

Production Efficiency in Agriculture

By

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It will come as a strange surprise to many of us to hear that efficiency of production in agriculture of the United States of America is anything but satisfactory. This is sought to be proved in an article entitled 'How efficient is American agriculture' by Theodore W. Schultz in the *Journal of Farm Economics*, August 1947. This article would naturally provoke in us the desire to examine the efficiency of production in our agriculture, but with what standards we have yet to decide. Efficiency of production in agriculture is difficult to Judge, unlike in well established industries. In the latter, practically all the factors are controlled and the in-put and out-put in production are easily worked out in cash value and efficiency is determined in a simple manner. But in agriculture, besides the known factors of capital and labour, there are unknown and uncontrolled factors of the soil and climate. Hence comparisons between crop and crop or between tract and tract in the strict sense will have no value. Only broad comparisons can be made to give us an idea of the efficiency of the controlled factors as implements, machines or human labour.

In the above article we have been given an opportunity to see how efficiency in agriculture has been judged in the U. S. A. The following table shows one method of judging efficiency of production according to the human factor for the year 1939.

Region.	Value of product per man equivalent in dollars.	Relative to Pacific.
Pacific	1558	100
Mountain	1423	91
W. N. Central	1286	83
New England	1244	80
E. N. Central	1197	77
Middle Atlantic	1129	72
W. S. Central	700	45
South Atlantic	608	39
E. S. Central	486	31

The west (Pacific) is said to be most efficient in production and hence the comparison. If the efficiency in the West may be taken to be good or very satisfactory, it is argued why it should be so low in other arts and this is termed 'mass inefficiency.'

Another table published in the same journal is also interesting. It is as given below :—

Size of Farm.	Total agri. output percent.	Value of product per farm Dollars.	Farms Total.		Labour force Percent.	Value of Product per man equivalent in dollars, in 1939.
			No. in Millions.	Percent.		
Small farms	32.5	Upto 1499	4.6	77	65.6	62 to 837
Large farms	67.5	1500 and over	1.4	23	34.4	1087 to 2850

From the above table it may be inferred that as it is in India the small farms of the U. S. A. are also not economically sound compared to the larger ones which really constitute two third of the total agricultural output of the country, though they are only one-third in number. Hence it is concluded that “farm people in the large group for the most part work hard and long, but their output has relatively little value; they are under-employed; their human resources are poorly utilised.” We are constrained to remark that U. S. A., is no better than India in this respect.

Again a comparison is made between the value of output per man in agriculture to that in manufacturing industry. The difference is found to be great, as much as 2 to 4 times of production in industry compared to the best production in agriculture. In India this difference is bound to be more. It is also interesting to study the comparison made between different countries of the world in the matter of man output in agriculture. The comparison is made with what is called *Colin Clark's* international unit for the year 1940. The following table gives the figures.

Country.	Productivity per male producer in terms of Colin Clark's International unit.
New Zealand	2444
Australia	1524
Argentina	1233
Pacific (U. S. A.)	1102
U. S. A.	661
Denmark	642
Canada	618
Holland	579
Germany	490
Great Britain	475
France	415
Belgium	394

Figures have not been given for other countries or for India

Turning to our country we are accustomed to compare production largely in terms of yield per acre. We have not come to the stage on economic studies in our country to compare overall efficiency of man, the most important factor in production, as has been done in the U. S. A. Such a comparison shows how human energies have been utilised in different degrees, how in most cases they have been wasted and how it is necessary, in national interest, to conserve it to the utmost by improving the methods of production. For this purpose we should judge the efficiency of production by taking into account the production per unit of human labour in-put. The average number of units of human labour employed in the production of a crop and the quantity or value per unit can be worked out. Such figures worked out for the same crop as paddy or cholam, grown in different tracts of the country when compared will clearly bring out the different degrees of efficiency of the human labour in the different areas. It will be certainly revealing and we can draw our own conclusions in the matter of efficient or inefficient utilisation of the valuable human labour. In the same manner, other crops, particularly the commercial crops, can also be compared. The great idea is to judge whether human energies in production have been utilised to same extent, or rather to produce the same value in every kind of production. If in the pacific region the value per man is 1558 dollars, it is not known why it should be only 486 dollars in the E. S. Central area? There is therefore great waste of human energies in other tracts resulting in mass inefficiency.

It is worthwhile working out production value figures per human labour unit with reference to some of the important crops of our Province and draw relevant inferences in regard to the efficiency in production. The following table may be considered to be self-explanatory, and as a preliminary step in the understanding of the problem.

Crop.	Total man labour in-put per acre	Total Value of production per acre Rs.	Value of production per man labour Rs'	Period of Production months
Paddy (Guntur)	32	240	7.5	5
Tobacco virginia (Guntur)	58	764	13.2	6
Paddy (Coimbatore)	50	330	6.6	5
Cambodia cotton „	54	360	6.7	7
Cholam irrigated „	52	260	5.0	3½
Sugarcane „	150	1900	12.7	12
Cholam dry (Guntur)	26	120	4.7	4½

Note:— Woman labour employed has been converted into man labour in the ratio of 2 : 1.

The comparison made in the above table is simple and straight and excludes from consideration many other inherent factors which affect production. In the American comparison, evidently, the production over one year per man equivalent in distinct tracts has been taken into consideration. This equivalent is probably arrived at as so many labour days on all the farms situated in a homogeneous locality and the total production on all the farms for the year divided by the number of man labour days will give the production per man equivalent. Applying the same procedure for our country we have to divide our province into so many homogeneous tracts, where production is more or less similar, and work out the number of man labour days in such farms for a given period or a year. Two women may be taken to be equivalent to a man. This requires detailed economic study of the holdings in every representative tract as has been done in America.

A comparison made on these lines, i. e., on the American model, gives a very good idea of the extent to which the human resources are utilised in each tract. The aim is naturally to conserve human energies and utilise it to the maximum production value during a given period. It implies the utilisation of labour to the maximum efficiency possible and eliminate the slack period which is so common in the agricultural industry of our country. In tracts where the off-season periods, are longer such as in the dry areas the value of production per man equivalent is bound to be low, unless alternative industries are introduced to produce other goods of utility.

A detailed and comprehensive economic survey of hundreds of holdings in each homogeneous tract is a prerequisite for any study, in this or other directions and we are in this respect far behind the U. S. A. and other western countries.

In conclusion it should be pointed out that judging efficiency of production particularly in agriculture is no easy matter and sometimes may lead to controversy in the matter of standards to be set up, among economists interested in the subject. This article has been written as a preliminary discussion of the subject with a view to stimulate interest among students of agriculture and invite criticism from those who take interest in the economic and social improvement of agricultural labour in our province.