PROSPECTS OF TRACTOR VALUE CHAIN SERVICES IN AGRO-PRODUCTION WITHIN ILARO AGRICULTURAL ZONE

[1]ENEMAKU, LAWRENCE EBENEHI, & [2]OGUNLADE, CHRISTOPHER BAMIDELE

[1,2]**Agricultural and Bio-Environmental Engineering Technology Department, Federal Polytechnic, Ilaro, Ogun *State*.**

[1]lawrence.enemaku@federalpolyilaro.edu.ng
[2] christopher.ogunlade@federalpolyilaro.edu.ng

Abstract

The application of agricultural machineries and associated working implement has revealed the immense contribution of technological revolution to agricultural production within Ilaro agro ecological environs. This was evident owing to the continual expanse of land area under cultivation, decrease in human labour utilization and the bumper harvest associated with this application. Agro-machinery rental services providers mediate between the farmers and its stakeholders in ensuring the delivery of quality services such as hiring of machineries, equipment and other necessary farming inputs which meets the needs of end-users' farmers through a defined system. This necessitated the need to review the prospects of tractor value chain services in Ilaro, using the performance of existing private and public agro-service providers. Fifty (50) farmers with over 1 – 1.5 hectares of land under agricultural cultivation were randomly selected. Information provided through the use of developed questionnaire were used as data to analyze the level of patronage, affiliated challenges and the prospects that lies ahead with tractor value chain services in the locality.

Keywords: *Agriculture, Tractor, Rental, Farmers, Ilaro.*

Introduction

Agricultural revolution in the 20th century has enhanced the intensive use of machines and equipment in agriculture operations. Engine powered machinery and farm implement became essential major inputs to agricultural mechanization operations-agricultural revolution (Alabadan and Yusuf 2013). While this to some farmers was synonymous to the application of farm tractors and its implements in farming operations, it also meant to others a technological approach to increasing the production per hectare of land cultivated per farmer. Presently the high cost of farm machineries such as tractors and its working implements ownership in Nigeria presently mitigates against their usage by majority of farmers who lack the economic capacity to purchase them (Dauda *et al.*, 2018). Like other states in Nigeria, Ogun state agricultural sector; Ilaro in Egbado south local government area in particular is dominated by smallholder peasant farmers working on an average of 1–1.5 hectares (ha) of land each. Achieving the need to attain mechanization of farming operations in this region of the state requires the application of farm machineries such as tractors, bulldozers, combine harvesters and the likes for its operations through adequate management schemes needed for the expansion of land put to cultivation. (Lamidi and Akande 2013). Ogun State is one of the States in the south-west region of the country where demand for the usage of machinery is on the increase, though tractor and its requisites implement operations were majorly associated with two major planting season identified as early planting and late planting seasons (Akinoso, 2017). Odigboh (1991) in a similar research findings identified farm machineries and their requisite equipment to constitute the most important items for farm investment after the land. These machine can be made available for farmer's utilization through either the government ownership rental scheme (Public rental services) or the privately owned rental scheme (services). However, many farmers within Ilaro agricultural zone in Ogun state has over time suffered a huge deficit in the increase of tractor utilization and its associated implements in their daily farming activities where needed. Their availability through any of these existing ownership schemes and the management practices to meet farm power requirement, most especially for the peasant farmers in reasonable time for their farming operations, has been of immense concern over time. Agro-service centers are saddled with the responsibilities of delivery system to cater to the needs of farmers in any specified areas such as

the hiring of machinery, with operator, labour support, providing inputs and soil testing services support. Agro-service centers are designated to provide different agricultural inputs to farmers. Need for agro-service centers was identified as one of the key solutions to the agricultural mechanization (Olaoye and Rotimi 2014). Presently, the Ogun state government is defining the economic role of sustainable agriculture that can transform the current experimental subsistent practices to a sound mechanized commercial status. This has been carried out through mechanization policies and definite actions been embarked upon through the establishment of Ogun agricultural development program (OGADEP) and Agro Services Cooperation (AGROSCORP). These state-owned agencies are saddled with responsibilities of providing awareness and supports to farmers' activities within the state. Many of the state established agro-services outfits are fast folding up, while the existing ones are not thriving, thereby leading to low agricultural mechanization in the state. This is on the backdrop of among others, the unaffordability and unprofitable ownership of farm machineries and its requisites equipment by the most smallholder farmers who are in the majority. Presently, many end user-farmer demands within Ilaro are challenged; the public agro-service provider AGROSCORP in the locality has been confronted with enormous challenges that are problematic to the operational development of the sector. These challenges ranges from the existing low level of distribution and utilization of the few and scarcely-available farm machineries and their associated implement for various farming operations among farmers who could afford them either on private ownership or public rental basis. (Jekayinfa *et al., 2015*). The main objective of this research work is to investigate the prospects of tractor value chain services in agricultural practices in Ilaro, Egbado south local government area of Ogun state.

