

Utilization of Private Owned Power Tillers for Land Cultivation in Boro Season: A Comparative Analysis of Barind and Silt Area

(Published in 13 September, 1993)

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b) Executive summary

Land tilling in Bangladesh is done by animal power since ancient period. The number of animal power is decreasing day by day for various reasons. In the mean time the farmers have started using power tillers in tilling their lands. The use of power tiller and its economical benefits vary from area to area. This is because of soil type and cropping patterns. Thus, this study was conducted to examine the variation on the use of power tiller in "Boro season" in Barind and Alluvial area of Bogra District in Bangladesh in 1988.

In this, it is found that in Barind area maximum number of power tillers is owned by large category of farmers while in Alluvial area the maximum number of power tillers is owned by medium category of farmers. The ownership of power tillers is also found concentrated within the educated families (families having members with S.S.C. and above level of education) in both Barind and Alluvial area.

Power tiller owners and the hired users (those who use power tiller on hired basis) of both Barind and Alluvial area have tilled more than 80% and 60% of their lands in Boro season respectively.

The owners of power tillers in Barind and Alluvial area have tilled on an average 29.10 acres and 8.96 acres of lands by a power tillers respectively. The difference is found to be statistically highly significant. The reasons for the difference in power tillers used in Barind area has been used both for

their own and on commercial basis while in Alluvial area the use of power tillers has been confined within their own use only.

Break even point of a new and second hand power tiller in Barind area has been calculated 5.40 acres and 6.25 acres for "Boro" season respectively and in Alluvial area it is 5.10 acres and 3.95 acres respectively. In both Barind and Alluvial area it is found that the power tiller has been used above the Break even point in "Boro" season.

The net income of a new power tiller is found to be positive in Barind area while negative in Alluvial area. The reason is that the income earned from a new power tiller in Barind area is quite enough to meet up both variable and fixed cost with a margin while in Alluvial area enough gross margin is not left to meet fixed cost. The net income of a second hand power tiller is found to be positive in both Barind and Alluvial area but it is higher in Barind area. The reason for positive net income of a second hand power tiller in both Barind and Alluvial area is that the income earned from a second hand power tiller is enough to meet up both variable and fixed cost with a margin as the fixed cost i.e. price of a second hand power tiller, is nearly half of the price of a new one.

Financial analysis i.e Net Present Value, Benefit Cost Ratio and Internal Rate of Return, of a new and second hand power tiller has been calculated. It is found that at the present context, the use of both new and second hand power tiller is commercially feasible in Barind area while not in Alluvial area. This is because of availability of required quantity of land in Barind area and non availability of such quantity of land in Alluvial area.

A multiple linear regression model has been set for the analysis. In this model, it is assumed that the quantity of land cultivated in "Boro" season by a farmer has a positive impact, the quantity of draught power of a farmer available in "Boro" season has negative impact and the quantity of own cultivable land has a positive impact on the quantity of land tilled with power tiller by a farmer in "Boro" season. The value of R-square for Barind area, Alluvial and Barind-Alluvial area together are 0.76, 0.82 and 0.81 respectively. The value of R-square is found statistically highly significant. The quantity of land cultivated by a farmer in "Boro" season has a highly positive significant impact and the number of draught available in "Boro" season has a highly negative significant impact on the quantity of land tilled with power tiller in "Boro" season by a farmer both in Barind and Alluvial area. In Barind area the impact of the quantity of own cultivable land of a farmer on the quantity of land tilled with power tiller in "Boro" season has been found significant but in Alluvial area, the impact of the variable is not

found significant, In case of Barind Alluvial area together, the impact of all the three independent variables on the dependent variables have found to be significant as sign mentioned in the assumption.

In conclusion it is suggested that there is enough scope in employment generation and increasing agricultural production if the use of power tiller can be widely extended. To extend the use of power tillers, it is necessary to increase cropping intensity and reduce the price of power tiller. Proper agricultural price support programme can help in increasing cropping intensity through crops diversification and free import duty and price subsidy policy can help in reducing the price of a power tiller.

