

'THE ECONOMICS OF PADDY GROWING IN TANJORE'

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The work of improvement of any particular crop consists of four distinct stages, (1) cultural improvement, i.e. better cultivation of the land, better manuring, use of proper seed rate; etc., (2) growing of particular varieties most suitable to the locality, (3) improvement in such varieties by isolation of superior strains, and (4) producing better varieties by hybridization. The first two lines of work are being tackled by the department for over two decades now and the results are quite familiar to you all. Lines 3 and 4 are definitely more the work of a Crop Botanist and work on these for this province was commenced just 16 years ago. This station is the outcome of the Crop Botanist's work and has been in existence for the last nine years. While some of you here would realise that something has been done by this section of the department to benefit this district, I am sure there are others who feel that more has not been done. That the public is impatient and expects results more rapidly is a healthy sign. As one however who has had a very intimate knowledge of crop improvement work in some of the most advanced agricultural countries of Europe, I do not at all feel diffident of the results achieved so far. It must be mentioned, at the same time, that most of the improvements in these European countries were being done in the earlier years by enterprising farmers themselves. Every other farmer there was a Sabapathi Mudaliar of Bellary, and a Raghunatha Rao of Tanjore. In Sweden, there is a private association which is running a Plant Breeding Institute quite as big as the Agricultural College at Coimbatore, with a set of highly paid technical staff all of whom have earned world wide reputation by their scientific achievements. In Denmark, all the work which the Government Crop Specialists of this country are engaged in, is being done by private seedsmen in their private farms and specially equipped field laboratories. In all these countries, there has been a general all round improvement and the standard brought up to such a high pitch that an increase of even 2 to 3 per cent over their present output would be considered a very big advance. In India, the general standard is still low and so far as the Crop Specialist's work goes, there is immense scope for improving the present output by about 10 per cent by mere isolation of superior strains from the existing varieties of crops. In fact this is what is being done in Madras and all the paddy strains that have so far been issued are merely isolated strains. To breed new varieties by hybridization requires a complete knowledge of the plant and its make-up and the way in which the different characters of the plant are carried forward from parent to progeny. A good deal of knowledge has been gained in this line regarding the rice plant during the last fifteen years in Madras. It is only a question of time before we will be able to place at the disposal of the farmers superior varieties as a result of hybridization work.

¹ Extracts from address to the Mirasdars' Conference, Aduturai, January 1931.

Let us now consider the general position regarding the growing of paddy. Every country is racing as it were to increase its output of food grains. This should result in over-production and a consequent fall in prices. When we compare the average acre yields of some of the important rice growing countries of the world we are terribly backward. Spain, Italy and Japan beat us hollow. Though our yields are low, our cost of production per unit of paddy is definitely less than elsewhere due chiefly to our comparatively lower cost of labour. I am sure some of the mirasdars are getting alarmed even now at the present rise in the wages of the labourer of this district. His standard of living is still considerably low although it is gradually but surely rising. In all the rice growing countries the tendency is to extend the area and to try to improve the yield per acre. Even in this Presidency there are several factors tending towards over-production. Besides the activities of the department which tend to increase the acre yields, there are the contemplated big irrigation schemes which have been designed to bring large areas under paddy cultivation. Assuming that about 50 per cent of the population of this province are rice eaters, our production would just meet the requirements of the province. Still there is a big consignment of rice which is imported into the province every year from Burma, and recently from Indo-China too. I am not sure whether this would balance the probable export of rice from this province to the neighbouring provinces and to a small extent outside India as well, for example, to Ceylon. The present abnormally low prices of paddy cannot be said to be due entirely to over-production. It might be one of the contributory causes. This abnormal condition probably has affected some of the industrial crops like cotton and groundnut much more than in the case of paddy.

