INTRODUCTION

Rice is the major staple food crop of India. It accounts on an average for 39 percent of the total area under several and 31 per cent of the area under foodgrains. It also occupies 22 per cent of the gross area sown in the country. Rice may be raised in all three seasons viz. Kharif, Rabi, and Zaid. The Kharif is main rice raising season and accounts for nearly 48% of the total production. The autumn crop commands 45% of the area as well as production. The share of the summer crop has been nearly 5% in area and 7% in production. The study conducted by the Programmes Evaluation Organisation conclude that the rate of the adoption of High Yielding Variety was 54% (cultivators) in Rabi Season and 28% (cultivatours) in Kharif Season. High Yielding varieties commanded nearly 51% of the area under Rabi and 22% of the area under Kharif, rice. Due to adoption of H.Y.V. of rice the irrigated area has increased by 17% during the decade 1980-1981 to 1990-1991. The increased in the cultivated area under rice was 9%. Simultaneously, the adoption increased the fertiliser consumption from 70 thousand tonnes (N.P.K.) to 2740 thousand tonnes in 1992-93. All these factors thus lead to an all round growth of rice as 1.08, 0.77 and 1.10% in production, area and yield, respectively.

Thus, rice has assumed a significant place in the crop calendar of the nation. In view of adoption of High Yielding Varieties of rice associated with the very large area under the
crop, the disposal of rice poses innumerable problems. The extent and pattern of disposal of rice as a major food crop is not only important in the context of economic development, but also, it has influenced the relationship between the rural and urban sector of the population. The major impact of disposal of rice could be visualised into these broad direction of economic development. (1) It would contribute to the capital formation in non-agricultural sectors by the farmers. (2) This would help in raising the living standard of farm population by making available the industrial goods for consumption purposes, (3) Finally, it would lead to higher investment in agriculture in the form of crucial inputs as well as farm equipments to raise the productivity of the land, there by, increasing the propensity to save and invest, so necessary for a balanced and steady economic growth.

In Uttar Pradesh, Rice is grown mainly in Eastern Central part of the state. The area under rice is 5.14 million hectares which is about 23% of the total food grain area. The production of rice in this state is 5.96 million tons, in chandauli. Rice is one of the most important food crop and occupies a very significant place in the agrarian economy of the district. The production is set in motion and action to serve one ultimate objective, that is to satisfy the countless need and desire of the cultivators and the human races. Production of commodity has no meaning unless they are exchanged profitably for money. In other words, maintenance of equilibrium between production and distribution is necessary. This will ensure economic stability.

In case of agricultural commodities the distribution system depends mostly on production and there by the surplus left after meeting the different needs of the cultivators.

It is in view of the increasing importance of marketable surplus of farm produce the present study” Role of Marketable Surplus of Rice in the Development of Chanduli District.” has been undertaken to examine the various economic factors associated with the problem. This would be one of the chief endeavour to study the nature of relationship between the volume of production and the extent of marketed and marketable surplus on different categories of farms.
CONCEPT

Marketed surplus refers to the sale by the producer sellers either for cash or for other commodities of necessity on barter. It is different from marketable surplus in as much as it includes quantities to be purchased back by them later in the year. The total production minus farmer’s retention for seed, wages, personal consumption etc. is equal to marketable surplus.¹

The panel of experts pointed out on the basis of the recommendation of the price variation enquiry committee 1956,² that the arrivals from producing area out of the new crop as the measure of marketable surplus. Market arrivals in so far as it relates to the quantities sold, represented the marketed surplus and not marketable surplus to be sold under normal circumstances after meeting the consumption and the requirements of the cultivators.

Marketed surplus may be less than equal to or more than the marketable surplus depending upon the external factors operating on the market economy. Only in the situation where there are no distress sales alongwith the price stability, marketed and marketable surplus can be equal. On the other hand, when the farmers might have anticipated higher price or they anticipate a lean agricultural season for which they would like to provide for themselves, the amount actually sold may be less than the amount they could sell. This might be true in the case of large farmers, who have retaining capacity and have large surplus to sell and could retain a part of it. Marketed surplus could be more then marketable surplus, when the farmers sell their producr in distress. Cash need force them to sell a part of their unsalable produce. The amout which is sold in post-harvest months at low prices are again bought back by the farmers for their consumption purposes in off season at higher prices.

