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To study the status of tractor drawn farm implements used in the Bulandshahr district

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Abstract

This study constitutes the status of power utilization in Bulandshahr district. Based upon the survey conducted data as reference hence proposing the estimated data of the current status of power utilization in Bulandshahr district has more specifically its two regions Ganga regions, Yamuna region are differentiated based on soil type. Arid or semi-arid, agro climate zone weather and location based on these two different region's differences. Agricultural mechanization is the application of machinery and technology largely as a means to enhance the productivity of human labour and often to achieve results well beyond the capacity of human labour. There are three systems of farm power used for these tools, machines and equipment, manual and animal draft, and motorized power. When irrigation pumps, tillage equipment, chaff cutters, tractors and threshers were gradually introduced for farm mechanization. The most common power sources in farming are tractors, which are almost without exceptions powered by diesel engines.

Keywords: power, survey, soil, climate, labour, etc.

Introduction

Agricultural mechanization is the application of machinery and technology largely as a means to enhance the productivity of human labour and often to achieve results well beyond the capacity of human labour. There are three systems of farm power used for these tools, machines and equipment, manual and animal draft, and motorized power. When irrigation pumps, tillage equipment, chaff cutters, tractors and threshers were gradually introduced for farm mechanization. The most common power sources in farming are tractors, which are almost without exceptions powered by diesel engines. Recently the new diesel technology has entered also farm tractors, mainly due to the new emission regulations. Technologies like variable geometry turbochargers, inter cooling and electronic common-rail fuel systems have improved the efficiency of the tractor engines. However, the efficiency of a tractor as a whole depends only partially on the engine. The status of farm mechanization in Bulandshahr District of Uttar Pradesh was selected. Bulandshahr is in the Meerut Division of Uttar Pradesh, located between Ganges and Yamuna rivers. This is situated between 28.4 0 south and 28.0 0 north latitude and between 77.00 and 78.00 longitude. The District is about 84 km in length and 62 km in breadth. The district is 237.44 meters above sea level (GOI, Singh YP. 2008).

Material and Method

Description of Study Area Bulandshahr District is in the Meerut division of Uttar Pradesh, located between Ganges and Yamuna rivers. This is situated between 28.40 south and 28.00 north latitude and between 77.00 and 78.00 longitudes. The District is about 84 km in length and 62 km in breadth. The district is 237.44 meters above sea level.

Selection of farmers (Land holdings) Selection of farmers was done on the basis of land holding capacity of the farmers. (Bimal K. Misri, 2006) Marginal (less than 1 ha), Small (1-2 ha), Semi-Medium (2-4 ha) Medium (4-10 ha) and Large (more than 10 ha). Status of Tractor operated farm Implement a survey for the selected farmers was done on the basis of farm size holdings and use of tractor for different operations throughout the year for 7 Tehsil.

A. Land preparation: typically involves ploughing, harrowing and levelling the field to make it suitable for the crop established. Draft animals, such as buffalo or tractors can all be used as power sources in land preparation. The initial soil tillage can also be performed with a cultivator instead of a plough.

B. Sowing: Seeds is sowing by using a seed drill, pneumatic planter which offers greater precision; seed is sown evenly and at the desired rate. The drill also places the seed at a measured distance below the soil.

C. Irrigation: It is an artificial application of water to the soil. It is used to assist in the growing of agricultural crops, maintenance of landscapes, and re-vegetation of disturbed soils in dry areas and during periods of inadequate rainfall.

D. Harvesting: Farmers generally use Combine harvester, Reaper binder, Mower self-propelled or tractor operated for harvesting their crops.

E. Threshing: Threshing was done by the Tractor operated Threshers. Mechanical thresher wheat and paddy and pedal operated paddy thresher are used the large and medium farmers.

F. Transportation: Transportation of the crops has done by the Tractors, Horses, Bullock cart etc.

Energy Estimation Human energy estimation, Machine energy estimation.

