

**PERCEIVED DIFFICULTIES ASSOCIATED WITH UTILIZATION OF FARM MACHINES AMONG FARM WORKERS IN RIVERS STATE, NIGERIA**

**BY**

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**ABSTRACT**

*The study focused on perceived difficulties associated with utilization of farm machines among farm workers in Rivers State, Nigeria. Data for the study was collected from 120 randomly selected respondents from six corporations in the study area. Findings from the study revealed that spare parts was one of the most serious problems in the utilization of farm machineries. There was a lack of funds to purchase equipment for workshops. Inadequacy of workshop was reported to be a serious problem in Rivers State. Oil pump, piston and rings, oil filter, valves, injector nozzles, water pump and bearing were reported to be the most needed spare parts. Findings also revealed that socket wrenches and extension, feeler gauges and combination, box end open wrenches were available in the workshop. Lack of lathe machines, electric hand drills, reamers, ring compressors, power tools and dies in the workshop were also reported to be problems in workshops in the study area. It was recommended that among other things farmers must be educated to meet the demands of utilization of farm machinery in Rivers State. Rivers state farm workers should function better if funds are made available to purchase spare parts and tools in the workshop. Farm workers in Rivers State should note that other spare parts such as fan belt, battery, spark plug, gaskets, contact point and fuel filter etc are also important in the workshop. Workshops in Rivers State need to be equipped with small lathes, drill presses, wood-working machines, arc and torch-welding equipment, small power tools (for example electric drills), sanding equipment and numerous hand tools. Further study is needed to develop a system of warehouse for the spare part availability at the site (farm). Further study is needed to establish a policy of standard investment ratio of machine, resource distribution policy, spare parts policy and educational program policy in the utilization of farm machines in Rivers State, Nigeria.*

**Key words:** perceived difficulties, utilization, farm machines, farm workers

**INTRODUCTION**

The importance of farm machines in agricultural revolution of Rivers State cannot be overemphasized. A step towards an industrialized agricultural revolution is highly desirable in a developing nation like Nigeria. Despite the fact that farming is still practiced at the subsistence level, mechanized farming is also practiced. Sambrook (2004) posited that households using farm power technologies other than hoe gain considerable advantages in terms of the area cultivated, total yields achieved, level of drudgery, and opportunities to redeploy family labour in non-farm activities. There are problems however, that are associated with the utilization of farm machines in Rivers State of Nigeria. for instance, machines are idle or at times not used efficiently. This may be caused by unavailability of spare parts, lack of proper tools, lack of skilled personnel who mishandle the tractors, inadequate training. Modernizing the farming system with the aid of vocational agricultural education is necessary not only to help solve the problems of subsistence farming but also to help Nigeria meet the needs of an industrialized society.

The capacity selection of tractor, equipment and its use affects enterprise and farm profitability. Tractor effectiveness should be determined by the management skill in matching the work output of power and machinery systems to the time available (Witney and Oskoui, 1982). Competency in utilizing agricultural farm machines can be achieved if people discuss, recognize and define their needs. They should take control and assume responsibility for what they do. These ideas are based upon observation of many successful projects which adopted a democratic and cooperative form of organization.

Rivers State in Nigeria is blessed with natural vegetation which favours mechanization. A number of improvements have been made in the agricultural sector especially in tractor and implement production. Tractors have always been imported into Nigeria but they are not adequately utilized. Manufacturers must be aware of this fact, hence problems associated with the utilization of farm machines are important and should be given attention. Research indicates that attempts to overcome these constraints focus on inadequacy of workshops, non availability of spare parts, educating farmers, and cultural factors that prevent tractor use. Keeping maintenance costs down and providing farmers with a safe and comfortable working environment will help farmers produce more effectively. This, in turn will keep farm production at an optimum level and reduce the number of tractors and equipment the farmer will have to purchase. This study therefore determines difficulties associated with the utilization of farm workshops in Rivers State, Nigeria. Specifically the study determines the tools that are available in farm workshops, identifies tools needed in the workshops, and determines whether workshops have needed spare parts.

