

PROBLEMS AND PROSPECTS OF RICE MILL MODERNIZATION OF SRIVAIKUNDAM TALUK

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ABSTRACT

Agriculture is the oldest and most important occupation of the world. The human society is dependent upon agriculture for its food, clothing and shelter. At certain stages of human development it used to be the only known means of living. Agriculture is the corner stone of development. Indian agriculture is known for its multi-functions of providing employment, lively hood, food, nutritional and ecological securities. In the case of Capital Intensive Processing Industries the capital involved will be larger. Hence, the persons employed will require some technical knowledge. The present study is proposed to chart out the role played by rice mills in Tamilnadu. The study also analyses different aspects such as declining of economic activity due to paddy field conversion, change in cropping pattern that resulted in declining of area as well as production of rice. In Tamilnadu, the production of rice is deteriorating every year. This creates a widening of supply gap in food grains. The decline of rice production created is a irreversible threat on Tamilnadu's food security. The increase in output of paddy facilitated the progressive growth in the establishment of rice mills in srivaikundam taluk.

Keyword: rice milling Industries, paddy, financial assistance

INTRODUCTION

India is the second biggest rice producing country in the world after China. It contributes about 20 percent of the world output of rice. Paddy being the major cereal crop of India covers an area of more than 45.34 thousand hectares, the largest under any single crop (FAO, 2009-2010). It has been stated by the Department of Agriculture Government of India that in 1999-2000 production of paddy was of the order of 176.98 Million tones which was increased to 189.09 Million tonnes in 2016-2017 and is expected to increase to 210 million tonnes by year 2021.

It was grown in almost all the provinces of the country but more than 86 percent of the total production accounts for the State of Andhra Pradesh, West Bengal, Tamil Nadu, Uttar Pradesh, Bihar, Orissa, Madhya Pradesh, Punjab and Assam. Rice production, processing and marketing constitute the biggest industry in the country. India rice milling industry is the oldest and largest agro-based industry. The annual production of paddy was estimated at over 521 million tonnes, mostly in developing countries and the amount is raising an average rate of 3 percent per annum. It was, however, the serious food crisis in the early sixties which highlighted the need for a proper policy towards the industry. This led to joint study of the industry by the government of India and the Ford Foundation of India. The study pointed out that the overall supply of rice could be augmented substantially with additional yield obtained through modernization of the existing rice processing techniques. A number of studies were also undertaken and came out with the findings. As a result, the policy of modernization of rice mills in India has since then been pursued by the Government of India and various States within it. Thus, the industry has become fairly modernized and more important in the economy of the country it is still believed that this has not been successfully implemented in most parts of the country.

Thus with higher priority being given to paddy production programmes and the changing pattern of demand for rice, the milling industry has to adopt itself to the developing nation.

Rice milling in India is carried out in small and medium size rice mills, Most of the small size mills are huller mills. Other various types are Battery of Huller mills, Huller-cum-Sheller mills, Sheller mills and modern mills. The number of rice mills of different types existing in Srivaikundam Taluk are as follows.

<i>Type of Rice Mills</i>	<i>Number of Rice Mills</i>
Huller Mills	03
Sheller Mills	02
Huller –cum-Sheller Mills	04
Modern Mills	10

Huller mills have the advantage of being cheap simple to operate but are very inefficient in converting paddy into rice. The rice recovery in huller type will be 60-68 percent with 10-25 percent broken whereas 68-72 percent recovery 5-7 percent broken in modern type. It is a noticeable fact that the quality of by-products. Normally the huller mills yield bran having lowest oil content appreciable amount of husk and broken rice. But the oil content in bran from Sheller and modern mills are far better in this respect.

LEGSLATIVE MEASURES

The Rice Milling Industry (Regulation and Licensing) Act now in force provides that:

- (a) The new rice mills to be set up will undertake dehiscing of paddy separately by rubber roll Sheller or centrifugal dehusker and shall have paddy separators and clearness in addition to the polisher;
- (b) All the existing mills excepting single hullers shall be modernized; and
- (c) Promotional efforts in the form of technical assistance, concessional finance, subsidy for modernization, extension programmes, training, research and development etc.

MAJOR PROBLEMS FACED BY THE INDUSTRY

The Major problems faced by the industry are heterogeneity in the composition of rice milling industry. Large variations are found in type ,capacity ,location ,services rendered as well as in ownership of different processing units. Consequently in rice milling industry arise mainly from the widely varying economic activities made available to private rice millers in different areas and sectors of the country. Another common features of rice milling industry is considered that its technical potential capacity is not fully utilized and this is because of seasonal concentration and spatial spread of paddy production coupled with the existence of a number of diverse processing units competing with one another in supplying facilities. As these small mills generally do not purchase and store paddy on their own, their operations tend to be restricted to the paddy marketing season, and their installed capacity remained unutilized/ underutilized during the rest of the period of year.

It is estimated about 10 percent of paddy/rice is damaged and/or lost in storage and transport with the present methods and machinery Sixty to eighty percent hand yield is obtained with 10-25 broken and admixture recessing, of bran and husk whereas with modern techniques, 62-72 percent head rice with 5-7 present broken and better utilizable by-products. The estimated loss in terms of money due to ill rice recovery and excess broken etc, with present methods would run into crore of rupees Since paddy is the staple practically all paddy growers and also it is seasonal with one harvest per year, there should be some facility in storage which can be protected from various hazards like damage caused due to spontaneous heating, damage by birds, rodents and insects.

