

**ASSESSMENT OF THE NIGER STATE TRACTOR HIRING
UNIT**

BY

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DECLARATION

I hereby declare that this project work is a record of a research work that was undertaken and written by me. It has not been presented before for any degree or diploma or certificate at any university or institution. Information derived from personal communications, published and unpublished work were duly referenced in the text.



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Isa, Aliyu Leje

05/03/12.
.....

Date

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ABSTRACT

A survey was undertaken to assess the Niger State Tractor Hiring Unit using fleet of equipment, personnel and workshop facilities, and its impact on the farming populace in the state as assessment criteria. The study adopted the use of a questionnaire and interview schedules, focused group discussion and personal observation for data collection. Records available at the headquarters of the unit provided additional source of information. The unit has a total of 134 tractors which comprises nine Heavy duty, 64 M.F Tractors, 37 Fiat Tractors, Eight Steyr Tractors, 16 New Holland 255, 24 Disc Plough, 23 Disc Harrow, and 21 Disc Ridger. Only 66% of the equipment assessed was functional, 17% required minor repairs to be used on the farm and 17% were scraps. The unit has neither a workshop nor an implement shed thus exposing the machinery to inclement weather. Personnel in the unit are adequate but the maintenance culture is service driven. There has been a general increase in farmer's incomes since the introduction of the unit even though only a few farmers have been able to access the services rendered by the unit. Several reasons accounted for the limited beneficiaries from the activities of the unit prominent among which are inability to raise the cost of hiring, delay in service delivery, remoteness of their farms which makes them inaccessible to farm machinery and small holdings usually below 2.5 ha, for which the use of farm machinery is unprofitable. The unit has great potentials for improving the agricultural productivity of the state if the equipment available can be effectively utilized. Recommendations made towards this goal include adoption of regular maintenance culture, a functional workshop and implement sheds be provided at the headquarters and area offices and adequate funding by the state governments.

TABLE OF CONTENTS

Cover Page	
Title Page	
Declaration Page	i
Certification Page	ii
Dedication Page	iii
Acknowledgement Page	iv
Abstract	v
Table of Contents	vi
List of Table	vii
List of Figures	viii
List of Plates	ix
List of Appendices	x
	xii
CHAPTER ONE	
1.0 INTRODUCTION	
1.1 Statement of the Problem	1
1.2 Aim and Objectives	3
1.3 Justification of Study	3
1.4 Scope of the Study	4
	4
CHAPTER TWO	
2.0 LITERATURE REVIEW	
2.1 Agricultural Mechanization in Nigeria	5
2.2 Animal Traction in Nigeria	5
2.3 Tractorization in Nigeria	8
2.4 Tractor Hiring Scheme in Nigeria	8
2.5 Hand-Tools Technology	9
2.6 Animal-Draught Technology	10
2.7 Engines-Power Technology	10
	11
CHAPTER THREE	
3.0 MATERIALS AND METHOD	
3.1 Methodology	13
	13

3.2 Administration of Questionnaire	13
3.3 Description of Study Area	14
3.4 Instrument for Data Collection	16
3.4.1 Questionnaire	16
3.4.2 Personal Interview	16
3.5 Procedure for Data Collection	17
3.5.1 Primary Sources	17
3.5.2 Secondary Sources	17
3.6 Sampling Method and Data Collection	17
CHAPTER FOUR	
4.0 RESULTS AND DISCUSSION	19
4.1 Results	19
4.1.1 Coordination of Activities	19
4.1.2 Equipment Inventory and Condition	19
4.1.3 Workshop Facilities and Personnel	20
4.1.4 Charges	21
4.1.5 Impact on the Farming Communities	22
4.1.6 Maintenance Culture	23
CHAPTER FIVE	
5.0 CONCLUSION AND RECOMMENDATIONS	24
5.1 Conclusion	24
5.2 Recommendations	24
REFERENCES	26
APPENDICES	31
Type A Questionnaire	31
Type B Questionnaire	32

LIST OF TABLES

Table 2.1 Some Field Operation Rates by Farmers Using Hand Tools	6
Table 4.1 Inventory and Conditions of Farm Machinery Owned by the NGSTHU	20
Table 4.2 Workshop Repairs of NGSTHU	21
Table 4.3 Educational Qualification of Scheme Operators in NGSTHU	21
Table 4.4 Charges for Services Rendered by NGSTHU	21
Table 4.5 Efficiency of Services Rendered by NGSTHU	22
Table 4.6 Farmers Awareness of the Existence of NGSTHU	23

LIST OF FIGURE

Figure 3.1 Map of Niger state showing 25 Local Governments Areas Visited 15

LIST OF PLATE

1. A Disc Harrow	33
2. A Disc Ridger	33
3. A Functional Tractor	33
4. An Outside Mechanic Carrying Out Repairs	34
5. A Disc Plough	34
6. Broken Down Unserviceable Tractor (Scrap)	34

LIST OF APPENDICES

1. Type A Questionnaire	31
2. Type B Questionnaire	32

CHAPTER ONE

1.0 INTRODUCTION

Prior to the advent of the oil boom of the 1960s, the Nigeria economy was substantially agriculturally dependent. Cash crops such as cocoa, cotton, groundnut and livestock products contributed more than 70% of total exports. Various food crops were also cultivated in sufficient quantities to meet the demand of the teeming population and Nigeria was one of the food self-sufficient countries of the world (Ikpi and Ikpi, 1998; Ado, 2005; Opara, 2006).