**METHODOLOGY**

The population for the study consisted of employees of farm corporations that have need for farm machines. They are: Niger Delta Basin Authority (NDBA); Oil Palm Nucleus Estate Ubima (OPNEU); Rivers State School to Land Farm (RSSLF); Prisons farm Elele (PFE); Rivers State Ministry of Agriculture (RSMA) and the Federal Ministry of Agriculture (FMA) (Rivers State Branch). These farm corporations have similar types of farming equipment, soil conditions and rainfall. Twenty farm workers from each of the identified corporations were selected to give a total of 120 respondents for the study. A questionnaire was the instrument used to gather the information needed. Data analysis was by the use of descriptive tools

**RESULTS**

**Availability of tools in workshop**

Farm workers were asked to check the hand tools and equipment that were available in their workshop. Results as shown on table 1 revealed that of the 120 respondents surveyed, seventy-eight percent indicated that combination, box end and open end wrenches were available. In Rivers State School to Land Farm, thirty percent indicated that combination box and open end wrenches were available, whereas at Federal Ministry of Agriculture, ninety-five percent indicate that combination box end and open end wrenches were available.

**Table 1: Availability of tools and equipment in the workshop by percentage**

<b>Tools and equipment</b>	<b>FMA</b>	<b>NDBA</b>	<b>OPNEU</b>	<b>PFE</b>	<b>RSMA</b>	<b>RSSLF</b>	<b>TOTAL</b>
<b>Tools</b>							
Electric hand drills	5	35	15	5	10	25	16
Combination box end & open end wrench	95	85	90	90	80	30	78
Socket wrenches &	40	80	95	40	100	15	62

extensions							
Allen & fluted wrenches	25	50	90	40	85	10	50
Probing tools	95	60	60	90	20	5	55
Ring compressor	20	40	10	20	30	15	22
Feeler gauge	60	75	80	60	80	10	61
Reamers	30	25	5	15	45	10	22
Taps & dies	15	10	5	15	20	40	17
Vise	45	85	95	60	85	65	72
<b>Equipment</b>							
Lathe	40	20	50	55	30	10	34
Drill press	100	70	85	100	70	10	72
Wood working machine	30	35	85	30	50	15	41
Arc-& torch-welding	40	20	20	40	45	0	27
Power tools	5	30	10	30	35	35	24
Sanding equipment	65	60	85	55	25	65	59

Of the 120 surveyed sixty-two percent indicated that socket wrenches and extensions were available. In Rivers State School to Land Farm, fifteen percent indicated that socket wrenches and extensions were available as opposed to hundred percent in Rivers State Ministry of Agriculture. Of the 120 respondents surveyed fifty percent responded that there were availability of Allen and fluted wrenches. Sixty-one percent indicated that feeler gauges were available. It was also reported that drill press and sanding equipment were available. Rivers State School to Land Farm has the lowest percentage of tools available. On further probing respondents indicated that sometimes improvisation of tools were used.

#### Tools Need For The Workshop

Of the 120 surveyed eighty-four percent indicated that electric hand drills were needed in the workshop. seventy-eight percent reported that ring compressors were needed. Reamers, tap and dies, lathe, arc-torch-welding equipment and power tool were also needed in the workshop. Rivers state school to land farm has the highest percentage of tools and equipment needed. See Table 2.

**Table 2: Tools and equipment needs for the workshops**

Tools and equipment	FMA	NDBA	OPNEU	PFE	RSMA	RSSLF	TOTAL
<b>Tools</b>							
Electric hand drills	95	65	85	95	90	75	84
Combination box end & open end wrench	5	15	10	10	20	70	22
Socket wrenches & extensions	60	20	5	60	0	85	38
Allen & fluted wrenches	75	50	10	60	15	90	50
Probing tools	5	40	40	10	80	95	45
Ring compressor	80	60	90	80	70	85	78
Feeler gauge	40	25	20	40	20	90	39
Reamers	70	75	95	85	55	90	78
Taps & dies	85	90	95	85	80	60	83
Vise	55	15	5	40	15	35	28

Equipment							
Lathe	60	80	50	45	70	90	66
Drill press	0	30	15	0	30	90	28
Wood working machine	70	65	15	70	50	85	59
Arc-& torch-welding	60	80	80	60	55	100	73
Power tools	95	70	90	70	65	65	76
Sanding equipment	35	40	15	45	75	35	41

**Availability of spare parts**

Findings revealed that radiator hose, injector pump, crankshaft and push rod were the least needed spare parts by the respondents. Oil pump, valves, injector nozzles, oil filter, water pump, and bearing were the most needed spare parts in Rivers State. The importance of these parts to the machine cannot be overstated.

