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1. Costs in relation to size of Farms.
2. Methods and Objects of Rural Surveys.
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4. Abolition of Zamindari.

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THE INDIAN SOCIETY OF AGRICULTURAL ECONOMICS
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AIMS AND OBJECTS.

To promote the investigation, study and improvement of the economic and social conditions of agriculture and rural life through:—

(*a*) periodical conferences for the discussion of problems;

(*b*) the publication of papers, separately or collectively; or in a periodical which may be issued under the auspices of the Society;

(*c*) co-operation with other institutions having similar objects, such as the International Conference of Agricultural Economists and the Indian Economic Association; etc.

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(4) With the introduction of power, the strain imposed on the Livestock (work bullocks) for lifting water from deep wells is reduced and more of the ryot's attention is diverted on deep ploughing, intensive manuring, carting silt and adoption of permanent improvements on lands ; and

(5) There is a great future for pumping in Coimbatore District by electric drive. The reduction of agricultural tariff to be charged on a par with that charged for industries, *i.e.*, Half an anna per unit, would enhance the popularity for pumps in all holdings and hasten the spread of electric drive thus ruling out oil engines and gas engines ultimately relieving the work cattle from the great and enormous strain of lifting water from the deep wells of Coimbatore District.

It can be well said that Coimbatore District stands unique in the whole of India with regard to the progress of rural electrification and the utilisation of electric motors and pumps for lift irrigation. Of this Coimbatore and Udamalpet taluqs have developed without state aid, a system of intensive garden cultivation under pump irrigation to an extent which has no parallel elsewhere in India except perhaps in the United Provinces with their tube well system.

LABOUR COSTS IN LARGE FARMS

(*Coimbatore District Madras*)

BY

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There is a widespread feeling in the country against large-scale farming because it often involves land-grabbing by some capitalists, who are not interested in the development of agriculture, but who wish to find a safe investment for their idle funds and convert the erstwhile indebted peasant-proprietors into their tenants or labourers. There is another objection, even stronger at present, to the cultivation of land on a large-scale even by the owner himself on the score that it might lead to the introduction of labour-saving machinery and implements, throw out of work a number of labourers and thereby worsen the situation as regards rural unemployment—though by reducing cost of labour, as well as of other items of production, prices of produce might be brought down for consumers, including labourers.

We are still in the grip of an unprecedented inflation and short supplies (real or feigned). We are not sure how far consumers will benefit in the near future by the reduction of cost of production brought about in any manner. We are in this paper concerned with the study of how far the phenomenal development of large-scale farming under well irrigation (garden-land cultivation, as it is called) in the Coimbatore District is tending to reduce the cost of labour, throw out a large number as unwanted because of the reduction of labour-saving devices. We believe that the demand for labour has not gone down, nor the rate of wages lowered, as a result of the rise of large-scale farms in the district. Some labour-saving devices have been adopted, rather slowly, but the scope for the employment of labour has been definitely and permanently widened by the development of large-scale farming, which is not merely extensive but intensive in character.

The development of large-scale farming under well irrigation began with the advent of hydro-electric power from Pykara in 1933. Be it noted that electricity, instead of helping decentralisation as generally expected, has helped concentration of

land holding not only under well-irrigation, but to some extent under canal-irrigation where water has to be baled. In the past garden cultivation, for which Coimbatore was always famous, was confined to a few acres of land—5 to 10 at the most—and irrigated by a well or two with bullock-lifts (mhotes). A pair of bullocks could not tackle more than three or four acres, nor could a ryot unaided look after a larger area. New wells have been widened and very much deepened by boring sets and thousands of rupees (Rs. 10,000/- per well is very common) have been spent on them and some of the successful ones irrigate over 50 acres each ; while there are many which do 25 acres. Once the owner is sure of water being found he sets about acquiring small holdings round about—sometimes by questionable means and consolidating and enclosing them all in a compact block.

We have a growing number of such large-scale consolidated holdings (hundred to two hundred acres at a stretch) particularly in two taluks of the district, where the cotton spinning and weaving industry has taken root and is tending to expand. The development of large-scale farming would have been impossible without the money made in the cotton trade and industry in the last 10 years. The fabulous prices of Rs. 2,000 to 4,000 per acre for an already well-irrigated land, and Rs. 1.000 and more for promising dryland (where wells could be dug) are largely to be traced to the huge profits made in 1942-1945 by traders and millowners, who rush in to buy such land for want of any other profitable investment. But it must be noted that most of these commercial and industrial magnates belong to two communities reputed for their agricultural efficiency. They are anxious to cultivate these new farms themselves, deputing at least one member of the family to look after the enterprise, assisted by one or two paid maistris (Supervisors of labour). They are lavish in their expenditure on manures, fetching tank silt and improving the land in all ways.

