

Problems Militating Against Tractor Hiring Service in Nigeria- A Review

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Abstract: *The quest to provide tractors by the government at its various levels that could be hired by farmers motivated the establishments of the various tractor hiring service (THS) schemes in Nigeria. Over the years a number of independent studies have reported some problems limiting the successful operations of the THS schemes. In the present study, the reports of these informative studies have been reviewed. The review has shown that tractor breakdown, high repair and maintenance cost, inadequate tractor population, delays in service delivery and poor maintenance culture are some of the problems militating against the THS schemes. Finally, recommendations that could offer solutions to the aforementioned problems were suggested.*

Keywords: *Tractor Hiring Services, Agricultural Mechanization, Government Owned Tractors*

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I. Introduction

Agricultural mechanization is playing a significant role in many ways which includes increasing land and labour productivity, reduction of drudgery in agricultural operations, value chain addition, increasing timeliness in agricultural operations, promoting modernization and commercialization of small-scale farming sector and sustainable crop production intensification (Sims *et al.*, 2016; Snobaret *et al.*, 2016). Several implements and machineries were involved in the mechanization process and their selection is depending on the specific operations involved. The agricultural "tractor" could be referred to as the mother of agricultural mechanization for its decisive role in power supply. Majority, if not all, of the operations carried out in the farm could be powered by the agricultural tractor. Ploughing, harrowing, ridging, seeding and planting, fertilizer and chemical applications, threshing, trailing, and transporting are few examples of these operations. Findings have shown that the utilization of tractor for the aforementioned agricultural operations has the capacity to significantly increase the efficiency of such operations. For instance, a study (Legg *et al.*, 1993) has shown that a farmer that uses a tractor can produce food for fifty peoples unlike production of food for only three and six peoples by the same farmer equipped with hand-hoe and draught animal power (DAP) respectively. Also, it has been established that ploughing operation of a hectare of land could be achieved in just 2-4 hours with a small tractor as against the 60 and 3-4 days of the hand-hoe and DAP equipped farmer (Snobaret *et al.*, 2016). Therefore, these findings have shown that the usage of a tractor in the various agricultural operations is a reliable means of significantly increasing the efficiency of agricultural operations. The increase in efficiency of the operations will result to significant increase in farmers output especially considering the dramatic increase in global population that is expected to reach 9.1 billion by the 2050 (FAO, 2013).

Unfortunately, the tractor and a majority of farm machineries and implements are too expensive for the peasant farmer to own privately (Parashunathet *et al.*, 2016; Akinoso and Mijinyawa, 2001; Mijinyawa and Kisaiku, 2006). Also, the cost of machineries used in developing countries, including Nigeria is at about 30% of the total investment in agriculture (Ellis and Wainwright, 1994) and the cost of operating the machineries is the largest farm expenditure (Igbeka 1986). Perhaps, this called for the governments attention to establish special units referred to as "tractor hiring units" which are mainly owned and operated by the government through the ministries of agriculture and lately by departments and parastatals whose mandate involved substantial land

clearing and development (Mijinyawa and Kisaiku, 2006). The services rendered by these units are referred to as the “Tractor Hiring Services” (THS). As it was successfully established and ran, even rich farmers that are engaged in agribusiness still prefer to go with the option of hiring a tractor to eliminate the cost involved in the fuelling and maintenance of a farm tractor (Soyoye, 2018). However, over the years there were reports of inefficiencies, limitations and all sorts of complains by the famers patronizing the THS. Thesehas provoked various research groups from different geo-political zones of the Nigeria to carry out studies to establish the status-quo. The groups have reported various problems militating against the THS, but despite these informative reports, there has never been any effort to review these reports and come up with summary of information with regards to the THS to the best of our knowledge.

Therefore, herein an extensive review of the related published articles/reports has been conducted and information in terms of; specific and peculiar problem of the THS, number of tractors available for the THS and number of functional tractors in THS in the various locations across Nigeria has been summarized. Furthermore, some hypothetical facts that could be responsible for such problems have been raised and recommendations are suggested for possible solution to the problems militating against the THS.