Three sub of sectors could be distinguished within the agricultural sector of a developing

economy. Viable sub-sector of large holding with new technology where the normal income offers adequate living standards. Response to relative price changes is normal, so the farm prices should offer higher incentives for higher production. The other one is the subsistence sector of small holdings unaffected by new technology, normal income or inadequate even to offer quantitatively adequate diets. With lower farm prices the standard of living and maintenance of land and equipment have deteriorated. This has caused permanent harm to land, cattle and men. The relative prices have a strong influence also in this sector on production. In between these two exists medium holding sector, whose behaviour seems to be between the viable and subsistence sectors as far as the marketed surplus was concerned. Some medium sized cultivators who are unaffected by the new technology too, have no holding capacity and a majority of them were forced to sell just after the harvest. The remaining farmers of this group who are adopters of new technology attempted to store something more than it is necessary for their own needs, with the hope that selling this surplus on some future date at better prices than what it is prevalent at the time of harvest.

The influence of distance of farms from the market on marketed surplus is mainly indirect through its influence on production be due to (1) cost of transportation giving rise to price differential (2) external capital rationing being severel in places away from the market centre and (3) lack of market information in distant places. This traditional marketing channel are typically effective in transmitting price information, where the information of price can by a word of mouth reach the farmers as the distance involved is not large.

"Surfaced roads appear to be important in explaining productivity and income differences among districts......The absence of roads in heavy rainfall areas, such as Estern Rice Regin has the effect of raising input prices paid by them due to higher transportation costs.

Also the elasticity of production on surfaced road is more than (about 0.208) those farmers which are not on the surfaced roads. Output of other crops would also increase due to situation of farms on the surfaced roads. Moreover the supply of marketing service would be readily available to farms on the surfaced road. For example, the storage facility may become more specialised, and the method of transportation may become more, capital intensive. Some hypothetical cases could take place by the interaction of marketing services supply curve and farm supply causes by the development of surfaced roads.

(A) The market supply curve shift, but not the farm supply curve. Assumed that the development of surfaced roads, decreased the marketing costs, but did not affect the input prices. As a result product price has decreased in urban areas and increased in rural areas.

(B) The Farms supply curve had shifted but not the marketing supply curve. Assumed that more roads decrease input prices but had no affect on marketing costs as a result product prices had decline both in rural and urban areas.

(C) Both farm supply curve and marketing services supply curve had shifted, the impact was that farm prices remained unchanged. As a result, farm prices of output did not change, but the urban price of the products had decreased.

Considering the result obtained under assumption (a) was that more roads had resulted in greater output. This was assumed to occur only because the increase in roads had increased the cost of transferring products from the farm to non-rural consumers. The situation would lead to a loss of consumer surplus in rural areas but more gain would be in economic surplus.

The above situation which is analysed by the authors are of micro-economic nature. The higher marketing cost could be considered a problem even at the micro-level. If a cross-sectional study be considered where the farms were located very near to the market and


7. Ruttan, V.W. op. cit.

distant from the markets. Besides, the good conditions and developed roads do not exits. In these two situation, first out-put of the rice will be more in nearer farms than on distant farms. This had taken place due to more accessability to inputs of traditional nature, irrigation, fertiliger ect. secondary, nearer farmers would be more efficient in reducing the marketing cost than those of distant farms. Transportation cost would necessarily differ between the two farms, due to the bad condition of surfaced roads and distance from the market. The nearer farms could be in a perfect competitive condition as they would confront a large number of market functionaries to unload their produce and also the marketing cost be much less whereas, the distant farms would face an oligopsonistic competition (i.e.) large number of sellers and few market functionaries, in the villages. Thus changes of price discrimination would be always more in this situation in addition, the factors which will effect the marketed surplus in the two situations, were, production, family size, size of farm, consumption, farm income and level of prices.

Thus, the present study intends to analyse the nature and extent of marketed and marketable surplus of rice in district Chandauli of U.P. under different situations on different categories of farms.

**OBJECTIVES**

The present study has the following specific objectives.

