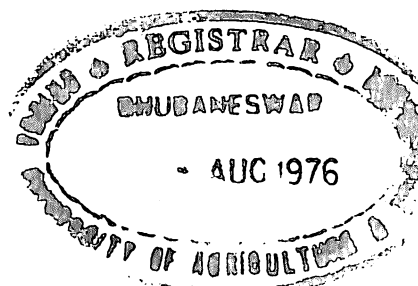


# **MARKETING OF POTATO IN CUTTACK DISTRICT**



THESIS SUBMITTED TO  
THE ORISSA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
**MASTER OF SCIENCE IN AGRICULTURE**  
( AGRICULTURAL ECONOMICS )

By

***Dibakar Naik***

THESIS ADVISOR :

**Mr. S. C. MALLICK**

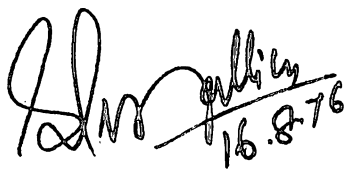
DEPARTMENT OF AGRICULTURAL ECONOMICS  
**COLLEGE OF AGRICULTURE**  
**BHUBANESWAR**

**1976**

## C E R T I F I C A T E

I hereby certify that this thesis entitled  
" MARKETING OF POTATO IN CUTTACK DISTRICT "  
submitted to the Orissa University of Agriculture and  
Technology in partial fulfilment for the award of Degree  
of Master of Science in Agriculture ( Agricultural  
Economics ) embodies the results of a piece of bonafide  
research work carried out by Sri Dibakar Naik, under my  
guidance and supervision and that no part of the thesis  
has been submitted for any other degree or diploma.  
I further certify that such help or source of information  
as has been availed for in this connection is duly  
acknowledged.

Bhubaneswar,  
The 16th August, 1976.

  
( S. C. Mallick )  
Assistant Professor,  
Department of Agricultural  
Economics,  
College of Agriculture, Bhubaneswar.

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College of Agriculture,  
Bhubaneswar,  
The 16th August, 1976.

Dibakar Naik  
( Dibakar Naik ) 16.8.76

Dedicated to my Parents



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**CHAPTER — I**

**INTRODUCTION**

## INTRODUCTION:

Marketing is commonly understood as mere "selling and buying". The activity is not so simple. It involves a multitude of economic activities resulting in the creation of utilities of different sorts with different functions and services such as assembling, transport, storage distribution and transfer of title to goods etc. It is a specialized composite economic activity which endeavours to establish an equilibrium between production and consumption. In so doing, it develops certain systems and practices in the sale and purchase of goods, the location of the places (Markets) where goods are transacted, the function, functionaries and institutions taking part therein, etc. within the country and in the countries abroad.

In India there is extensive field and immense potential for the production and marketing of agricultural produce. Being a tropical country, vast in size and diverse in soil and climate conditions, a variety of crops can be grown and are being grown in India. The farmer after meeting his demand for seed, domestic consumption and other purposes releases the rest of his produce for sale. The surpluses of the commodities which enter the markets

reaches the ultimate consumers and the industries.

Marketing enhances want-satisfying ability of goods and services by making them available to those who want them at the right time, right place, right form and in requisite quantities.

For a long time it was being presumed that Indian agriculture was for consumption in the farm it self and therefore the trade was much smaller. Because of this deep rooted conviction, marketing did not develop in the country to the extent it was desired. With the commercialisation and specialisation of Agricultural production as wellas with the increasing concentration of population in urban industrial areas, marketing of farm produce became complicated and assumed importance. Marketing has thus become a necessary adjunct of our rural economy.

The goal of marketing must be the cheapening of goods to the ultimate consumer. At the same time it will not affect the interests of producers. As a result of a fall in prices, a consumer can buy more goods and services for the same amount of money and thus his real income is increased. So any increase in the efficiency of marketing has the direct effect of lowering the costs of distribution and lowering prices to consumers.



Hence the reduction in the cost of marketing benefits the country as a whole. From this point of view, improvement in the process of marketing deserves a critical study.

✓ Cuttack district ranks first in area and production of potato among all the districts of Orissa. Nearly two-fifth (42.3 per cent) of the total potato acreage of the state is accounted for potato cultivation in the district, while the corresponding figures for Puri(23.2 per cent), Sambalpur(9.2 per cent) Balasore(1.5 per cent) and Kalahandi(0.04 per cent). 48 per cent of the total state production of potato is produced from Cuttack district followed by Puri(23.6 per cent) and Sambalpur (7.1 per cent). Besides, it gets large supply of potato from other parts of India. Further Cuttack city market is the business capital of the state. These facts enhance the importance of Cuttack as the major supplier of potato to other districts and there is a large concentration of potato wholesale merchants at Cuttack. Therefore marketing of potato in this district deserves an immediate study.