Result and Discussion

4.2 The status of selected farm implement for different categories

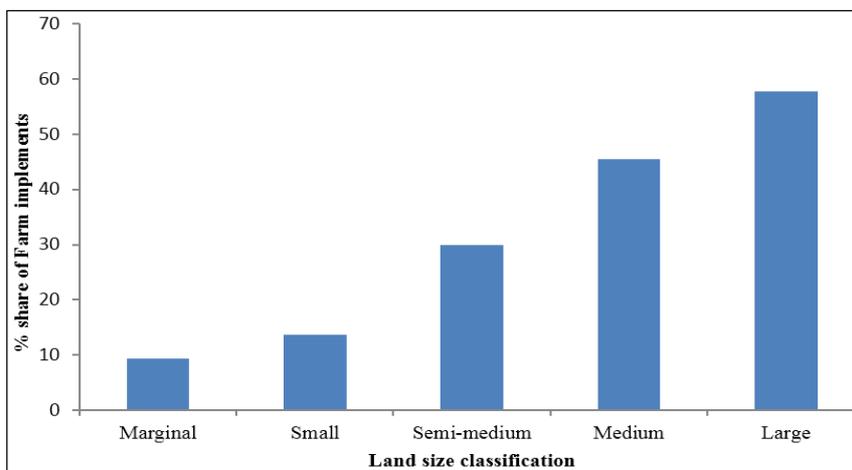
The farm implements used generally in Bulandshahr region are Cultivator, Mouldboard plough, Disc plough, Harrow, Leveller, sprayer, Seed-Drill, Planter, Trans-planter, Reaper and Thresher. In all the regions, the farm categories defined these implement and their use of status. Mould board plough, disc plough and other farm implements bear very less

percentage in terms of use for the case of marginal farm category. Hence, it can easily be said that farmers with marginal land holding use animal power in comparison to farm implements. While use of threshers are minimal as well as their final product is not much in amount which did not make it efficient to go for such a costly implement.

For Ganga region small, and semi-medium farm categories the trend is almost similar with a slight increase in usage of cultivator (18%, 34%), M.B. plough (3.5%, 15%), harrow (2.5%, 9%), seed-drill (3.5%, 42.5%) and planter (1.7%, 38%). This pattern is also similar in the Yamuna region.

In case of medium farm category, the implements used so a dramatic change in pattern when compared with the other fore-mentioned categories. In this case, Cultivator (56%) emerged as the main Implement used by the farmers and this is well justified depending upon the size of their lands (4-10 ha). The cultivator is then preceded in percentage by the Leveller (12%) and M.B. plough (27%). Other Implements like Sprayer (9%), Seed-Drill (69%), Planter (66%), Thresher (96%) etc. also show their presence with these farmers.

In case of large farm holding category, the data is hardly competed by most of the implement. But here Cultivator (75%) continues to enjoy lead over other implement though by a little margin. It is closely followed by Leveller (16%), M.B. plough (35%) and Disc plough (23%) etc. sprayers (13%), and Thresher (99%), Harrow (53%), Seed-Drill (77%) and Planter (75%) are also of some visible percentage making it very distinct in use. Again in this case as well, the same trend is observed in all the regions.



Use of various Farm Implements (%) according to various Farm categories In Ganga region

