal traction training centres in the various northern states. – Encouraging the involvement of women in rural extension work, especially in the areas where interaction with male extension agents is poor.
- Encouragement of women's cooperatives.
- Promotion by Governmentorgans of the advantages of recreation for women as it affects their performance in their day to day work.
- Research in the rural areas should be undertaken to determine the present status of infrastructural facilities in therural areas as well as the number of women in the locality indicating their specific activities and responsibilities. This information will be required to determine in more specific terms the requirement of each rural area

## Résumé

*Cette étude présente les résultats d'une enquête nationale sur les techniques et activités traditionnelles des femmes des zones rurales du Nigéria et sur les infrastructures auxquelles elles ont accès au niveau des villages. L'impact de la technologie de la traction animale par rapport aux autres technologies utilisées par ces femmes est examiné et l'adoption de diverses stratégies susceptibles d'améliorer leur qualité de vie, y compris la mise en oeuvre des technologies appropriées de culture attelée, est préconisée.*