The discovery and exploration of crude oil as a more lucrative income earner for the country was the first major setback to the agricultural sector. The introduction of the nationwide universal free primary education in the early 70's and the extension of the free education to the secondary school level in the south western part of the country in 1979 resulted in the withdrawal of the active labor force from the agricultural sector. There was massive rural-to-urban drift made up mainly of the younger generation which left the farms in the hands of the aged. There was a drastic decline in both cash and food crops production and a country which was a major exporter of various agricultural crops became a major importer of even food crops such as rice and beans, and livestock. The expansion of the area under cultivation was contemplated as a possible means of addressing the food crisis situation and return the country to its former status as a food self sufficient country. If the target of increased area under cultivation was to be achieved with a declining labor force on the farm, then the productivity of the available manpower must be increased. Drudgery in the execution of various farm operations was also acknowledged as a major discouragement to the youths taking up farming. Mechanization of the farms which reduce the drudgery was

considered as a possible solution hence the introduction of the tractor and implements into the Nigerian agricultural system (Anazodo *et al.*, 1989, Hamidu and Simon, 1999; Haque *et al.*, 2001).

Even though many farmers are aware and are desirous of using farm machineries, the high cost of acquisition and maintenance make it a herculean task for an average Nigerian peasant farmer to own this equipment especially the tractor. As a result of this, tractors, implement and equipment ownership are mainly by government through the ministries of agriculture and departments and parastatals whose mandate involves substantially land clearing and development. Only a few large scale farms are able to acquire and use these machineries. In order to make the services available to the farming populace who are not economically strong to acquire the equipment, special unit were established and referred to as tractor hiring units. Many of these are government owned while only very few private entrepreneurs have ventured into this line of business because of the comparatively low return on investments. Because of the role they play in the agricultural production system, many researchers have examined the availability, accessibility and performance of farm power and machinery providers.

Application of tractor in agriculture which started in a few isolated locations in the country have spread to all nooks and cranes of the country and every state in Nigeria at present maintains a tractor and implement unit aimed at helping the Nigerian small scale farmers improve their farm sizes. Over two decades of the massive introduction of tractors into the Nigerian agricultural system, smallholding farms are still prevalent in many farming communities in Nigeria while a number of activities that can be mechanized are still carried out manually.

The establishment of tractor hiring unit has sensitized farmers on the advantages of utilization of tractors in farm operations. Availability of tractors has eliminated the drudgery usually encountered in activities such as land clearing, ploughing and ridging.

1.1 Statement of Problem

A lot of resources have been invested in procuring tractor and implement by the government with the view to alleviating the problem of mechanization in small scale farming in Niger state, this problem however, not over as the majority of the farmers still depend on their local tools and human efforts. The question then arises of why the situation has not been overcome with these huge investments. The prices of agricultural produce are still increasing and food produced could still not meet the demand. Possible factors like inadequacies of tractors for the farmers can come to mind but no sure cause can be pointed. Therefore a need to evaluate Niger state tractor hiring scheme.

1.2 Aim and Objectives of the Study

The aim of this study is to assess the operation and management of farm tractors and equipment under the tractor hiring unit in Nigeria using Niger state as a case study.

1.2.1 Objectives:

Specific objectives are:

1. To obtain the number of tractor and equipment supplied, number available and number broken down (with or without repair) available and their makes, and condition.
2. To obtain management data based on operation method and fund generation as means to enhance better management and investment.
3. To identify the associated problem that effect tractor hiring unit with the view to optimize the returns.
4. To assess the impact of the scheme on the beneficiaries.

1.3 Justification of the Study

The justification of this research project is to determine the status of farm machinery and to recommends way that will improve or increase the mechanization level in the state.

1.4 Scope of the Study

The scope of this work is to assess the efficiency of tractor hiring unit in Niger state.

CHAPTER TWO

2.0

LITERATURE REVIEW

2.1 Agricultural Mechanization in Nigeria

Odigboh, (1991), defines agricultural mechanization as "The manufacture, marketing, distribution, selection, application, utilization, proper adjustment and operation as well as maintenance of all types of tools, implements, machines and equipment for agricultural land preparation to the final food, feed, or fibre production including processing, preservation, storage and distribution or marketing". From this definition, agricultural mechanization forms the pillar on which the practice of agriculture stands. Spears, arrows, cutlasses and hoes among others were the early tools in agriculture and some of these tools especially hoe and cutlasses are still very much in use in Nigeria (Komolafe, 1980). Table I presents the field rates of various tillage operations using these hand tools in Nigeria as reported by Anazodo (1976).

TABLE 2.1: Some Field Operations Rates by Farmers Using Hand Tools.

Operations	Manual Field Work Rate (MAN-DAY/HA)+
1. Land clearing	20.1 to 47.8 (32.6)
2. Ridging for cassava planting	29.7 to 64.5 (43.8)
3. Mound making for yams	35.0 to 93.0 (57.8)
4. Cassava planting	(28.3)
5. Yam planting	(17.3)
6. Weeding root crop	22.3 to 77.6 (36.7)
7. Weeding (General)	(40.0)
8. Cassava harvesting	(28.5)
9. Yam harvesting	(32.0)

+ Average values in parenthesis

Source: Anazado (1976)

In an attempt to bring more agricultural land under cultivation and to remove the drudgery associated with the use of hand tools, advanced technologies were introduced into agricultural production in Nigeria. This started with the introduction of animal draught technology, which involves the use of animal like mules, oxen, camels, for tillage operations (Oni, 1987). However, animal draught technology has several limitations chief among which is restriction of its use to Tsetse fly-free zone of the Northern states (Odigboh, 1991). Mechanical power technology involving the use of tractor powered implement, machine and equipment were introduced in the country because they constitute a superior means of carrying out farming operations than the previously existing technologies. Tractors are used on the farm to carry out various jobs such as pulling of other implements, transmission of power and tillage operations to mention a few (Odigboh, 1991).