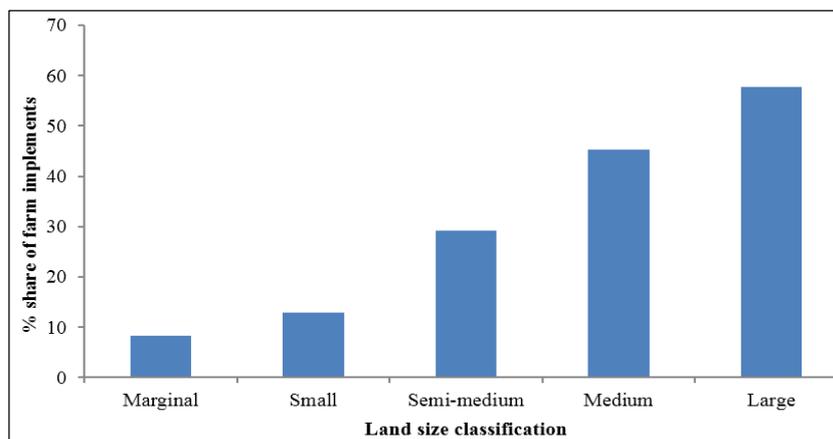
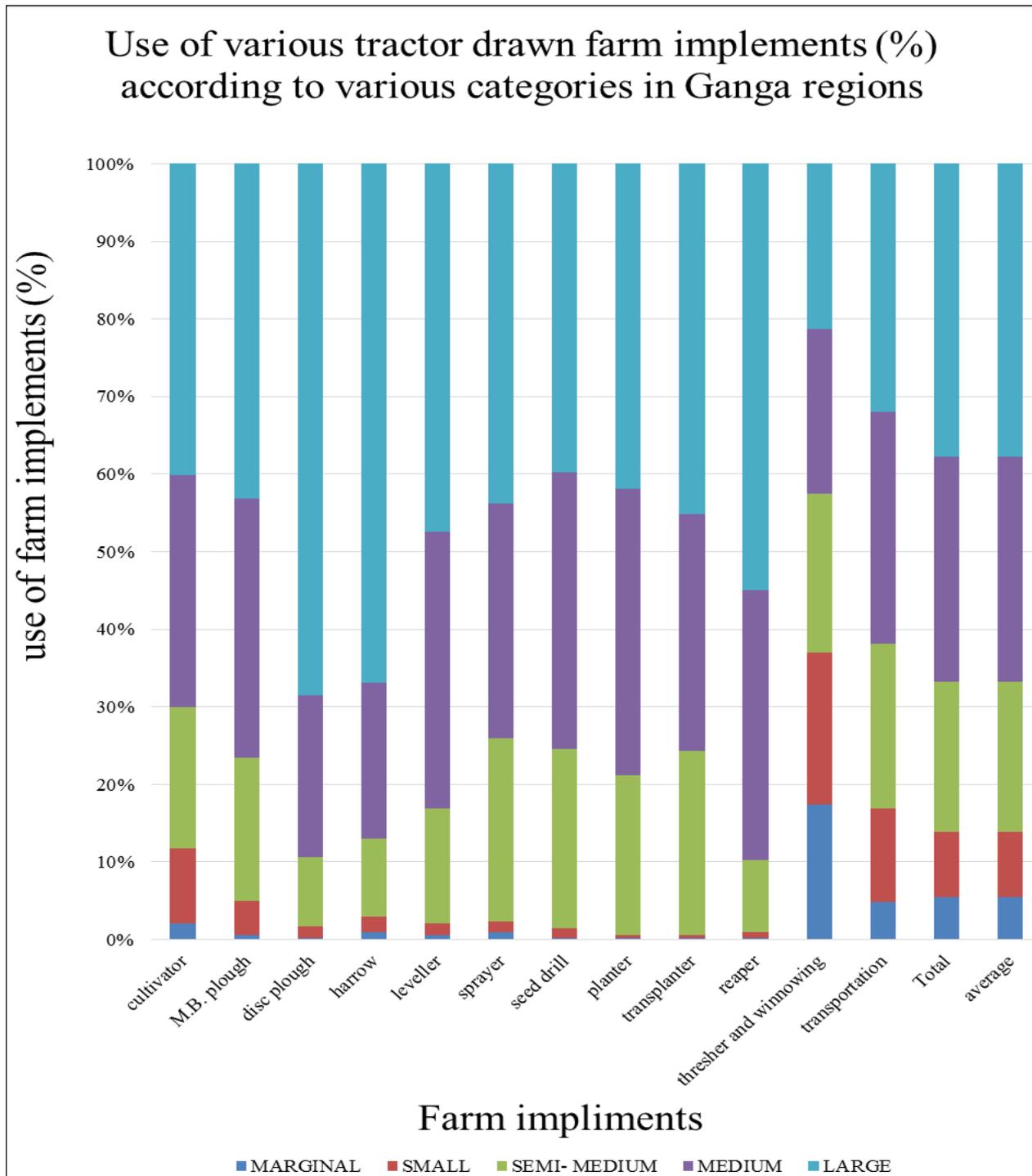


Fig 4.6: Use of various Farm Implements (%) according to various Farm categories in Yamuna region



Conclusion

Following conclusions have been drawn from the present study -

1. Use of farm implements in Ganga region for Marginal, Small, Semi-Medium, Medium and large farmers was 8.28%, 12.70%, 28.95%, 44.50% and 56.84% respectively. In Yamuna region for Marginal, Small, Semi-Medium, Medium and large farmers was 8.11%, 12.54%, 28.79%, 44.33% and 56.66% respectively.
2. Inanimate power available in Ganga region was maximum for large farmers (73.18%) and minimum for Marginal farmers (14.39%). In Yamuna region was maximum for large farmers (73.90%) and minimum for Marginal farmers (14.95%).

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