Prior to the development of hydro-electric power some big owners had installed gas and oil engines for pumping water from wells. They are going out of use partly because of the difficulty of having to shift the bed of the engine with changes in the level of water in the well and more recently because of the difficulty and cost of getting crude oil and charcoal and spare parts. The charges for electricity on the other hand have remained the same—a flat rate of ·9 anna per unit for the first 500 units (K. W. H.) after which ·75 anna is charged. (The Mysore Government charges only ·5 anna per unit). Their installation of electric motor and the centrifugal pump provides the greatest saving in labour—manual labour and bullock power, both of which cost at present three times what they did before the war. No wonder the Coimbatore district with its development of garden cultivation account for more than 50% of the electric pumps installed in the province of Madras. It has been estimated that the proportion of the cost of manual labour to total costs of irrigation is 32% in the case of bullock mhote holdings, while it is 12% in the case of holdings with electric installation. Not only is there the saving of labour of the man who works the bullock-lift but there is saving in the labour for guiding water. One man can easily guide the much larger quantity of water discharged by a three inch pump at the rate of 200 gallons per minute, as against 35 gallons by bullock-lifts, from a well 25 to 30 feet deep. In a day of eight hours a bullock mhote can at best irrigate 25 cents only from such a well, while the electric motor (7 1/2 B.H.P.) with a three inch pipe can irrigate 1.35 acres.

The number of draught animals that a gardenland owner has to keep is reduced by at least 50% if electric pumping is resorted to. They are required only for ploughing, hoeing, threshing, etc., during the season, while on other days they are engaged in carting tank silt to the fields, fetching green leaves or other leaves or other manure, taking produce to the market, etc. Some of the big owners who have farms near hills or forests with extensive grazing grounds keep a pretty large number of old animals not fit for draught but yielding manure. They fend for themselves and require little

labour to attend to. The reduction in the number of draught animals that need to be kept on the farm has resulted in a smaller area under fodder cholam, and a larger area is now devoted to food and commercial crops on the farm. This means a greater demand for labour and a larger net income for the owner.

The fine breeds of Kangayam and Alambadi draught cattle, freed from the exhausting toil of lifting water easily tackle the improved iron ploughs, (mould board and ridge) which are beyond the capacity of ordinary animals. There is only one limitation. Some of these iron implements are not easy to work, and they are seldom worked, where the soil is heavy, stiff clay of the black cotton soil variety, especially in the rainy season when it sticks in clods to implements. On red loamy soils, and even on black soil if it is friable these improved implements are worked to great advantage resulting in saving of labour at a time when there is a serious dearth of labour, sometimes so serious that essential agricultural operations are ill attended to.

Tractors with mould board and disc ploughs are owned only by half-a-dozen of these farmers, and they are not in common use now. They were used for breaking up new land; and occasionally for cutting and ploughing in Cambodia cotton stalks, grown to a height of 5 or 6 ft. with thick stems, which could be dealt with only by a tractor with disc ploughs and harrows at a lower cost and quicker pace than could be ever done by human labour. Speed was often more important than cheapness, because of the need to sow summer cholam (Jowar) in time. It has been calculated that if a tractor could be kept working for 200 days in the year, it could plough up 4 acres of virgin land, or 6 to 8 acres of cultivated land, per day, at a cost of Rs. 10, while the work were to be entrusted to a labourer with a plough team it would take at least 10 days and cost at least Rs. 40. While even now tractors—if not owned, hired —are in demand for breaking up new land, there is a great deal of prejudice against its use on cultivated land as it tends to pack the soil, while thin loose soil is wanted for raising garden crops.

Several brands of soil-inverting iron ploughs are used in the cultivation of garden land, if it is not heavy clayey soil, unlike in the case of wetland growing paddy where the old wooden plough is still preferred. These iron ploughs ('Victory', 'Monsoon', 'Cooper', 'P.S.G.,' etc.) are all more efficient than the country plough. They plough deeper (by 3 to 6 inches) and cover a larger area at least 30 per cent more —which means a saving of labour, though better bullocks are required for them.

There are other improved implements in use which are of no less importance. The ridge plough, in the cultivation of sugarcane and cotton forms ridges 2 ft. apart at the rate of 2-1/2 acres per day. Five men would be required to rectify the ridges. If the entire ridging were to be done by men alone, 25 to 30 men would be required to ridge 2-1/2 acres, at more than thrice the cost. The bund-former used in the cultivation of cotton and cholam, with one pair of cattle and a man, can form bunds of 3 to 4 acres per day; 4 men are required to rectify the bunds. But if bunds were formed by men alone, 20 to 30 men would be required to do 3 to 4 acres ; and the cost would be thrice as great at least. The bullock driven seed-drill, with a guntaka behind to cover the seeds, does the work of sowing cotton or cholam in lines to an extent of 3 to 4 acres per day, while if dibbling cotton were done by human labour alone it would take 20 women. If cholam seeds were dropped behind the plough or broadcast it could be done by one or two men ; but weeding would cost much more. Sowing in lines by the drill permits the working of the bullock-hoe later on for weeding cotton or cholam fields—at the rate of about 2 acres per day by a man and team with 6 women to complete the weeding. If this were done entirely by women alone, 20 to 25 women would be required and the cost would be nearly twice as much.