The problems with the tractor and equipment hiring units that made it impossible for them to make positive impacts toward agricultural mechanization have been discussed by many researchers (Sangodoyin and Ogedengbe, 1987; Mafari, 1988; Ayo, 1988). These problems include poor organizational set up, poor machine management, lack of proper record keeping and fraudulent practices. Hamidu and Simon (1999) reported that even though the establishments of tractor hiring services were expected to make farmers have access to tractors and implements for various farm operations, this opportunity had not been fully exploited by farmers because of irregular and untimely availability of tractors due to frequent breakdown, lack of spare parts and bureaucratic bottlenecks. Thus farm operations, especially land preparation were still predominantly a manual activity. Yohanna (2001) attributed the low level of farm mechanization in Nassarawa and Plateau states of Nigeria to the frequent breakdown of machinery caused by the hard soil pans and rocks that normally inflict injuries and damages to the tractors and implements. Anazodo (1982) reported that 90% of tractors that operated in some states in Nigeria broke down yearly and that repairs and maintenance cost constitute about 47.4% of operating costs. Ijioma (2000) reported that farmers faced difficulties in obtaining spare parts and after sale services while the scarcity of well-trained mechanics increased the breakdown rate of machinery. Tractor breakdown is, therefore, a major limitation to the use of farm machinery on Nigerian farms.

Nkakini *et al.*, (2006) identified the reasons for non use of machinery in agricultural practices as poverty, ignorance and cheap traditional tools which are readily available to the poor farmers. He further reiterated that the use of manual labor for agricultural operations had resulted to tractor underutilization. Akinoso and Mijinyawa (2001) observed that the condition of tractor hiring units in Nigeria was pathetic and not encouraging and concluded that proper management of tractor hiring units will keep the business going as it is being experienced in transport industries.

2.2 Animal Traction in Nigeria

The white Fulani, Sokoto Gudali and Zebu cattle are the main breeds of cattle employed for traction in northern Nigeria. Animal traction using the ox-drawn ridger appeared in northern Nigeria between 1952 and 1930 (Pingali, Bigot and Binswanger, 1987) and was used by various farming families growing cash crops. Its spread became more widely recognized when Fricke published statistics on the number of mixed farmers which had grown from just three in 1928 to 32,261 farmers in 1994 (Fricke, 1978).

Since then, animal traction utilization has gradually increased in the Sudan and Sahelian areas. However, there has been little serious attention from the government research institutions in terms of documenting the progress being made in this area. Our conservative estimate is that the number of mixed farmers and hence animal traction users must have more than doubled since 1964 to at least 70,000 in 1987.

2.3 Tractorization in Nigeria

The use or application of any type or size of tractor (single axle or track type of any power rating) to activities associated with agriculture is termed tractorization (Odigboh, 1991). Since the first use of internal combustion engine powered tractor in U.S.A in 1890, agricultural mechanization have undergone tremendous improvements. The tractor was introduced into the Nigeria Agriculture as a result of further technological advancement and the fact that there is greater need to increase productivity per work per unit land to feed the ever growing population (the growth rate of the country is estimated at between 2.5 and 3.5 percent per annum) (Jubril et al., 1993).

Tractors were introduced into Nigeria in the 1950s through the farm settlement scheme of the western regional government before spreading to other parts of the nation (Manoura, 1995). Oni, 1996 reported that farm tractors are being under-utilized to limited seasonal application

of farm tractors and the lack of technical and managerial competence to handle, use and maintain farm machinery.

2.4 Tractor Hiring Scheme in Nigeria

Tractor hiring scheme (THS) has a longer history in Nigeria than the period being considered in this project for Niger State. Aboaba (1967) reported that a tractor hiring firm was formed in Agege as early as 1952. The firm could not however commence operation until 1958. The objective then was to investigate the economics of tractor hiring scheme. Since then tractor hiring programmes have expanded slowly to other parts of the country (Aboaba, 1967).

A tractor hiring scheme was started in Northern Region (Choudhury and Musa, 1984) (THS) was introduced into the area that now constitute Cross-River State in 1971. As a result of the drastic fall in food production owing to Nigeria civil war, a farm mechanization unit was set up and the sum £54,000.00 was provided for the purchase of tractors and equipment which were hired out to farmers for land cultivation (Nwosu, 1989). Ever since, several other (THS) have been introduced in many states of the federation.

From the foregoing, there appears to be a consensus that mechanization is a key element to the development of agriculture in Nigeria and that tractor hiring services provide a viable strategy for promoting mechanization. The support of this idea is reflected in the rapid expansion of the tractor hiring units by the various state governments in Nigeria (Nwosu, 1989).

However, Niger State Agricultural Development Project (NSADP) has established a commercial tractor hiring scheme (CTHS) in today's modern farming seasons. The foremost aim and objectives is to boost Agricultural production in the state through mechanization and reduction in drudgery.

2.5 Hand-Tools Technology

Hand-tool technology is the simplest and the most basic level of agricultural mechanization and refers to tools and implements which use human muscle as the power source. It is of course, the lowest, the oldest and the most primitive level of agricultural mechanization.

Hand-tools include machetes, cutlasses, hoes, diggers, axes, spades, shovels, trowels, rakes, forks, mattocks, shears and so on. Mrema and Odigboh (1993) reported that about 86% of land preparation operations in Nigeria are carried out by these hand-tools powered by human muscle. When overall agricultural production is considered, the percentage for human power is up to 90%. Yet, the power output of a human being is a maximum of 0.07Kw, which is further, limited by stress especially at the high temperature and humidity conditions found in a tropical country such as Nigeria. Human work rate efficiency has been reported to be 50% in temperate climates and 10% in humid tropical conditions. Because of the above reasons, farming using hand power is arduous, inefficient and characterized by low rates of work. Thus, an average peasant farmer in Nigeria owns a farm less than 2ha which is barely enough to produce what is needed to feed his family (Anazodo *et al.*, 1989; Odigboh and Onwualu, 1994; Odigboh, 1983).

2.6 Animal-Draught Technology

Animal-draught technology is the next level of agricultural mechanization and refers to a wide range of implements, machines and equipments which are powered by such animals as oxen, horses, buffalos, camels and donkeys in singles, pairs or teams. This is generally limited the Sahel and Sudan Savannah ecological zones of Nigeria (Musa, 1988). The animals are used mainly for tillage and transportation. Their use for planting and operation of stationary machines such as water pumps, threshing machines, winnowers, chaff

cutters and grinders is very limited if it exists at all. The use of animal power is restricted to northern part of the country (Gwarzo, 1988).