In the race for the increase of rice production, countries which have better natural facilities should score over those which have not got them. Even in India, Madras, though it has a greater acre-yield than other provinces, has the least chance to compete successfully in getting a market for its produce as compared to provinces like Burma, Bengal, Assam, etc. In Madras, 70 per cent of the paddy grown is irrigated, that is, has to meet a charge for water, either in the form of water rate or as cost of lifting. In Bengal and Burma, the crop is entirely rain-fed. With our irrigation system we shall be able to grow money crops like cotton and sugarcane and these provinces can never hope to compete with us. Competition to capture the rice market, particularly affects districts like Tanjore most. Every year this district has got to find a market for nearly 4,200,000 *kalamis* of paddy, taking the rest of its produce as being consumed in the district. To add to the trouble an increase of another 300,000 acres is contemplated under the new Mettur Project in this district. The prospects of the mirasdars are really very gloomy.

What then is the remedy? History tells us that a country like England was faced with a similar difficulty three decades ago. The farmers easily solved it by changing the methods of cropping. Most of the lands that had been utilized for growing food grains were deliberately put down to pasture and cattle rearing. So far as we are concerned here, our attempts should be directed towards reducing the cost of production of paddy in the existing areas, and trying to devote areas to crops other than paddy, wherever it is possible to do so. Although paddy will continue to be the most important crop of this district, I am sure there are areas where other

garden crops could be grown successfully and profitably. In the double crop areas of this district the combined yields of the two paddy crops are not commensurate with the trouble and labour involved. Would it not be a better proposition for owners of these double crop areas to confine themselves to a single crop of paddy and grow something else instead of the second crop? I am sure crops like groundnut, maize, chillies, etc. could be grown successfully. As an experimental measure groundnut was tried at this station last year on a very small scale and the results were very encouraging. I hope to be able to give definite results when next we assemble here a year or two later. As regards other garden crops that can be successfully grown in rotation with paddy, we might think of sugarcane, plantains, turmeric, betelvine, etc. There is certainly a great scope to increase the area under sugarcane. Several crores of rupees are every year going out of the country in the shape of the price we pay for the imported foreign sugar. Regarding plantain growing, it is nothing new to this district. Aduturai is an important centre from which big consignments of plantains go out to other parts of the province. For better nutrition and better health of the people it is recommended that they should take to eating more fruits than we are now doing. Plantain is one of the cheapest fruits we can produce and there is scope for further increase. If every member of the population would take to eating one plantain fruit per day, the area under this crop could be increased in this province alone by some thousands of acres. Unlike sugarcane there is the difficulty about the transport and marketing of plantains because of its perishable quality. In Tanjore we get plantains quite as cheap as 8 to 10 fruits for an anna, and the same sells at 4 to 6 pies per fruit in North India. ^{tries} We can increase the production of plantains sufficiently it should not be impossible to find a market for them in North India, transporting them, if necessary, in specially built railway waggons.

With regard to the growing of these long duration crops there is the question of water facilities. If there is a channel supply for five or six months in the year, the rest of the period can be easily managed by well irrigation. Construction of small wells is not an expensive affair in this district where the water table is very high and there is no rocky substratum. The departmental work at the Samalkota and Maruteru Agricultural Research Stations has shown, that even paddy can be grown successfully with much less water than what we are used to cultivate it with. The introduction of garden crops in rotation with paddy, will indirectly reduce the amount of water that is used for the paddy crop, because of the drainage difficulties it would create. It has been demonstrated in Samalkota that plantains can be successfully grown as an annual crop in rotation with paddy, the profits brought in by an acre of this crop ranging from Rs. 500 to 800 a year. Work at the Anakapalle station with sugarcane, is indicating that it could be successfully grown with only one or two irrigations. Recently, the Government Sugarcane Expert working in Coimbatore, has succeeded in crossing sugarcane with cholam and there is the possibility of our getting in the immediate future, a cane crop that will mature within as short a period as 5 months.

Besides plantain and sugarcane there are any number of pulse and fodder crops which can be successfully grown either before or after the paddy crop. This practice actually exists in the Godavari delta. Leguminous crops like sunnhemp, *theegapasalu*, and *pillipesara* are used both

as green manures and as fodder for the cattle. Comparing the Godavari and the Cauvery deltas, by far better cattle are kept in the former tract and they are better looked after. The cattle of this district are really miserable creatures. There is plenty of scope for improving the milk supply of this district. Probably nowhere else is so much of artificial foods and tinned milks consumed as in this district. In spite of the high prices that are paid for these artificial foods, they cannot compare with natural milk from the nutritive point of view. In Italy rice fields are periodically laid down to pasture and good cows are maintained.