1. To examine the different factors affecting the marketed and marketable surplus of rice at the farm level.
   (i) Volume of production
   (ii) Size of farms.
   (iii) Consumption habit.
   (iv) Prices level
   (v) Level of technology adopted.

2. To study the following factors at the farm level in mobilising the surplus.
   (i) The involvement of different agencies in the disposal of rice.
(ii) Transportation, its modes and cost involved in marketing of rice in relation to the choice of agency and the venue of sale.

(iii) The available storage facilities in the area of study.

3. To determine the relationship of marketed and marketable surplus with the help of functional analysis.

**HYPOTHESIS**

On the basis of the review of literature the following hypothesis have been formulated and are proposed to be tested in the present study under the different category of farms.

(1) Marketed and marketable surplus are positively related to the volume of farm out-put.

(2) Marketed surplus increases with:
   (i) The increase in size of the farm.
   (ii) The increase in the price level
   (iii) Increase in the adoption of new technology.
   (iv) Smaller size of families.

(3) Marketable surplus is poorly mobilized due to:
   (i) Poor transportation condition, higher costs involved in it.
   (ii) Poor facilities of storage.
   (iii) Other marketing facilities like agents, wholesellers, resident agents, co-operative organization and the facilities of market information at the village level.

**SAMPLING DESIGN**

In order to examine the objectives and to test the formulated hypothesis a multi stage stratified random sampling has been adopted for the purpose of the study.

**SELECTION OF BLOCK**

There are 11 development blocks in the district of Chandauli. Out of these, Chandauli block is one of the most progressive block in which rice is grown as the most important crop
enterprise. The block is closely connected with the city of Varanasi and is one of the two blocks in the district of Chandauli where intensive agricultural area programme in respect of rice is in operation. The soil of the block is plain, fertile and well served by a network of canals, providing a secure system of irrigation. It has been recognised as one of the most suitable and potential area for rice cultivation. The block is very well served by three of the major Regulated markets of the district. Thus the chandauli block has been purposively selected for the study of this nature. The higher level of productivity and production is a significant factor for generating marketable surplus.

**SELECTION OF VILLAGE**

The selection of villages were made by stratified random sampling methods. The villages have been stratified into three categories according to proportions area of rice as given below:

(i) villages having area under rice up to 25% of the gross area sown.
(ii) villages raising rice between 25 to 50% of the gross area sown, and
(iii) villages having 50% or more of the gross area sown under rice.

Out of the three categories five percent villages were selected randomly.

**SELECTION OF FARMERS**

From each selected village a list of owner cultivators was prepared and arranged in ascending order of their operated area and these were stratified into three size groups, i.e.

(i) first size groups below 1.00 hectare,
(ii) second size group from 1.00 to 2.00 hectares and
(iii) third size group from 2.00 hectares and above.

10% cultivators were selected randomly from each size-group. Thus the sample included 140 farmers distributed in three size groups and located in different parts of the block.
PERIOD OF ENQUIRY

The present enquiry relates to agricultural year 2004-05

SCHEDULES OF ENQUIRY

The following schedules of enquiry were prepared and their suitability were pretested in the area before they were finalised.

i- Market Schedule
   To study the pattern of survivals of rice/paddy by different agencies.

ii- Block Schedule
   To study the various aspects of socio-agro-climatic conditions in the Chanduali Block of the district.

iii- Family Schedule
   To study the various Agro-economic aspects of rice specially in relation to the disposal of marketed and marketable surplus by different size of farm.

METHODS OF COLLECTION OF DATA

Primary as well as secondary data have been collected for the present study. The survey method was used for the collection of primary field data. Various books, journals and official records at market, district and block level have also been consulted for the secondary data related to the present study.

COVERAGE

The study related to the district Chandauli covering two markets. One block Nine villages and families distributed in three size groups and located in different parts of the block.

ANALYTICAL PROCEDURE

The primary and secondary data related to the study have been processed, tabulated and analysed with the help of cross-tabulations. The popular statistical form
methods in the form of simple averages and “t” tests have also been used. In order to study the impact of different selected variables on Marketed and Marketable surplus of different categories of farms, suitable functional analysis has also been undertaken. Considering the sample size, t-test has been used which is the most appropriate test. In order to examine the suitable empirical relationship between the marketable and marketed surplus taken as dependent variable separately, and the different factors taken as in dependent variables, the functional analysis has been used as an analytical tool. For the purpose, the linear and the Cobb-Douglas form of functions have been used. Linear regression equation is explained in detail in the functional analysis.