The use of Draught animal Technology in Nigeria is said to be an improvement over the use of hand-Tool Technology because, more work can be accomplished per unit time using the work animals. In spite of this, the real situation is that only about 8% of farm operations are carried using draught animal technology in Nigeria (Musa, 1988; Odigboh, 1991).

2.7 Engines-Power Technology

Engine – powered technology is the highest and most modern level of agricultural mechanization. It refers to a very wide range of implements, machines and equipment powered by a similarly wide range of mobile or stationary power sources, engines and motors, using petroleum fuels or electricity.

Odigboh and Onwualu (1994) reported that engine powered agricultural mechanization technology was introduced in the early sixties through the farm settlement schemes in Nigeria. The technology include the use of a range tractor sizes as mobile power for field operations, engines or motors to power such machines as threshers, mills, irrigation pumps, grinders, air craft for spraying chemicals and self propelled machines for production, harvesting and handling of wide variety of crops.

The level of engine powered technology use in. Nigeria agriculture is relatively low. The tractorization intensity is about 18W/ha and about 50% of tractors and implements in Nigeria are not functional.

From the foregoing, it is clear that the extent of field machinery use in Nigerian agriculture is very low. Anazodo *et al.*, (1987) stated that in the United States of America, the intensity of machinery use for farmers in 1977 was 783W/ha while it was 37W/ha in

Africa as a whole and 18W/ha in Nigeria. This low figure was estimated based on the total available machines and the total cultivated area of land.

CHAPTER THREE

3.0 MATERIALS AND METHODS

3.1 Methodology

The study was conducted using questionnaires. Questionnaire were developed and administered to personnel relevant to tractor hiring scheme in Niger state. The questionnaire consisted of two types, type A and type B.

Type A questionnaire sought general information on tractor operator/managers, tractor hiring services and management of the tractors. See appendix (1). Type B sought information about the farmers, their activities in relation to tractor hiring services and their views on tractor hiring services. As at the time of the study, Niger state government has procured four (4) tractors to each local government. So type A questionnaire was administered to various tractor operators in each branch offices of selected local governments.

Type B questionnaire was administered at random to farmers who use the services of tractor hiring scheme in Niger state.

3.2 Administration of Questionnaire

In the course of this study, questionnaires and interview schedules were employed for the purpose of information collection. Additional information was equally gathered through personal communication while administering the questionnaire. Among the information sought were sizes of farm holdings, access to the activities of the unit, farmer's awareness of the existence of Niger state tractor hiring units etc. Each person on whom the questionnaire was administered was visited either in the office, on the farm or at home. The illiterate respondents were asked relevant questions and their replies were used as basis for filling the questionnaire for them. Twenty (20) questionnaire were administered to farmers while five (5) were administered to operators/managers in each selected (16) local governments of the

unit making a total of four hundred (400) respondents. Mechanized farms were excluded because they usually own their machinery and do not depend on tractor hiring units. Thus, the information (data) obtained were subjected to analysis upon which the discussions and the recommendation in this project report were based.

3.3 Description of Study Area

Niger State was created on 3rd February, 1976 from what was then called North-western state during the regime of General Murtala Ramat Muhammed. It actual began functioning, as from April 1st of that year. It lies on latitude 3.2°east and 11.3°north, with borders to the North-east and South-east of Kaduna state and F.C.T respectively. The state is covered on a land mass area of 74,244 sqkm, it experience distinct dry and wet seasons with annual rainfall varying from 1,100 mm in the Northern part of the state to 1,600 mm in the Southern parts. Almost all crops that can be grown in the southern forest zone and the northern savannah zone of Nigeria can thrive well in the state. However the lowest minimum temperatures occur usually between December and January when most parts of the state come under the influence of the tropical continental air mass which blows from the North, the dry season in Niger State commences in the October.

Niger state is covered by two major rock formations the sedimentary and basement complex rocks. The former to the south is characterized by sandstones and alluvial deposits, particularly along the Niger valley..

Three major soil types can be found in the state, these include the ferrugineous tropical soils, hydromorphic soils and ferrosols. The most predominant soil type is the ferrugineous tropical soils which are ideal for the cultivation of guinea corn, maize, millet and groundnuts.