There is also immense scope for increasing the fruit production of the district. In the Godavari district where conditions are not very different, orange cultivation has developed enormously of late years. These are some of the points which should set the mirasdars of this district thinking, and I am sure there are enough enterprising members who would be prepared to give a right lead in this direction. It is not expected that changes are likely to come very rapidly, but the present unfavourable position of paddy growing should act as a stimulus. It need not be pointed out that the growing of garden crops in rotation with paddy will indirectly provide labour for the cultivators for a greater part of the year and will gradually increase the standard of living.

Coming now to the production of rice itself in this district where a good portion of it must find a market elsewhere, the marketing conditions are still primitive. Finite statistics regarding the movement of paddy within the province are lacking, and enquiries will have to be made soon, to gather sufficient information bearing on this point. Although the same sort of varieties are grown in Tanjore as in Kistna district, it is found that Tanjore rice never gets to the Madras market. The Andhra ryot scores over the Tanjore ryot by the availability of cheap water transport facilities. There are also certain practices like harvesting and leaving the crop in the field for a day or two, stacking them and doing the threshing some months later—practices common in Kishna, Godavari—which do not obtain in Tanjore. These practices probably help to improve the quality of rice. Harvesting the crop when dead ripe and threshing it immediately is not entirely due to the labour difficulty. It is probably more due to the landlords not having sufficient trust in the tenants. The present Tanjore practice makes the grain unfit for raw milling. All the large rice mills of this district where enormous sums of money have been sunk are remaining idle at present because of the loss in export trade of parboiled rice. Ways and means should be found to improve the quality of the produce and adapt the machinery of the large mills to husk raw rice. Tanjore being chiefly an exporter of rice should do well to study the requirements of the markets and adjust her practices.

Coming now to the new Mettur Project area, portions of it have red loamy soil eminently suitable for growing garden crops. Although by the original scheme it was designed to devote the whole area to rice growing, it will be unwise to do so under the present conditions of rice production. It should be possible to grow successfully crops like sugarcane, turmeric, plantains, and cotton. The difficulty of drainage which we are faced with in the delta will not arise. The quantity of water used for these crops would be much less than would be required for paddy with

the result that a larger area higher up from the canal can be devoted to growing garden crops with small pumping sets fitted up at different places. I see that some of the people of this new area are not for converting their lands into wetlands and devoting them to rice growing. It is an encouraging sign but the argument put forward by them is chiefly due to the assessment of Rs. 15 per acre. Huge sums have been sunk in the scheme and Government must expect a fair revenue return and it cannot be expected that the rates will be lowered. If we compare the proposed water rates with what the ryot has to spend in making his own arrangements for obtaining it by digging a well and lifting the same by bullock power, Rs. 15 cannot be considered as excessive.

The distribution of water as at present fixed up for this new area is from September to May. If seedlings could be raised sufficiently early, transplanting can commence immediately after the receipt of water in the channels in September. It need not be pointed out that the earlier the planting, the better is the crop. Our results at the Maruteru Agricultural Research Station go to show that early planting more than compensates for the improvements sought after, by better manuring and the growing of superior strains. If seedlings cannot be raised early enough the planting is not likely to come off before the middle of October. This will roughly correspond to the present *thaladi* cropping of the delta which is not quite satisfactory. The young crop cannot make use of the heavy rains received during the north-east monsoon. Even the second crop ^{it may} to be grown between February to May cannot be a very ^{productive} ^{one}. ^{There is thus an indirect inducement to the people to use the water in the new scheme for something other than paddy wherever it is possible to do so. I hope the mirasdars of this tract will consider the matter seriously. Probably the people have not got sufficient experience in growing garden crops like sugarcane and plantains, but the Agricultural Department should be able to give all the necessary help and guidance in the matter.}

Although this station was originally designed to be essentially a paddy breeding farm we are so modifying our programme that in addition to paddy work we can demonstrate to the people of the delta that garden crops could be successfully grown in rotation with paddy. I am hoping that in the next year or two when we assemble again in this conference, you will have some tangible results demonstrated to you.