II. Problems Militating Against THS in Nigeria

2.1 Tractor Breakdown

A failure or breakdown is any inability of a part, component or the whole machine to carry out its function, partially or completely (Mijinyawa and Kisaiku, 2006). It is as a result of inherent failure in the machine or due to misuse (Apollos, 2001). Tractor breakdown is a major limitation to the use of farm machinery in the Nigerian farms (Mijinyawa and Kisaiku, 2006). Various studies have reported their findings with regards to the tractor breakdown, location specific and Nigeria in general. The most striking finding amongst is that reported by Anazodo (1982) where about 90% of tractors were reported to breakdown yearly in Nigeria. Kehinde (2011) reported that 50% of the tractors in Osun State were reported to breakdown in a year. A more recent study (Abubakar *et al.*, 2014) has given more insight into the issue, where tractor breakdown rate of 28.33% per 6 months, 25% per 6 months and 46.67% per 12 months has been established. The aforementioned findings have shown a significant and rapid tractor breakdown which could drastically affect the THS as claimed. Based on the articles reviewed, the causes of the tractor break down are as depicted in Fig. 1.

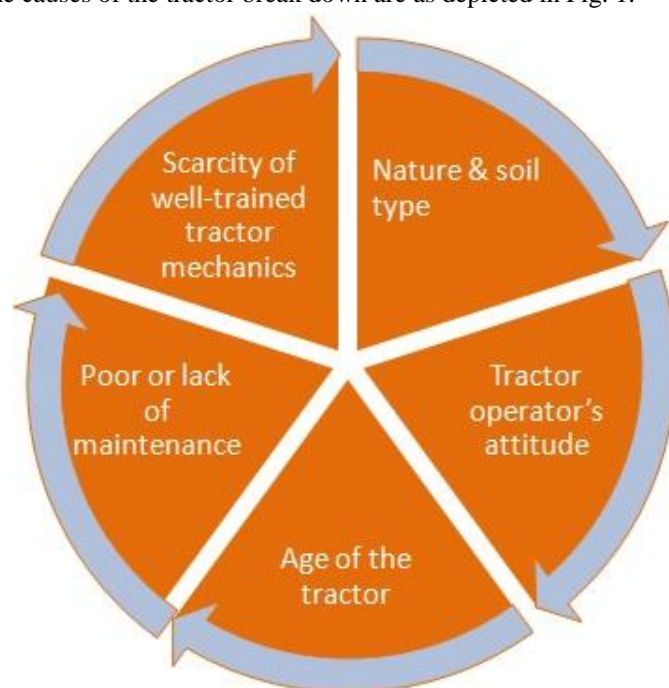


Fig. 1 Causes of Tractor Breakdown

According to Yohanna(2001), the nature and soil type is amongst the causes of tractor breakdown (as seen in Fig. 1). This could be validated by the significant variation in the topography and soil types within the different locations especially at the levels of geo-political zones in Nigeria. However, specifics on how the nature and soil types resulted to the tractor breakdown remains a puzzle and thus requires a further investigation. Also, scarcity of well-trained mechanics for routine maintenance (Ijioma, 2000), poor or lack of preventive maintenance practice by the THS schemes (Usman and Bobboi, 2003), rough-handling and “I don’t care- attitude” of the tractor operators (Bida, 1978; Mijinyawa and Kisaiku, 2006), and age of the tractors in THS schemes (Ohanyereet *et al.*, 2014, Kehinde, 2011, Alabadan and Yusuf, 2013) (as depicted in Fig. 1) are factors that has to do with the level of good supervision, proper administration and government’s commitment in the THS.