MAP OF NIGER STATE SHOWING 25 LOCAL GOVERNMENT AREAS

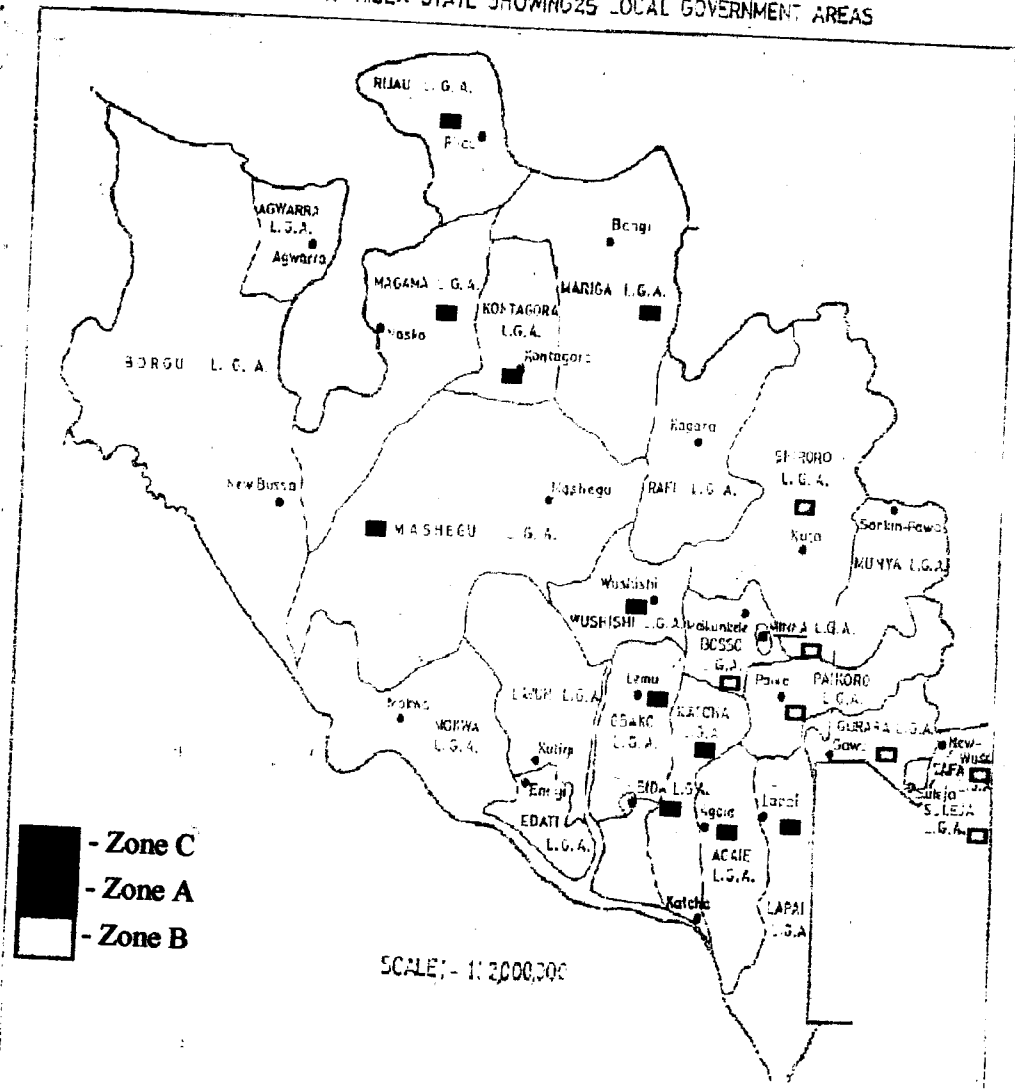


Fig. 3.1 Map of Niger State showing the 16 Local Governments Areas visited.

3.4 Instrument for Data Collection

For the period of this study, various instruments were adopted for the purpose of collecting the required data from the respondents. The instruments for the data collection are:

3.4.1 Questionnaire: This represents a set of questions that are posed in order to obtain responses in relation to the variable available. It is the most widely data collection instrument and was used extensively for this project research. The questionnaire employed is a mixed questionnaire comparison open-ended and close-ended questions. This includes;

a. Open-ended Questionnaire: This is also known as unstructured Questionnaires. Here the questions are not provided with options of possible answers. But instead, respondents are at liberty to use any form of wording available to them.

b. Close-ended Questionnaire: This is also identified as structured Questionnaire. It contains questions which are provided with some options of likely answers to guide the respondent in selecting the most appropriate one which corresponds to the questions asked. The rationale behind this to ensure that the respondent does not answer out of point; the applicability can be varied depending on the type of information required by the researcher. These variations include ranking of a provided list of variables and scaling which may be used to test the respondent's perception of the variable or subject matter.

3.4.2 Personal Interview:

This refers to personal interaction between the researcher and the interviewee to obtain information necessary for the accomplishment of his goal and the resolution of his problem. Here, the interviewer asks the interviewee a set of pre-selected and pre-planned questions, and their responses which should provide relevant data for the researcher would then be taken note by the researcher. It can be done by face-to-face or by phone calls. And also what the researcher has observed during the course of his research in the study area will be noted.

3.5 Procedure of Data Collection

From my research problem, to get accurate data for the purpose of this research a two-step approach to the study was adopted which were scheme operators/managers and farmers.

Sources of Data;

3.5.1 Primary Sources

This includes data collected through contact and personal interview with the people involved in tractor hiring. Also questionnaires were administered and their responses to the research questions will form part of the primary sources of data collection.

The advantages of the primary sources of data collection are that it ensures accuracy and enhance confidence in the quality of the data that will be collected. Also observation may not be influenced by the observer.

3.5.2 Secondary Sources

This includes gathered information sources from relevant write-ups, publication, professional journals, textbooks, newspapers, seminar and workshop papers and as well as government publication on the topics under study.

3.6 Sampling Method and Data Collection

Four Hundred respondents were sampled to sixteen randomly selected local Governments area in each of the three zones of the state which include; Agaie, Bida, Katcha, Lapai, Gbako, Chanchaga, Bosso, Shiroro, Gurara, Tafa, Paiko, Kontagora, Wushishi, Magama, Rijau and Mariga.

Data from the respondents were collected by the use of structured questionnaires due to the low educational level of respondents. The both questionnaire were divided into two sections as demographic information/personal characteristic of the tractor operation and maintenance by the scheme operators and the farmers. The profile of an individual comprises

a typical feature or quality forming part of the character of a person or an organization (Kirk Patrick, 1980). The profile of a tractor operator is a key indicator in assessing his management ability for tractor operation (Bhutta *et al.* 1997). Such things that are encompassed in the personal characteristics of an individual include: Sex, Rank, Qualification, Marital Status, Occupation etc. Education is one of the factors affecting the capability of the tractor operators. Marital status consists of the number of wife, children and dependant. Work experience is not an in born trait but it is acquired and culminated with respect to the level of hand on job over time.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Results

From the questionnaire administered, the results are presented in tables below.

4.1.1 Coordination of Activities.

The activities of the unit are centrally coordinated from the headquarters located at the Ministry of Agriculture and Rural Development Minna. The equipments have been distributed to the local government area offices. Each local government area in the state gives out the services and is responsible for their management and maintenance.

