

POSSIBILITIES OF TRACTOR PLOUGHING IN BELLARY AND ANANTAPUR DISTRICTS

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The figures furnished by the Board of Revenue reveal that there is a large area under cultivable wastes other than fallow in this Presidency. Such areas are considerable in districts of low rainfall, where nature is partly responsible for these lands being not brought under proper cultivation. The area under cultivable waste in Bellary district is estimated to be 299000 acres and in Anantapur 633000 acres. Such large areas exist also in other districts of the Presidency.

It is estimated that to make the Presidency self-sufficient in the matter of food and other crops the additional acreage required to produce the present deficit is as follows :—

| | | |
|-----------------|--------|--------|
| Rice..... | 560000 | acres, |
| Wheat..... | 37000 | " |
| Linseed..... | 4400 | " |
| Gingelly..... | 113500 | " |
| Pulses..... | 48000 | " |
| Betel nuts..... | 14000 | " |
| Sugarcane..... | 36000 | " |

The question whether the existing cultivable waste can be reclaimed and utilised for the growing of crops in which there is a deficit in the Presidency may be examined.

The scope of this little note is to suggest among other things whether the introduction of mechanical power would not create an entirely different situation by affording facilities for the conversion of a fair percentage of the total area under cultivable waste into arable fields.

The deficit in the acreage of dry crops like wheat, linseed, gingelly, and pulses in this Presidency is about 202900 acres and it is possible to make up this deficiency to some extent in the dry tracts themselves. In Bellary and Anantapur districts alone we have a total area of about 932000 acres of cultivable waste. It is true that a major portion of this cultivable waste lies not only in very barren portions of the districts but is so situated as not to permit of any cultivation. At any rate if on a modest estimate we are able to bring under cultivation at least 2 to 5 percent of the total area it should give us about 20000 to 50000 acres for the cultivation of dry crops in Bellary and Anantapur districts alone.

The Present Agricultural Condition of the Tract. Yet there is another aspect of the question. Statistics and figures often give a wrong impression of the actual situation. A study of the local agricultural conditions would show that even large areas under cultivation are left fallow from year to year owing to various causes

such as successive seasonal failures, low price of agricultural commodity and want of sufficient number of cattle to cope up with the large area. How then would it be possible to bring cultivable wastes under the plough?

Agricultural Practices of the Tract. In these two districts we have two distinct soil types—the red and the black overlying a substratum of kankar or nodular limestone. The soils are of varying depths ranging from 1 to 4 or 5 ft. of surface soil—generally 1'–2' not usually above 2' except where it is transported. The red soils (mungari area) are ploughed every year with country wooden ploughs whereas the usual operation on black soils is harrowing with the guntaka. Black soils are generally ploughed deep once in 5 or 6 years with heavy iron ploughs drawn by 4 to 6 pairs of animals. A ryot in these parts usually owns a pair of bullocks for an area of about 40 acres. A black soil ryot owning 40 acres of land and one pair of cattle has to give deep ploughing to an area of 8 acres every year to complete the operation for all the 40 acres in a period of 5 years. Five pairs of animals are able to finish half an acre of deep ploughing per day and 80 pairs of bullocks are therefore required to finish the deep ploughing operation every year for a block of 8 acres or alternatively a pair of cattle has continuous work for 80 days or about 3 months in summer to finish the ploughing operation alone. Besides this operation, preliminary cultivation for the other 30 acres has to continue, thrashing of cereal crops and transporting of cotton and other agricultural commodities to the market etc, have to be attended to. The above state of affairs indicates that with the existing condition and number of cattle, it is not possible to give the optimum tillage to the lands and cultivation is in consequence spasmodic.

The Solution of the Problem. What can be done then to set matters right? The simple question arises whether an increase in the number of cattle maintained would not solve the problem. Can the ryot not have a pair of animals for a holding of 20 acres instead of 40 acres as at present? The answer is, no; it has been found that fodder scarcity is the greatest difficulty owing to successive crop failures. It is held therefore, that so long as these tracts are not free from the frequent visitations of famine, the fodder problem is bound to limit the increase of the cattle population. The only other alternative to meet the situation of improving the cultivation seems to be to introduce mechanised ploughing.