Apart from tillage implements and machinery there are a few big landholders who have threshing and winnowing machines which thresh and winnow grains at less than half the cost and half the time required by hand labour, without waiting on conditions of weather. A larger number have chaff-cutters to cut cholam stalk into bits for feeding cattle. An 8 inch machine with 2 Horse Power can cut 8,000 lbs. of stalk per day of 8 hours into bits two inches long, while a man can do by hand only 800 lbs. per day into pieces 24 inches long—which leads to wastage of fodder by cattle. The sugarcane crusher with 7.5 H.P. electric motor can crush half a ton of cane per hour and it may be found in farms having ten acres of cane and more. It can crush in the season 4 or 5 tons per day (an acre in the district yields at east 40 tons of cane), while the bullock-driven three roller iron mill crushes only 2 tons per day of 12 to 14 hours if two pairs of good animals work in two shifts. The animals deteriorate very rapidly and require the attention of more human labour.

It is not so much the anxiety to save money by saving labour that impels the big farms to go in for these labour-saving devices. The greater urge is to save time and utilise moisture during the short season, when it is difficult to get an adequate supply of labour even at higher wages for the essential operations. This is particularly the case near the Industrial areas of Coimbatore and Udumalpet, where comparatively higher wages are paid by the textile industry (Rs. 30 - 40 per mensem for unskilled labour) and in the villages near the Western Ghats where malaria is endemic and is virulent after the monsoon. It is a job to get adequate labour even for power-driven labour saving farms. The local Cherumas and hill tribes who are more inured to malaria have been trained to ply the improved implements and machines and they do quite well. These labour-saving devices in the preparatory cultivation and processing stages affect the men more than women, in whose sphere—transplanting, weeding and harvesting—little labour-saving has been effected except by the introduction of the bullock-hoe, which has reduced the work of hand-weeding, if crops are sown in lines.

All these labour-saving devices, however, have not reduced the total demand for labour in the new big farms. On the other hand, the demand has increased for other reasons. One is the reclamation of comparatively useless stony land into garden-land, which is steadily going on and at great cost. Big stones are blasted and lifted by stone and earth workers ; small stones are picked and removed or carted away and tank silt is brought from tank beds in hundreds of cartloads and deposited on the land to a height of 6 to 9 inches. All this involves a tremendous lot of labour and capitals, and the cost is three or four times that of the purchase price of land. This is not, however, so common as the work of improving cultivated dry land into good garden-land—if not all at once, acre by acre, year after year. An irrigated garden crop requires, and receives, far more labour than an unirrigated crop and with irrigation goes the application of manures in a lavish measure. Crops like ragi, Cambodia cotton, tobacco, sugarcane, plantains, turmeric, chillies, onions and vegetables, are great consumers of labour compared with dryland crops (other millets, oil-seeds, or even the wetland crop of paddy). In fact in the Central Farm at the Agricultural College Coimbatore, the dryland area of 130 acres needs roughly but a fourth of the labour required by the crops in the gardenland area of 110 acres, most of which are irrigated by water pumped from wells. The requirements of labour are also spread out more evenly over the twelve months of the year, instead of being all demanded in particular months. Gardenland cultivation admits of a great diversity of cropping, which requires labour all through the year, unlike in the case of dryland and even wetland cultivation having long gaps of no employment at all and peak demand in a short period.

The resources of the new big gardenland owners being great, they engage in addition to a number of permanent farm servants, a large number of casual labourers even

in the off-season with a view to carry out repairs, reclamation and improvement of land, fetching green leaves for manure from neighbouring hills or forests on carts or as headloads to make compost. Some of these are members of the families of permanent farm servants who live in houses provided rent-free by the landlord on the farms. In times of peak demand, for preparatory cultivation and harvesting—migration of labour from outside is encouraged; temporary huts are provided and for single man food is cooked on the farm and supplied at cost price. In fact a few enterprising landlords go so far as to provide free transport everyday for labourers from villages a few miles away to the farm, in which they do not like to settle because of malaria. Mid-day meal is provided by some landlords to labourers on newly reclaimed areas and the usual presents are given on festive occasions to permanent farm servants and the more regular casual labourers. In one case bonus equal to three months' wages has been given.