PROBLEMS IN PARBOILING AND DRYING

Parboiling of paddy, a process of partial boiling or cooking prior to milling which imparts an extra strength to the rice kernel so that it could withstand the milling stress and result in higher head yield. This significant increase in the hardness of the kernel results due to

gelatinization of the starch during parboiling and the disrupted protein which expanded and occupied all the air spaces in the endosperm.

Research on food value of rice has shown that parboiled rice has more nutritive value than the raw because of the migration of vitamins from outer layer of the rice kernel into the inner starchy endosperm due to moisture heat treatment. Moreover, due to better milling quality, the losses of broken and fines into the bran are reduced considerably in the milling process of parboiled rice, and hence, total rice outturn of 72-73 percent (2-8 percent more than raw rice) and whole rice outturn of 60-65 percent (20-30 percent more than raw rice) are obtained. This is perhaps the easiest and cheapest method of attaining the self-sufficiency in meeting the growth demand for rice.

Loss of rice due to inefficient drying method is also not insignificant. Sun drying is the most popular and traditional method of drying. This method is completely dependent upon weather and it needs specially constructed large floor area that restricts the capacity of a mill to a certain extent. Excessive losses will occur due to scattering, birds, rodents, etc., This can be improved by drying paddy in a mechanical dryer using husk as burning fuel.

PROBLEMS IN BY- PRODUCTS

Bran obtained in milling is a part of the rice kernel and as such is quite rich in fat. Polished rice contains 0.3 percent fat whereas brown rice contains about 2.2 percent of on a moisture free basis. Rice bran contains 20 percent extractible but the bran produced in a commercial mill usually contains 13-18 percent extractible.

Rice husk is the largest by-product of rice milling industry which amounts to 22-24 percent of the total paddy. Which would be enough to reduce the moisture content of one tone of paddy from 20 to 14 percent. It can be used as fuel in domestic stoves and as a soil conditioner or a diluent component in commercial mixed fertilizers. It can also be used as an abrasive material because of its high silica content. Husk ash is used in glass industry for polishing. Rice husk can be directly used as a loose insulating material in building and cold storage facilities. Success has been achieved in the use of husk ash for manufacturing cement. Pure silicon which is used for making semiconductors is a very costly material that can be obtained from rice husk. Boards and briquettes can also be produced from rice husk.

Therefore there is an urgent need of modernizing the methods and machinery by new innovations and popularizing the new innovations and the new techniques of paddy processing such as parboiling, drying, milling, handling, storage, transport and by-product utilization to reduce the substantial losses. In order to substantiate the argument a case study was undertaken in the Tuticorin district of Srivaikundam Taluk. On the basis of survey data

collected the past population of rice mills in the Taluk. On the basis of survey data collected the past population of rice mills in the Taulk was found 18 were in position to function. The number of solvent extraction units was three whose capacities ranged from 4 to 6 tonnes of bran oil per day. The amount of paddy kept for seeds was 10 percent, 11.1 percent was milled by modern mills, 2.9 percent by huller mills and the rest 76 percent of paddy was husked by either licenced or unlicensed husking mills (under runner disc Sheller). In other words, amount of paddy milled by modern mills; huller, and husking mills were 0.222, 0.058 and 1.520 million tonnes respectively. Amount of paddy kept for seeds was 0.20 tone out of a total production of 2.5 million tonnes in the taulk.

Thus, it can be said that modern rice mills are more productive than the single huller mills. However, some people are of the opinion that since modern mills are capital intensive in nature, it cannot be a good solution for a country where there exists both unemployment and underemployment. In order to break this myth and to establish on the contrary that modernization of rice mills increases the employment potential per unit of paddy milled through direct employment and employment generated in subsidiary industries, a detailed estimate of the comparison of modern mills with that of huller mills for the Srivaikundam taluk.

Additional products of modern rice mill which are of considerable economic value are cement and silicon from paddy husk, animal feed and chemical like sodium silicate, furfural etc., All these products can be economically manufactured from by-products of milling industry providing additional income, employment and overall prosperity to the state economy.

PRESENT STATUS OF RICE MILLING INDUSTRY IN SRIVAIKUNDAM TAULK

In order to know the present status of rice milling industry in srivaikundam taulk case study was undertaken in the year 2017-2018 by the agricultural college of killikulam on the basis of questionnaire supplied by the department of food, ministry of food and civil supplies, Govt. of India. It was found that there were 10 licensed mills which were functioning. Of these 10 mills were surveyed by personal interview method by the author and the data were analyzed. The result showed that all the rice mills were running their mills for trading purposes only. Modernization of rice mills started in the taulk in 1984; so far only four of those were fully modernized and the rest were in the process of modernization. Seventy eight percent of the rice mills surveyed were found to be having rubber – roll – Sheller, 6 percent discs sheller, 10 percent battery of hullers and the rest 6 percent double hullers. About 89 percent of the rice mills has adopted local / traditional method of parboiling paddy and the

rest by CFTRI parboiling method and pressure parboiling. Only three rice mills were having rubber – roll – sheller was sold to the solvent extraction plants in the district which were four in numbers. Almost all the rice millers were aware of the modern equipment's used in rice mills Even though they believed that modernization was economical, they had not been able to procure and use all the modern equipment's due to financial constraint.

Only in case of few rice mills non-availability of power supply was found to be the stumbling block for modernization. The millers were quite confident of modernization their mills if they were provided with financial assistance technical advice, electricity, concessions in the present levy system and marketing facilities for products and by-products.