Plan of the study:

Chapter 1: Introduction and Methodology
Chapter 2: The track under study
Chapter 3: Review of the literature
Chapter 4: Sampling of farms.
Chapter 5: Marketed and marketable surplus: An empirical study.
Chapter 6: Functional Analysis
Chapter 7: Summary and conclusion
Chauhan and Chhabra (2005) conducted a study on production, marketed surplus, disposal channels, margins and price-spread for maize cultivation in the Hamirpur district of Himachal Pradesh. A multi-stage stratified sampling technique was used to select the sample of blocks (2), villages (10) and maize growers (120) for the year 2001-02. The study on factors affecting marketing surplus, and cost & margins in the marketing maize revealed that farm-level marketable surplus was comprised of 53.21 per cent of the total production. The practices of storing maize for some and selling at a later date for higher price led o storage losses to the extent of 0.16 quintal (2.80 percent of marketable surplus). Much of the marketable surplus of maize (66.92 percent) was disposed of by a majority of farmers (74.56 percent) during the first quarter (October-December). Producer, local trader, processor consumer were found as the main channel in marketing of maize followed by about 71.93 per cent farmers, accounting for about 70 percent of the produce. The producer’s share in consumer’s rupee was estimated at78.01 percent in this channel.

Kumar (2007) in his study focused on the agricultural scenario of Haryana. The relevant data used in the study was collected from both primary and secondary sources. The primary data relates to the agricultural year 1993-94. Principle findings of the study were based on a cross-sectional field data of 400 households surveyed form 8 village in two districts of Haryana. The author found that the state has successfully implemented the regulated marketing system in agriculture, a wide network of mandis dealt with all agricultural commodities produced, and farmers sold their produce in regulated mandis through the services of commission agents while sale to intermediaries outside the regulated mandis was marginal. Co-integration analysis revealed that the agricultural mandis in the state were well integrated with each other, price transmission was found to be lacking in short-run because of paucity in the availability of information and the lack of quicker dissemination of available information. Marketed output was found to be having a direct relation with the size of land holding. Large farmers were found contributing
around 45 per cent in total marketed surplus even though they constituted only 10 percent of total cultivators. Output, farm size and area under tenancy were the significant factors with positive effect while family size and un-irrigated area had a negative effect influencing the aggregative marketed surplus. With respect to quadratic function, the coefficient of output was found to be significant and positive for aggregate output, wheat, paddy and coarse cereals and negative for pulses; the coefficient was insignificant in case of oilseeds and cotton. Marginal propensity to sale was found to be rising at all levels of output for wheat, paddy and coarse cereals but same was found to be declining with a rise in output for pulses. Elasticity bought out an inverse relation with output for all crops except for pulses, oilseeds and cotton. The study brought out in light the better facilities of market and transportation, which the farmers could avail. There was equal participation by all size of farmers with respect to marketing efficiency at the farm size level. The price index calculated at the aggregate level showed that there was no price discrimination against the marginal farmers.

Singh et. al. (2008) carried out a case study in the Sonkutch block of Madhya Pradesh for Soybean. The objectives of the study were to study the economics of production, marketing cost, and problems in marketing of soybean in the study area. Multistage stratified random sampling was adopted to selected the block, village, cultivators, markets functionaries; thereby to meet the objectives. The study revealed that there existed instability and fluctuations in prices of agricultural produce, which affected the net income of the farmers in-spite of the state being the largest producer of soybean in the country. Lack of marketing intelligence among farmers was also identified along with severe problems faced during transportation of the produce. According to study, the method of auction adopted for selling the produce was inappropriate and there was exploitation of farmers by mandi staffs in the form of charging extra amount. The study also brought out the fact that farmers with large size of holding used more inputs as compared to other farmers with smaller size of holding due to their high economic status. Major problem was observed in
marketing of soybean due to inappropriate selling method used in the study area, which calculated a chargeable amount of Rs. 385.95 per quintal for the reference crop.