**Table 3: Availability of spare parts**

Spare parts	Percentage	Ranking
Oil pump	83.3	1
Valves	82.5	2
Injector nozzles	75.8	3
Oil filter	73	4
Water pump	71.7	5
Bearing	64.2	6
Piston and rings	60	7
Cylinder block	52	8
Push rods	51	9
Crankshaft	50	10
Injector pump	47.5	11
Radiator hose	25	12

Note: 1= most needed, 12= least needed

Of the 120 respondents surveyed, sixteen percent indicated that they got their parts overseas, while eighty-four percent indicated that spare parts were purchased locally (See table 5). Of the 120 farm workers surveyed sixty-three percent indicated that it took one to six month to get spare parts to workshop, while twenty-six percent responded that it took less than one month to get spare parts to the workshop

**Utilization of farm Machines**

Of 120 farm workers surveyed ninety-eight percent felt there was a need for the utilization of farm machinery in Rivers State. Eighty-eight percent indicated the farms had workshops. The information on the respondents rating on the problem of utilizing of farm machineries was under the heading of: not a problem, least serious problem, serious problem and very serious problem. Lack of funds to purchase equipment for the workshop was a very serious problem in Rivers State. Tractors lying idle was also a very serious problem. It was also indicated that inadequacy of workshop was a serious problem to state.

**Table 4: Rating of the problem of utilization of farm machines (n=20)**

Problem area	Not a problem	Less serious	Moderate	Very serious
<b>FMA</b>				
Shortage of personnel	30	65	5	0
Lack of spare parts	0	15	45	40
Inadequacy of workshop	0	10	30	60
Tractor lying idle	30	15	10	45
Funds to purchase equipment	0	5	10	85
<b>NDBA</b>				
Shortage of personnel	50	40	5	5
Lack of spare parts	5	15	35	45
Inadequacy of workshop	5	20	20	30
Tractor lying idle	35	15	25	40
Funds to purchase equipment	5	5	10	80
<b>OPNEU</b>				
Shortage of personnel	35	60	0	5
Lack of spare parts	10	30	40	20
Inadequacy of workshop	5	25	25	45
Tractor lying idle	20	10	10	60
Funds to purchase equipment	10	20	40	30
<b>PFE</b>				
Shortage of personnel	30	20	30	20
Lack of spare parts	15	15	35	35
Inadequacy of workshop	15	0	55	30
Tractor lying idle	5	10	45	40
Funds to purchase equipment	20	5	35	40
<b>RSMA</b>				
Shortage of personnel	30	30	35	5
Lack of spare parts	10	30	15	45
Inadequacy of workshop	20	15	5	60
Tractor lying idle	20	20	20	40
Funds to purchase equipment	5	10	40	45
<b>RSSLF</b>				
Shortage of personnel	65	30	5	0
Lack of spare parts	5	50	35	10
Inadequacy of workshop	10	40	40	10
Tractor lying idle	5	5	45	45
Funds to purchase equipment	0	30	45	25

Of the 120 farm workers surveyed sixty percent indicated that 15 or less tractors were available in the work place. Twenty-one percent responded that 21-30 tractors were available in their place of work. See Table 9.

**CONCLUSION**

The study identified perceived difficulties associated with utilization of farm machines among farm workers in Rivers State, Nigeria. The study found that spare parts was one of the most serious problems in the utilization of farm machineries. There was a lack of funds to purchase equipment for workshops. Inadequacy of workshop was reported to be a serious

problem in Rivers State. Oil pump, piston and rings, oil filter, valves, injector nozzles, water pump and bearing were reported to be the most needed spare parts in Rivers State. Findings also revealed that socket wrenches and extension, feeler gauges and combination, box end open wrenches were available in the workshop. Lack of lathe machines, electric hand drills, reamers, ring compressors, power tools and dies in the workshop were also reported to be problems in workshops in the study area. Based on the findings of the study the following recommendations have been made:

Nigerian employee should aim at having a standard workshop and where to get spare parts to facilities agricultural mechanization in Nigeria. Farmers must be educated to meet the demand of utilization of farm machinery in Rivers State. Rivers state farm workers should function better if funds are made available to purchase spare parts and tools in the workshop. farm workers in Rivers State should note that other spare parts such as fan belt, battery, spark plug, gaskets, contact point and fuel filter etc are also important in the workshop. Workshops in Rivers State need to be equipped with small lathes, drill presses, wood-working machines, arc and torch-welding equipment, small power tools (for example electric drills), sanding equipment and numerous hand tools. Further study is needed to develop a system of warehouse for the spare part availability at the site (farm). Further study is needed to establish a policy of standard investment ratio of machine, resource distribution policy, spare parts policy and educational program policy in the utilization of farm machines in Rivers State, Nigeria.

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