2.2 High repair and maintenance cost

Repair and maintenance costs as much as 47.7% of the total operating cost in Nigeria (Anazodo, 1982). Knowing that repair cost per hour increases with hours of usage, therefore, finding has shown that a repair cost by careful operation and maintenance could result in a significant reduction in tractor ownership costs (Jekayinfaet *et al.*, 2005). While observing how the repair and maintenance cost affects the THS in Nigeria, lack of spare parts is considered the major constrain in the cost of repair and maintenance (Alabadan and Yusuf, 2013; Maradunet *et al.*, 2013). For instance, it has been reported that in Zamfara State, about 92% of the required spare parts are not available (Maradunet *et al.*, 2013), and in some cases when the parts are available, the costs are very exorbitant (Alabadan and Yusuf, 2013). Undoubtedly, the presence of a repair and maintenance workshop could be influential in reducing the cost of repair and maintenance. However, findings have shown that there was no such facility in Zamfara and Kwara State’s THS schemes (Maradunet *et al.*, 2013; Mijinyawa and Segun, 2010). Most often, the major repair and maintenance is carried out by contractors/mechanics, hence increasing the cost of repair and maintenance. The increasing cost could be directly proportional to the tractor age and usage, perhaps militate against the smooth running of the THS. Related study where the consequences of the repair and maintenance cost on government owned tractor schemes has been reported by Obinna and Oluka(2016).

2.3 Inadequate tractor population

The number of tractors in Nigeria is reducing daily (Akinoso and Mijinyawa, 2001), thus making it not enough to serve the teeming population of farmers and ultimately affecting the cost of the THS in the country (Soyoye, 2018). The decreasing trend in number of tractors has been experienced since the year 1983, where the 100 tractors available at a river basin development authority (RBDA) decreased rapidly to twenty-nine within only five years (Kolawole, 1992). Also, in 2010, the National Centre for Agricultural Mechanization had only two (2) tractors which were in a state of disrepair. The Centre’s management refurbished the two (2) tractors and went further to acquire additional five (5) tractors and accompanying implements for the entire institution (NCAM, 2019). Also, in 2004, the Osun state government purchased 336 units of tractors for agricultural mechanization programme (Osun State Agricultural Development Corporation), farm settlements and LGAs tractor hiring units for use by farmers (Kehinde, 2011). Thus this effort is considered amongst the highest number of tractors purchased by any state government.

Recently, Sokoto state government is set to introduce 30 tractors to start a hire scheme as part of its efforts to boost mechanised farming and food production in the state (Daily Nigerian, 2018). However, the number of tractors set to be supplied is insignificant considering the number of tractors set to be supplied vis-a-vis the agricultural activities going on in the state especially at the locations of their irrigation facilities. Table 1 presents the data reported (between the years 2010 to 2014) on tractor population for some THS units in respective states in Nigeria.

Table 1. Some Data Related to the Available Tractors at the Various THS in Nigeria reported between 2010 - 2014

Location	Tractor Model (s)	No. of Tractor Available	Functional Tractors (%)	THS Peculiar Problem	Reference
Edo State	Steyr 768, Fiat 80-66, Massey Ferguson 375	34	23.5	<ul style="list-style-type: none"> Lack of technical staff's capacity Famer's smallholdings 	Mijinyawa and Kisaiku, (2013)
Kwara State	Ursus 5312, New Holland 5635 and Heavy Duty Tractors	38	34		Mijinyawa and Segun (2010)
Zamfara State	-	-	60.2	<ul style="list-style-type: none"> Lack of technical knowledge for the operation and maintenance of tractors 	Maradunet <i>al.</i> (2013)
Kano State(Kura &Garun Malam LGAs)	-	-	33.33	-	Abubakar <i>et al.</i> (2014)
Osun State	Massey Fergusson and David Brown	336	-		Kehindeet <i>al.</i> (2011)
Imo State	Ursus, New Holland, Steyr, Fiat, Swaraj, and others	99	65.65	<ul style="list-style-type: none"> None of the tractors has enclosed cabin People come from the local governments with fewer tractors to the city to hire tractors High cost of tractors discourages investments in THS 	Ohanyereet <i>al.</i> , (2014)
Lagos State	-	-	-	<ul style="list-style-type: none"> Economic situation of the country 	Akinoso and Mijinyawa (2001)

2.4 Delays in service delivery

Delays in service delivery by THS schemes to the farmers has been established in Nigeria which makes the farmers reduce the area they would have cultivated thereby reducing their crop yields (Mijinyawa and Segun, 2010; Mijinyawa and Kisaiku, 2006; Hamidu and Simon, 1999). Soyoye (2018) iterated that delay in service delivery is a hidden cost that hinders the cost of tractor hiring in Nigeria.