Research Methodology

The study for this research work was conducted within Ilaro, situated in Egbado south of Ogun State, Nigeria. Its geographical coordinates are 6° 53' 0" North and 3° 1' 0" East (wikipedia.com, 2023).

Figure 1. Geographical location of Ilaro

Data Collection

This study was reviewed using a developed questionnaire as a material distributed randomly to one hundred and twenty (120) farmers with minimum of 1-1.5 hectares of farmland under cultivation to obtain primary data pieces of information for achieving the research objectives and proffer appropriate solutions where required. Secondary data was principally collected from the resident state owned agro-service center responsible for agricultural development projects. Other secondary data was based on results of published works in journals, seminars, and conferences.

Data Analysis

The use of primary and secondary sources played vital role in this research study. Primary data were collected through the use of structured questionnaires demanding major characterization questions and details of the names of

agro services providers, their location, and year of establishment, equipment/implement, specification, operation, maintenance and cost for the job. While secondary data with relevant information to research work was obtained from Agricultural documents such as journals, workshop/seminar and past related research works. The collated data were analyzed using descriptive statistics to review the extent of involvement, impact and prospects of existing agro service providers in Ilaro.

RESULTS

Characteristics of Each Firm

Table 1: Questionnaire responses from Agro services stakeholders

S/N	Information	Number of responses
1	Service Providers	Private (99%) & Public (1%).
2	Brand of Machinery & Equipment	TRACTOR (47%), BULLDOZER (23%), ROLLER (10%), EXCAVATOR (20%).
3	Brand of Machinery	New Holand (18%), Mahindra (16%), Ursus (19%), MF (43%), Fiat (4%).
4	Hired Implement	Plough (49), Harrow (33%), Ridger (9%), Slasher (3%), Sprayer (3%), Cultivator (2%), Harvester (1%).
5	Brand of Implement	Baldan (60%), Permitter (17%), Jactor (5.7%), Others (17.3%).
6	Source of Power Supply	Generator (45%), National Grid (8%), Both (47%).
7	Workshop Available	Available (55%), Contractual (35%), Empty (10%).
8	Workshop Infrastructure	Private (92%) & Public (8%).
9	Scope of Services Provided	Land Clearance & Preparation (40%), Tractorization Process (40%) & Both (20%).
10	Charges Bases	Operations type (55%) Operational days required (10%), Fueling (10%) & Repair & Maintenance (25%).