Possibilities of Tractor Ploughing. In the year 1935 the Carnatic Agricultural transporting company of Hubli demonstrated the working of their tractors in Bellary for the first time. The successful demonstrations of these tractors attracted the attention of several land owners in Bellary taluk and about 600 acres of black cotton soil were ploughed that year. The rate charged were Rs. 15/—per acre

for 15" depth of ploughing and Rs. 8—10 per acre of 8 to 10" ploughing. Shallow seasonal ploughing (6—8") was also done at a cost of Rs. 4/—per acre. Deep ploughing was done in lands badly infested with Hariali (*Cynodon dactylon*) it was observed that the stand of the crop in the tractor ploughed lands and outturn thereof were distinctly better than in the previous years.

Deep ploughing is essentially done to eradicate Hariali and the work turned out by the tractor at a cost of Rs. 15 per acre was decidedly better than what it would be if Hariali was dug by human labour which usually costs Rs. 25 per acre. Thus there is a saving of Rs. 10 per acre in the cost of cultivation apart from the *Quid pro quo* of increased yield.

Tractor ploughing appears to be an ideal operation for Hariali ridden lands of which there is a considerable area in these districts; and the cost of this operation when compared with the cost of doing it with human labour (ordinary heavy iron ploughs are not able to work in a field over grown with Hariali) is about 40% cheaper with better results.

It has to be admitted, however, that the cost of tractor ploughing of Rs. 15 per acre is pretty high in spite of its comparative cheapness, but this rate is likely to be reduced when these operations are more regularised and made popular, and fairly large areas are ploughed every year. The demonstration of tractor ploughing has kindled the enthusiasm of some wealthy land owners of Bellary district. In 1936 more area was ploughed and attempts are now being made by a few to purchase one or two tractors for use in the district.

There is a great future for the introduction of tractor ploughing in these districts, of course, within certain limitations. Not only the cultivator feels that the lands which are now receiving insufficient tillage would be brought under better cultivation, but there is every likelihood of a large area at present lying waste being brought under cultivation.

Conditions Favourable for Tractor Ploughing. The tractor ploughing requires a fairly large area probably not less than 50 to 100 acre blocks lying fairly close, to enable easy transport of the machinery. The ploughing should commence early in the season, January to February and finish by the 15th of May to facilitate the weathering of soil and the destruction of Hariali and its roots in the hot weather.

How to Popularise the Introduction of Mechanised Ploughing. It may be argued that in these days of depression when the ryot is not able to carry on with his ordinary agricultural operations it may not be possible for him to meet the cost of tractor ploughing. It is reported that in the Bombay presidency ploughings are done with the aid of Thakkavi loans granted by the state. The company that executes the work receives payment at the rates fixed from the Government,

on behalf of the ryot. This amount is treated as a loan to the ryot in accordance with the terms of the Thakkavi loan act. This system has considerably helped the ryots in Dharwar district where tractor ploughing has been popularised to such an extent that large areas are ploughed every year. It is urged therefore, that wherever sufficient security is forth-coming and where the land owner is not already over burdened with debts the system may be adopted in the Madras Presidency as well. In my enquiries in the villages of Bellary I could gather that there is a large number of ryots willing to get their lands ploughed with the tractor if only Government loans could be secured. Doubts may also be entertained as to the advisability of large scale mechanised ploughing which in the initial stage involves the ryot in additional expenditure in a tract where, under existing conditions of nature, and precarious seasonal factors successful raising of crops is problematical. Will not this innovation deprive a part of the agricultural labourers of their employment and thus aggravate the distress of the agrarian population?

Such fears are unfounded because the labourer on being thrown out of employment from ploughing operations will be compensated by the large area under cultivation. Larger yields may also be expected as a result of better farming methods which necessarily would involve the employment of more labour for harvesting, thrashing, and preparation for the market etc.

GREEN FEED FOR POULTRY

By H. NARAHARI RAO

The necessity of green food for poultry, specially for the growing chicken need not too greatly be emphasized. Under normal conditions, they are natural foragers and when released in the mornings they prefer young succulent grass and other edible weeds to artificial feeds. This kind of foraging tends to keep the birds in a healthy and active condition and as such this should be encouraged as far as possible.

Men with considerable experience in poultry insist on a liberal supply of green feed to the birds, as this tends not only to the egg-production, but also to keep the flock in a healthy condition.

One reason why the birds under free range system grow much quicker and healthier than those under confinement, is that the former get the requisite quantity of green material as their food. In a poultry yard where the birds have been kept in wire netting enclosures for some days, it will be noticed that the ground becomes bare and after some time the pasture becomes totally extinct, the reason being that the birds nip all the tender shoots; so that there is no chance for the pasture to grow at all. Under the intensive and semi-intensive systems of poultry keeping, the birds do not get the required amount of green material, unless adequately supplemented.