It is not suggested that labour is being pampered by the new landlords. In fact wages are not higher than market rates; on some they are even lower. But what the workers prize most is the opportunity for continuous work. Small land holders do indeed suffer; they are not able to get the needed labour on critical occasions and to that extent they are obliged to carry on their cultivation less efficiently. Small employers are not popular for another reason. Even if they pay slightly higher wages, they are hard task masters; the eye of the master is everywhere. There can be no work-shirking as under paid masters in big farms.

Whether labour is on the whole better or worse treated by the bigger landlords than by the small holders needs closer investigation. The former being associated with industries have a better knowledge of problems of labour and greater tact in dealing with them and appeasing them. The occasional tyranny of the big boss is better tolerated by the worker than the perpetual nagging of the small master. Farm labourers will have also a better chance of organising themselves in trade unions, if not at once in course of time, if they serve in large numbers under a big landlord, rather than a few each on small farms dispersed all over the country side. Any legislative protection for agricultural labour in respect of wages, hours and conditions of work has a far better chance of enforcement on big farms rather than on small.

An evil associated with the recruitment of labour in factory industries and mines in our country—as has been brought out by the Rege Committee reports recently—is that a large number of agricultural workers enter factories or mines for a time when they have little or no work on land but rush to their village at times of harvest, preparatory cultivation, etc., much to the annoyance of managers of industries. May not a more even flow of labour from land to industry and *vice versa* be brought about, without detriment to either, if managers of industry were also interested in agricultural enterprise? In fact some trade union leaders in Coimbatore allege that there has been a shifting of labour from the factory to land without the consent of the labourer and to the detriment of his earnings. This has been flatly denied by the landlord-cum-industrialists who do not think much of the ability of factory hands to do the work of an agricultural labourer, or *vice versa*. Are the two really so incompatible?

If there are economies in large-scale farming by the introduction of labour saving devices, and reduction in labour cost per unit of product, without hitting the labourer hard because of the greater intensity of gardenland cultivation, but there are some social evils of concentration of land ownership in a few hands, which is against State policy, cannot these large-sized farms be worked as co-operative farms? The history of co-operative farming, tried in many parts of the World, does not encourage us to think that it is likely to succeed better in this country of disharmonies. These big private farms have been built up with a great deal of pluck and dash and individual

initiative and energy which can rarely de expected of functionaries or members of co-operative societies. It is not yet time to check the rising tide of enthusiasm in favour of large-scale farming.

It is not easy to expect the petty peasant proprietors in India to do what man of business ability and ample resources have been able to accomplish in the short space of ten or twelve years—of the conversion of a vast area of dryland into gardenland, creating a greater demand for labour on the one hand and reducing the real labour cost in production on the other. But these new landlords would do well to ponder over possibilities of a public attack on themselves on sentimental as well as practical considerations and introduce some scheme of profit-sharing with workers, in the interests of themselves as well as the workers. An essential preliminary to this would be the writing up of farm accounts on a systematic basis in all the large farms at least, so that there may be no room for suspicion in the minds of workers as regards real profits.

AGRICULTURAL CAPITAL IN FARM COST STUDIES

BY

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In opening the discussion on the subject of costs in relation to size of farms at the last Conference, I had struck a somewhat pessimistic note regarding its place in Farm Management Research at the present moment and had pointed out some difficulties in connection with such investigations. I had concluded that considering the stage of development of such studies in the country, such investigations as costs in relation to size of farms can at best only help to standardize the technique of research and bring out the drawbacks which have to be overcome when work is carried on in different regions under different agricultural and other conditions.

A general review of such studies as have been made in this country regarding the cost of production of crops or the financial results of farming under different systems, shows that the idea of farmer's capital is not free from ambiguity and consequently there is a diversity in classifying and analysing the items which consitute agricultural capital. Of course it is not possible to apply the business man's notion of capital in farming except when the agricultural organization is on all fours with the industrial organization of a factory or a commercial concern, as the concept of agricultural profits is not captable of clear definition as is the case with business profits. From point of view of business, profits measure the difference between the sale price of an article and its cost price and the cost price is the sum total of the expenses incurred in connection with land, labour and capital. Business capital can easily be converted into money and as it is either borrowed or treated as fluid, its cost in the form of interest at market rates can be allowed for. As net profits cannot so easily be worked out in the case of an ordinary farmer growing crops with the labour of himself and his family on his own land, some other measures have had to be devised to find out whether he has been getting on or down as compared with others in the locality and we have such measures as labour income, farm income, farm business income, family labour income, etc. In working out these various standards of income the items which comprise the farmer's capital are treated not as one single item of cost but in various ways and