Source: Administered questionnaire

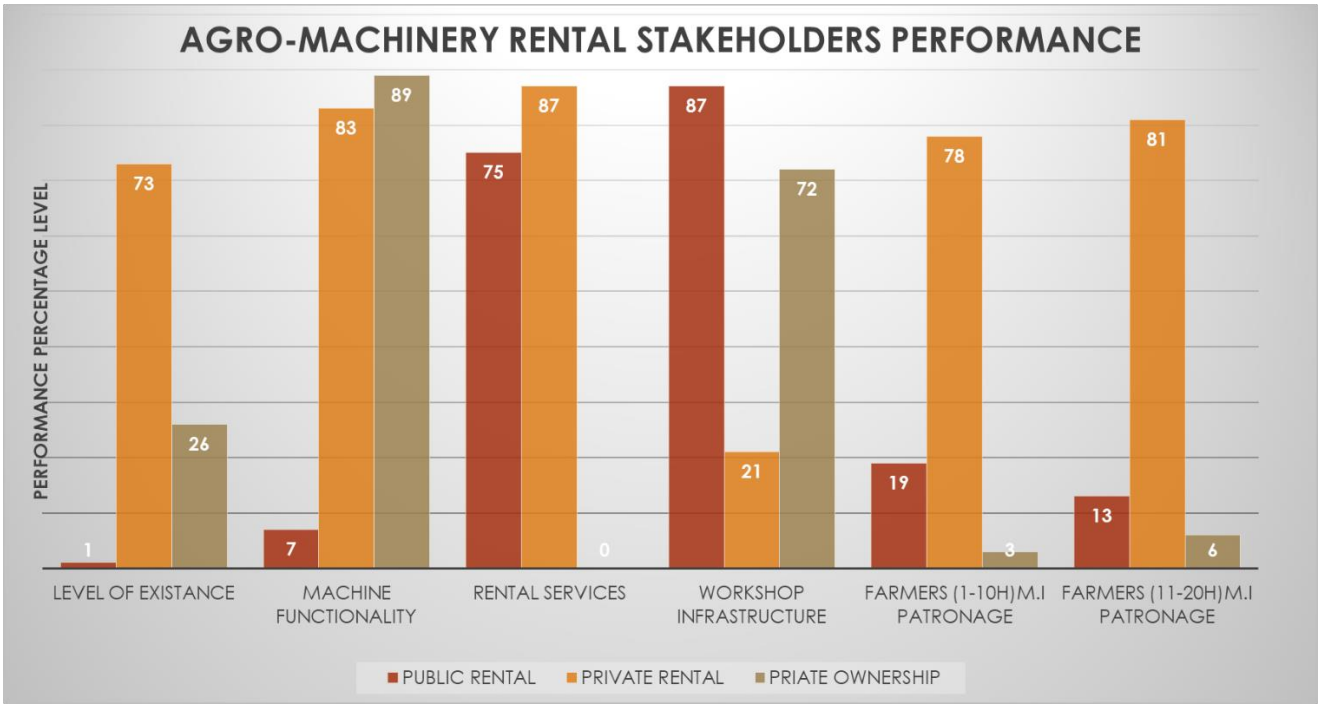

Fig. 1: Existing Rental Stakeholders Performance Indications

DISCUSSIONS

Table 1 above shows the questionnaires responses from the managers of each tractor value chain services providers. It was observed that 99% majority were privately owned while only 1% is government established agency. Data collated revealed that, the farm tractor constituted only a 47% of the machinery owned by both private and public tractor value chain service providers. This was associated to the high cost of initial procurement and operational cost. Though, majority of these tractors were maintained and repaired were in designated mechanical workshop owned and operated by these service providers. It was observed that end-user of the tractors had a preferred choice of brand which accounted for 43% of the Mersey Ferguson (MF) tractor brand hired. This choice was also owned to the availability, farm work utility, ease of operation and maintenance acquaintances of this brand. Also, working equipment majorly used as attachment with these tractors are the Plough, Harrow, Ridger, Slasher, Sprayer, Cultivator and Harvesters which were basically used for primary tillage and secondary tillage operations, crop protection and harvesting operation respectively. The plough and harrow accounted for 49% and 33% most hired working attachments (equipment) used in farming operations by majority of the end-users. Despite the high charges associated to their hiring services, the quest and demand of farmers that needed this equipment were never deterred and met during the farming season. It was discovered that about 60% of the equipment brand which were Baldan made were very cheap and affordable to procure, hence the reason for the dominance. Results also showed that 98% of the private service providers had readily and functional repair and maintenance workshop. This was due to resident technically skilled personnel's who performs these maintenance operations.

CONCLUSION

This study has revealed the level of utilization demands placed on tractor and its requisites working equipment among farmers who are end-users in Ilaro. Data information collated indicated that the majority of service providers which constituted the private sector has prospectively profit trifling business irrespective of the fact that most of the end-user's demands for their services were fairly met. It was observed that, majority of the scarcely owned tractors and working attachments-equipment owned by the public service providers were in poor working conditions because they were not well managed. This was necessitated by the perceptions of appointed custodians who saw it as a government owned property. While, the private sector received proper attention and care since the owners were actively involved in the maintenance activities. Nonetheless, there exist profit opportunities for more prospective investors in this value chain services owing to the ever growing demand amidst the present which remain fully unmet.

RECOMMENDATIONS

To solve the problem of the high cost of hiring equipment/implement, efforts should be made by both the public and private sectors to increase the number of tractor and equipment available in Ilaro. The public owned service providers (government) should make the environment conducive for the local manufacture, fabrication and production of affordable small tractors that satisfies end-users need. Cooperative and commercial financial institutions should invest in leasing services of tractors and its requisites equipment to farmers. By applying these efforts, the low availability and associated cost of hiring a tractor in Ilaro will be drastically reduced.

REFERENCES

Akinoso, I. (2017). Tractor Hiring Unit in Lagos State, Ministry of Agriculture: *Report on professional work experience.*

Alabadan B. A., Yusuf Y. (2013). Tractor Hiring Schemes in Nigeria: A case study of Federal Capital Territory (FCT); *AJAR* Vol. 8(47), 5962-5966.

Dauda Solomon Musa, JohnJiya Musa and Desa Ahmad (2018). Mechanization Effect on Farm Practices in Kwara State, North Central Nigeria**:** *IOSR Journal of Engineering (IOSRJEN)* 2(10), 79-84.

Jekayinfa SO, Adebiyi K.A, Waheed M.A, Owolabi O.O (2015). Appraisal of Farm Tractor Maintenance Practices and Costs in Nigeria: *Journal of Quality Maintenance Engineering.* 11(2), 152-168.

Odigboh E.U (1991). Continuing Controversies on Tillage Mechanization in Nigeria: *Journal of Agricultural Science Technology.* 1(1), 41-49.

Olaoye, J. O. and Rotimi A.O. (2014). Measurement of Agricultural Mechanization Index and Analysis of Agricultural Productivity of some Farm Settlements in South West, Nigeria**:** *Agricultural Engineering International: the CIGR E-journal. Manuscript* 1372. Vol XII.

Wasiu Agunbiade LAMIDI and Lamidi Olawale AKANDE (2013). A Study of Status, Challenges and Prospects of Agricultural Mechanization in Osun State, Nigeria; *Journal of Education, Arts and Humanities.* https://www.watchpub/jeah/index.htm

http://www.wikipedia.com. (2021) Geographical location of Ilaro, Ogun state, Nigeria