4.1.2 Equipment Inventory and Condition.

Table 4:1 shows the equipment inventory of the unit as at the survey period. In order to ascertain the capacity of the unit for service delivery, the tractors and implements were classified as functional, serviceable and scrap. Scrap was used for those equipment which have broken down to such a state that the unit believes that it may as well be better to acquire a new one rather than invest on their repair while serviceable was for all those that repairs will get them back to the field. 65% of the machinery was functional, 17% were serviceable and 17% were scraps.

Table 4:1 Inventory and Condition of Farm Machinery Owned by the NGSTHU

S/n	Equipment	No of Year unit purchased	Present condition		
			Functional	Serviceable	Scrap
1	Heavyduty tractor	9 2009	9		
2	M.F Tractor	64 2009	48	16	
3	Fiat Tractor	37 2006	9	2	26
4	Steyr Tractor	8 2003	3		6
5	New Holland 255	16 2010	16		
6	Disc Plough	24 2009	16	7	1
7	Disc Harrow	23 2009	16	5	2
8	Disc Ridger	21 2009	16	5	
Total		202	132(66%)	35(17%)	35(17%)

4.1.3 Workshop Facilities and Personnel.

The unit has neither a workshop nor an implement shed. An open field is used to accommodate the equipment and also used as workshop to service and undertake minor repairs. Major repairs and overhauling are contracted out. The unit has staff strength of 80 made up of 23 Engineers and 57 Non-Engineers. The ratio of tractor to operator is 4:5 which means that there are five operators to four tractors. This ensures that the tractors are not idle at any time due to lack of operator. Interaction with the operators revealed that there are periodic in-serve training to upgrade their skills and expertise.

Table 4:2 Workshop repairs of NGSTHU

Variable	Frequency	Percentage
Yes	0	0
No	84	100
Total	84	100

Table 4:3 Educational Qualifications of Scheme Operators in NGSTHU

Variable	Frequency	Percentage
Engineers	23	29
Non-Engineers	57	71
Total	80	100

4.1.4 Charges.

The charges by the unit are presented in Table 4:4. These rates exclude fueling and the individual to whom the service is rendered is expected to provide the fuel. Farmers who patronize the unit complained of delay in service delivery which in most cases either make them to reduce the area of land they would have cultivated, or affects the crop yield because of delayed operation, Hamidu and Simon (1999), Mijinyawa and Kisaiku (2006) made similar observations in Bauchi and Edo States respectively.

Table 4:4 Charges for Services Rendered by the NGSTHU

Service	Rate/Day(Naira)
Ploughing	12,000.00
Harrowing	12,000.00
Ridging	12,000.00

4.1.5 Impact on the Farming Communities.

Most farmers in Niger state are aware of the existence and the activities of the unit but not all of them have been able to benefit from the services. Based on the accessibility to the services rendered by the unit, the farmers in the states can be classified into two broad groups as shown in Table 4:5. The first groups are those who said that the service of the unit is good and have been able to increase their farm sizes and income. The group consists of full-time farmers and civil servants who take farming as a part time job.

The second groups are those who both said that the services rendered by the unit are fair and poor. And this group can be further subdivided into:

(i) Those who have sufficient landholdings but cannot afford the cost of hiring the equipment.

(ii) Those who are in areas far remote from area offices of the unit and whose farms are in places where there is no access routes for machines to be taken to such places for work even if the farmers can afford the cost of hiring, and

(iii) Those whose farm holdings are too small, usually below 2.5 ha and have no means of acquiring more land. In many instances, these small holdings are used for mixed cropping. The use of farm machinery by such individual farmers is uneconomical.

During the study, it was observed that some farmers who could not access the services of the unit employed more hands to increase their farm size.

Table 4:5 Efficiency of Services Rendered By NGSTHU

Variable	Frequency	Percentage
Good	155	48
Fair	112	35
Poor	53	17
Total	320	100

Table 4:6 presents the summary of responses to the question on awareness. About 86% of the respondents claimed to be aware of the existence of the unit and the services it provides. This shows that there is sufficient awareness on the part of the intended beneficiaries about the existence and activities of the unit.

Table 4:6 Farmers Awareness of the existence of NGSTHU

Variable	Frequency	Percentage
Aware	280	86
Not Aware	40	14
Total	320	100

4.1.6 Maintenance Culture.

A maintenance culture is a programme which specifies what action needs to be taken, at what time, by who and in what form in order to sustain a system. Buhari (2000) reported that the lack of a maintenance culture in Nigeria has been the bane of our predicament of inadequate and non-functioning infrastructure and that the inculcation of good maintenance culture by operators of public infrastructure and the public at large remains one essential condition to the resuscitation of ailing infrastructure. The maintenance of equipment is customer driven, that is maintenance is only carried out when there is a request for use of the equipment and for which payment has been made. Routine maintenance is not a practice of the unit similar to the findings of Mijinyawa and Kisaiku (2006) in Edo State and Mijinyawa and Adebayo (2010) in Kwara State. Lack of a routine maintenance culture appears to be common to most of the tractor hiring units nationwide. Another observation is the lack of proper care for the equipment in terms of storage. No implement sheds are provided and equipment is exposed to the inclement weather conditions.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The Niger State Tractor Hiring Unit has nine Heavy duty, 64 M.F Tractors, 37 Fiat Tractors, eight Steyr Tractors, 16 New Holland 255, 24 Disc Plough, 23 Disc Harrow, and 21 Disc Ridger. Majority of the equipment are functional but are parked unsheltered for lack of either an implement shed or a workshop Major repairs and overhauling of tractor and equipment are executed by contract. The maintenance culture adopted is customer driven. Many farmers have benefited from the services of the unit while few have not because of their inability to raise the service charge, small holdings and lack of access routes to their farms.

5.2 Recommendations

The unit has great potentials for improving the agricultural production of the state if well managed. Towards achieving this goal, the following recommendations are made.