According to the Lagos State Ministry of Agriculture, only 40% of farmers' requests were met in the year 1999 (Akinoso and Mijinyawa, 2001). Similarly, Alabandan and Yusuf (2013) established that despite the high charges, the services demands are always not met. Some research group (Mijinyawa and Kisaiku, 2006) has attributed the delay in the THS delivery to the inadequacy of the tractors, which has been discussed in sub-section 2.3.

2.5 Poor maintenance culture

It has been established that the maintenance culture in the THS schemes are customer motivated not routine (Mijinyawa and Segun, 2010; Mijinyawa and Kisaiku, 2006) which is against the conventional and recommended maintenance schedule usually specified by the tractor manufacturers.

During the off-season,two maintenance cultures are usually practiced by the THS schemes in Nigeria. The safest amongst is keeping the tractors under shed for almost seven months (Alabandan and Yusuf, 2013). Whilethe worse amongst is the case where tractors and implements are kept in an open space (where sheds are not available), thus subjecting the tractors to very harsh environmental conditions(Mijinyawa and Segun, 2010; Maradunet *al.*, 2013). Both the two cultures could be detrimental to the well-being of a tractor, hence affecting the efficiency of THS schemes in the country.

2.6 Attitude of the tractor operators

The untoward attitude of the tractor operators in form of “I don’t care attitude in handling the tractors” of the THS schemes is another factor militating against the THS (Akinoso and Mijinyawa, 2001). Also, financial misappropriation and even stealing by some other THS scheme staff has also been established to sabotage the THS delivery (Alabadan and Yusuf, 2013; Akinoso and Mijinyawa, 2001).

2.7 Ineffective THS administration

Several bottlenecks of the THS administration were reported to hinder an effective THS in Nigeria. These includes: long bureaucracy for release of funds (Akinoso and Mijinyawa, 2001), political interference leading to frequent change of managerial staffs (Maradunet *al.*, 2013), lack of records on the tractors (Alabadan and Yusuf, 2013; Maradunet *al.*, 2013; Radford and Richardson, 1977) leading to the use of rough estimates in determining when the tractors are due for maintenance and replacement (Alabadan and Yusuf, 2013). Undoubtedly, these problems will cause ineffectiveness in the administration of THS in the country.

2.8 Other peculiar problems

Other problems militating against THS that are peculiar to some locations of the THS in Nigeria have been presented in Table 1.

III. Recommendations

Based on the discussions presented, the following recommendations are suggested for a more effective THS schemes;

- I. Governments at various levels should make sure the number of tractors available in their respective THS schemes is adequate vis-a-vis the number of farmers in the locations and potential agricultural land available.
- II. Also, in procuring the tractors, consideration should be given to the nature and type of soil and topography of the area where the given THS is located.
- III. Well-equipped workshops and tractor parking sheds should be established at the offices of the THS schemes to ensure that routine maintenance is practiced and sufficient parking space for the tractors is available.
- IV. Government should install an efficient administrative strategy at the THS scheme that will ensure close supervision to guaranty financial accountability and the practice of appropriate maintenance schedules as suggested by the tractor manufacturers.
- V. Government should create enabling policies that will encourage public-private partnership (PPP) programs with the various tractor manufacturers to ease the ownership of tractors by the individual farmers and groups

IV. Conclusion

Some related articles have been reviewed and discussed and problems that are militating against the successful operation of the various THS schemes across Nigeria have been summarized and baseline information has been provided. More importantly, recommendations that could provide solution to the various problems identified have been suggested.

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