Whether Draft Animals are Disappearing from Rural India: Macro and Micro Level Analysis

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1. Introduction

- Interesting structural transformation is taking place in rural India in the last few decades, facilitate by wide spreads mechanization, largely tractor use.
- The share of agricultural workers and draft animals have come down from 64 percent in1971-72 to 14 percent in 2009-10 whereas that of mechanical power has gone up during the same period (Singh et al, 2011).
- Tractors use had, in most cases, displaced 2-3 pair of bullocks (Mishra 1990, Binswanger 1978).

2. Objectives

- To analyze trends of tractor and draft animals use in India.
- To assess changes on a wages and Mechanization pattern in India.

3. Methodology and Data

- Secondary data were collected from Livestock Census and farm Implement survey, Govt. of India (1972, 1987, 2003 and 2007).
- Primary data (2001-2014) was collected from three VDSA villages using Focus Group Discussion.

4. Result and Discussions

This study present national and village level changes on draft animal power and tractor use.

4.1 Animate and mechanical power at all-India level

After the green revolution the animate power use in agriculture has declined and the mechanical power use has raised (Fig. 1). In four decade, the animate power has decreased from 92% to 15% and mechanical power has increased from 8 to 84%.

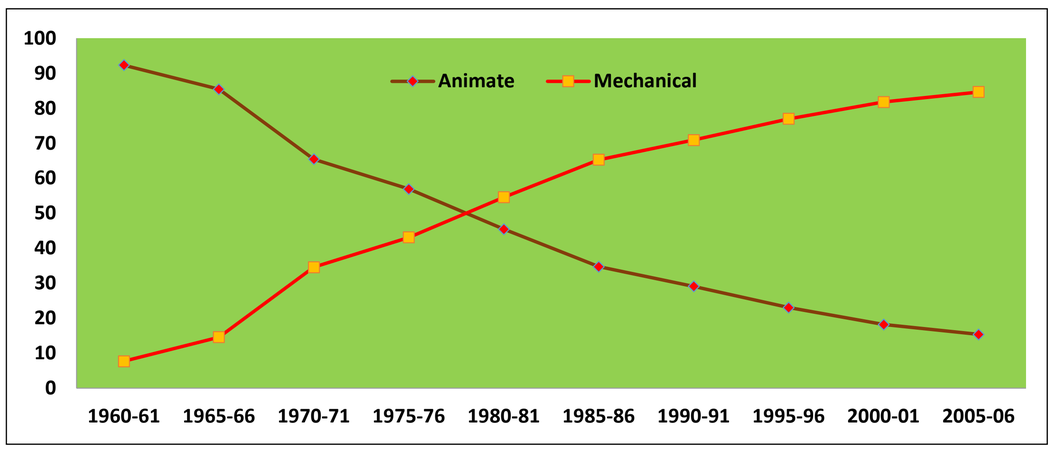

Fig. 1. Animate and Mechanical power scenario in India (Singh et al, 2010).

4.2 Trends of tractor use in India

First time tractor was imported in India in early 1950. Its production was began in 1961-62. The trends of tractor over a period of time give in Fig.2

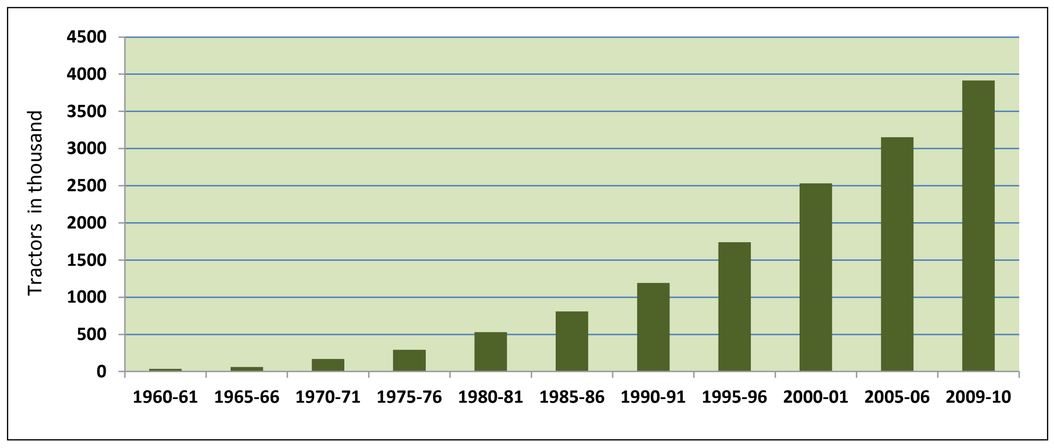

Fig. 2. Trends of tractor in India (Singh et al 2011).