- a) There should be a functional and well equipped maintenance workshop at the headquarters to ensure prompt repair and complete maintenance services in-house. This will reduce cost and eliminate delays associated with contract servicing. In addition, an implement shed should be provided to protect the machinery from inclement weather.
- b) The unit activities should be decentralized to enable farmers have quick access to the services.
- d) While it is expedient that the state government funds the unit adequately, the unit should be reorganized into a self-sustaining outfit, which is feasible taking into account the possible patronage if the unit can deliver services promptly and effectively.

e) A culture of regular maintenance should be adopted as this is cheaper and prolongs machine life.

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APPENDIX A

ASSESSMENT OF NIGER STATE TRACTOR HIRING SERVICES QUESTIONNAIRE.

This questionnaire which is part of a student project is design to collect information on the services rendered to farmers by the Niger State Tractor Hiring Services and constraint faced by the establishment. All information will be treated in strict confidence. Respondents are requested to provide information with all act of honesty.

TYPE A: TRACTOR OPERATOR / MANAGER

A. PERSONAL DATA

1. NAME.....
2. SEX.....
3. RANK.....
4. QUALIFICATION.....
5. MARITAL STATUS.....
6. LOCATION IN NIGER STATE.....

B. TRACTOR HIRING SERVICES

1. Tractor ownership: Government Agency Organisation Private Others
2. What type of tractor do you use: Steyr MF Fiat Zettor Others
 - i. No of available tractor: Steyr MF Fiat Zettor Others
 - ii. No of broken down serviceable: Steyr MF Fiat Zettor Others
 - iii. No of broken down unserviceable: Steyr MF Fiat Zetto Others
3. How old are the tractors: 1-3yrs 3-5yrs 5-10yrs Above 10yrs
4. Do you observe the following:
 - i. Routine maintenance: Yes No
 - ii. Major maintenance: Yes No
5. How often do the tractor break down: Daily Weekly Monthly
 - i. Usual break down problems of tractors.....
 - ii. Duration of repair: Days Weeks Months
6. Are you allowed to effect repairs on your own: Yes No
 - i. Is there any workshop for maintenance and repairs: Yes No
 - ii. If Yes: Name of available personnel.....
 - iii. If No: where is maintenance and repairs done.....
7. How do you get spare parts: Imported Locally
8. Do you obtain parts from other broken down non-serviceable tractor: Yes No
9. How much do you charge per hectare :
 - i. Harrowing ₦ : K
 - ii. Ploughing ₦ : K
 - iii. Ridging ₦ : K
 - iv. Others ₦ : K
10. Do you encounter problems assessing farmer's farms? State some of the problems.....
 ..
11. Do you always meet the need of farmers: Yes No
12. How many hectares do you work per farmer in a day:
13. What are the challenges encountered with regard to this scheme.....
14. Possible suggestion to government, if any.....
 ..

APPENDIX B
TYPE B: FARMERS

A. PERSONAL DATA

1. NAME.....
2. SEX.....
3. OCCUPATION.....
4. MARITAL STATUS.....
5. STATE OF ORIGIN.....
6. EDUCATIONAL BACKGROUND.....
7. RESIDENTIAL AREA.....
8. FARM LOCATION.....
9. Is farming your primary or secondary occupation: Yes No

B. FARMING ACTIVITY

1. Farm size over: $\leq 2.5\text{Ha}$ $2.5-5\text{Ha}$ $5-10\text{Ha}$ $\geq 10\text{Ha}$
2. How do you carry out your farming operations;
 - i. Tillage: personal tractor hired tractor , hired labour , personal/family labour
 - ii. Planting: planter , hired planter , hired labour , personal labour
 - iii. Harvesting: harvester , personal/family labour , hired labour
3. Are you aware of tractor hiring unit; Yes No

If yes, how much do you pay for tractor services?

- | | | | | |
|----------------|---|---|---|------------|
| i. Ploughing | N | : | K | Ha or day. |
| ii. Harrowing | N | : | K | Ha or day. |
| iii. Harvester | N | : | K | Ha or day. |
| iv. Planter | N | : | K | Ha or day. |
| v. Ridging | N | : | K | Ha or day. |
| vi. Others | N | : | K | Ha or day. |

4. Do you get tractor hiring services on demand? Yes No
5. Do you normally agree with the assessment of the size of the area to work on? Yes No
6. How efficient is the service rendered? Good , Fair , Poor
7. What are the challenges encountered with regard to this scheme:.....
.....
.....
8. Possible suggestions to government, if any.....
.....
.....

PLATE1: A Disc Harrow

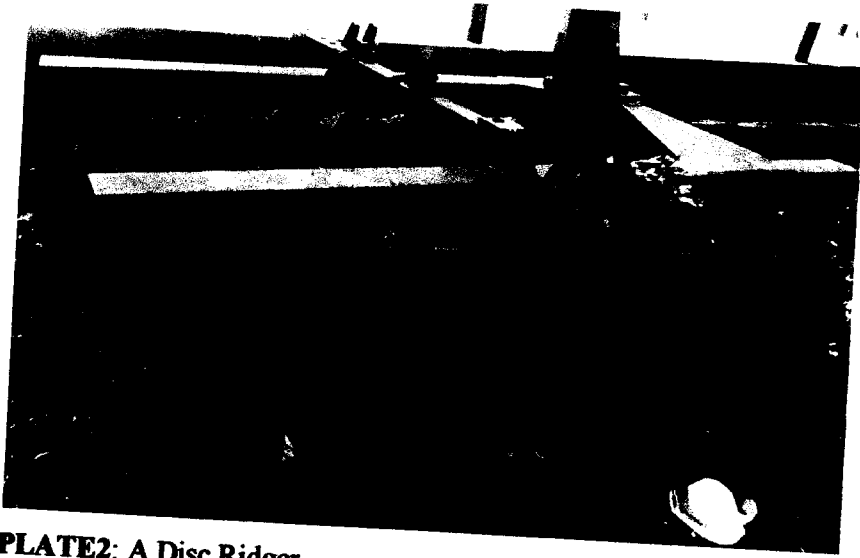


PLATE2: A Disc Ridger

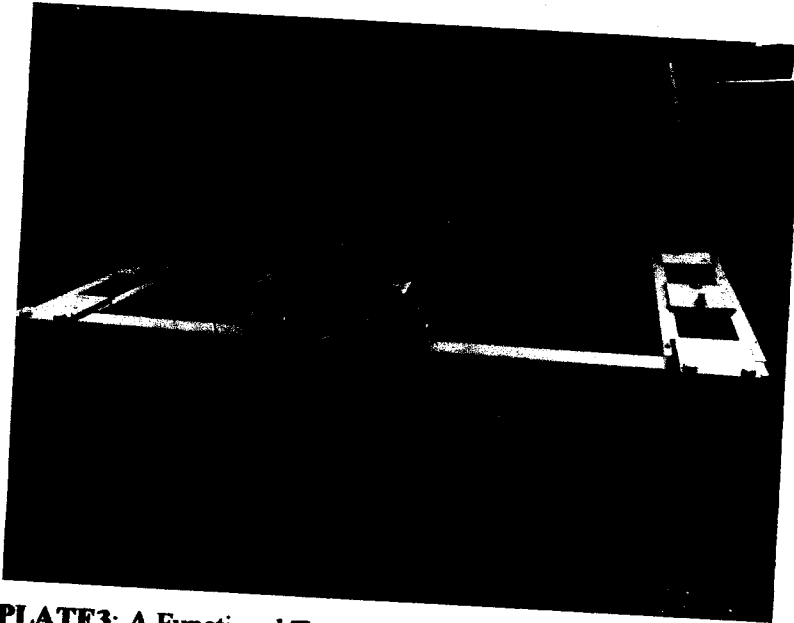


PLATE3: A Functional Tractor



PLATE3: An Outside Mechanic Carrying Out Repairs.

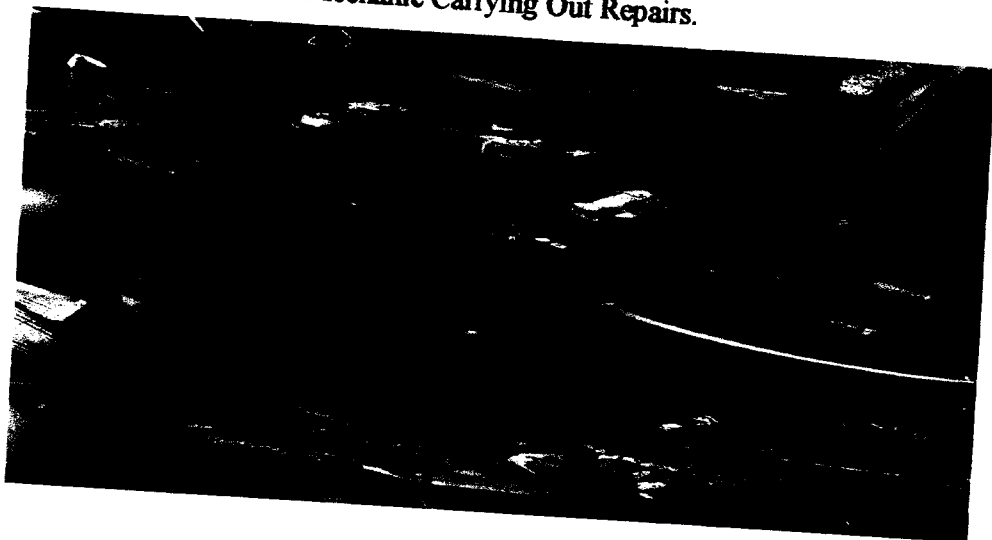


PLATE4: A Disc plough.

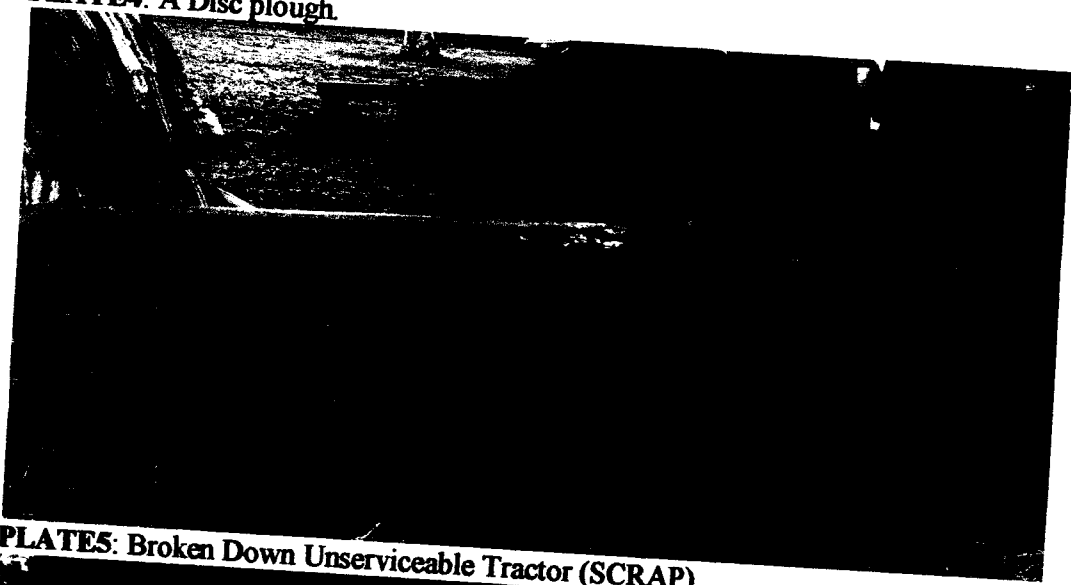


PLATE5: Broken Down Unserviceable Tractor (SCRAP).