4.3 Density of draft animal and tractors in India

A diverse pattern of mechanization has emerged (Fig. 3). Wheat-growing northern regions have a higher concentration of tractors than other regions (Singh 2010).

The Kerala and Punjab have less density of draft animals.

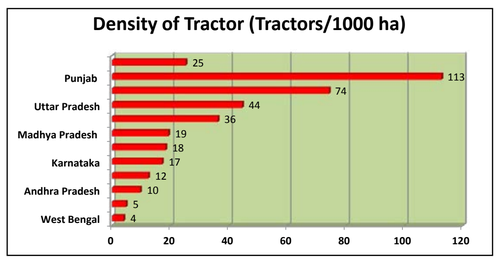

Fig.3. Density of tractors by state in 2007.

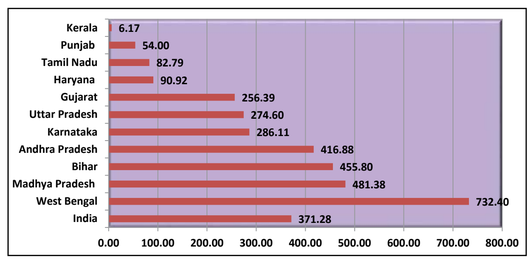

Fig.4. Density of draft animals by state in 2007.

4.4 Numbers of Draft animals and tractor in VDSA villages

Interestingly, numbers of draft animals have been sharply declining and tractors has been increasing at all India level. Village level findings are also support this.

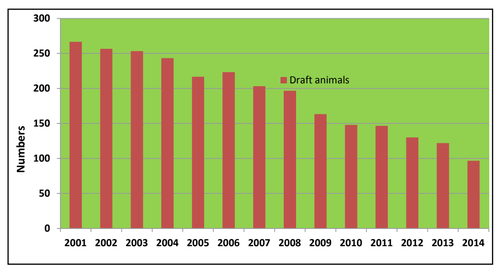

Fig. 5. Average numbers of draft animals in VDSA villages.

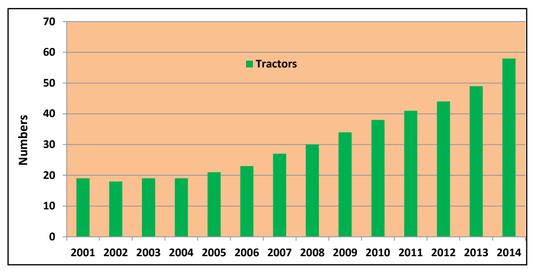

Fig. 6. Average numbers of tractors in VDSA villages.

4.5 Draft animals and tractor uses in VDSA villages

Within the short span of 15 years, draft animal uses in Kharif (Rainy) season has declined 75% (Fig. 7).

Increased rural wages has lead to reduction of draft animals (Fig. 8).

Difference between male and female wage rate has increased in the recent past.

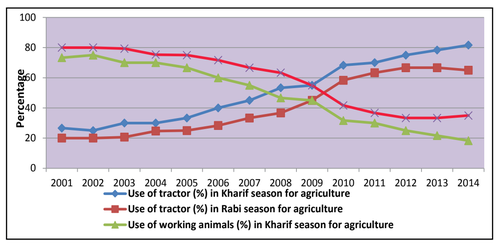

Fig.7. Percentage use of draft animals and tractor in Kharif and Rabi season in village.

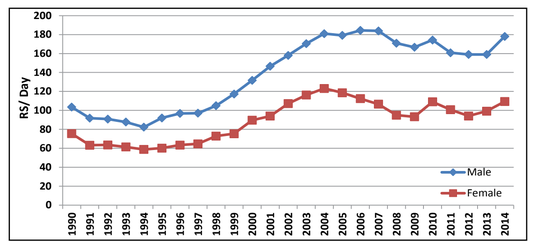

Fig. 8. Average of real agricultural wage rate of three villages (2009-10 constant ₹.).

5. Conclusion and Implications

- Draft animals are vanishing from many places in rural India. Tractors have taken place the role of draft animal for ploughing, largely in places with better access to rural roads and infrastructure.
- Draft animals are shifted to more interior place where business operation of tractor is not economically viable.
- Need to encourage custom hiring/ Entrepreneurship development for hiring services of tractor and other farm machinery in rural area.
- Need more R & D on development for a low cost, low HP tractor.
- Institutional credit for tractor uses need to be simplified.
- The liberalized diesel markets may enhance availability of diesel in rural India. Replacing tractor to penetrate interior rural India as well.
- Increased tractor use is also facilitating reverse tenancy in rural India.

References

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