However the following objectives have been taken up in the study.

**Objective:**

The specific objectives set up for this study are outlined below.

1. To identify the agencies involved in the marketing channels of potato.
2. To study the cost of marketing and price spreads between different agencies.
3. To study the structure of potato prices in Cuttack market.
4. To find out the most profitable period of storage of potato in Cuttack district.

**Hypotheses:**

The following hypotheses have been tested in the study.

1. Marketing cost is unduly high.
2. Potato prices fluctuate very widely.
3. Storage capacity in the cold storages is inadequate.

**Outline:**

On the basis of the objectives and hypotheses, the study has been divided in to 5 chapters. Chapter-II deals with the review of literature pertaining to marketing of potato in different stages and countries .The available literatures are grouped in to 3 headings like(a) Marketing costs and margins in the marketing of potato,(b) Fluctuations in potato prices and (c) storage of potato. Chapter-III deals with the materials and methods for this research. In this chapter back ground of the district, location,

population, area, transport facilities, market information, institutional agencies and private agencies engaged in potato marketing, production of potato, source and nature of data, the sampling technique, analysed and presented. Chapter-IV deals with the results and discussions. This chapter has been divided in to 4 parts in order to present the subject matter methodically as per the objectives stated above. The first part (iva) deals with identification of agencies taking part in potato marketing and marketing channels. Part two (ivb) discusses the marketing costs and margins in potato marketing under three models. Part three (ivc) deals with fluctuations of potato prices in Cuttack market from 1963-64 to 1975-76. The fourth part (ivd) deals with the profitable period of storage of potato in Cuttack market. In chapter-V the main findings of the study have been summarised and conclusions have been drawn for future reference.

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**CHAPTER — II**  
**REVIEW OF LITERATURE**

## **CHAPTER- II:**

### **REVIEW OF LITERATURE:**

Many economists have devoted much attention to study of marketing of different agricultural products. They have developed some formulations and techniques to make analytical study in the field of marketing. Some reports have been published by the Government by conducting survey on marketing of potato in different states of India. Directorate of Marketing and inspection, Ministry of Food and Agriculture, Government of India, made a report after conducting a survey for the period from 1948-49 to 1952-53 on the marketing of potato in India. Besides it, many economists worked in the field of marketing costs and margins, price fluctuations and storage costs of potato and their studies have been reviewed below under the following headings.

1. Marketing costs and margins in the marketing of potato.
2. Fluctuations in potato prices.
3. Storage of potato.

#### **Marketing costs and margins in the marketing of potato:**

Mukherjee (1973) in his study regarding the wholesalers' margin of major agricultural commodities in India found that in case of potato the wholesaler

received 10.7 per cent from the consumer's price as his profit while marketing charges accounted for 35.5 per cent. He concluded that with the exception of potato the amount of wholesaler's profit was not unduly large in other agricultural commodities.

Agrawal (1945-46) in his study regarding the price spread in marketing of potato in Farrukabad and Kanpur markets of Uttar Pradesh found that, the producer received 75.1 per cent of the consumer's rupee. Assembling charges at different stages accounted for 9.8 per cent, the total transportation charges was 5.6 per cent, the share of wholesaler's margins accounted for 4.1 per cent and the retailer received the remaining 5.4 per cent as his share from the consumer's rupee.

Sayannar & Munshi (1945-46) in their respective study on marketing of potato estimated that the producer received 56.13 per cent from the consumer's rupee. Freights and other charges accounted for 11.9 per cent, miscellaneous charges was 6.8 per cent, the wholesaler received 5.4 per cent and the remaining 18.6 per cent was the share of retailer from the consumer's rupee. In case of rice the respective charges were 66.8 per cent 6.56 per cent, 17.2 per cent, 3.19 per cent and 6.25 per cent. In case of wheat, grapes, milk and oranges

the producer's share in the consumer's rupee were 68.5 per cent, 26.4 per cent, 64.75 per cent and 32.8 per cent respectively. Thus the study revealed that in case of perishable commodities like grapes, oranges and milk the producer's share in the consumer's rupee were appreciably less.

Munshi (1947-48) in his study concerning price spread in marketing of potato in Parade and Kanpur market of Uttar Pradesh pointed out that the producer's price in the consumer's rupee was 57.2 per cent, handling and cartage charges to assembling market accounted for 16 per cent total marketing charges were 8.8 per cent, Beopari's margin was 6 percent, handling and carting to retail market accounted for 4 percent and the retailer's share in the consumer's rupee was 8 per cent.

Merh (1948-49) in his study regarding the grower's share in some major agricultural commodities in Karnatak market of Bombay found that the producer received 56.13 per cent, freight charges accounted for 11.9 per cent, miscellaneous charges were 6.8 per cent, the wholesaler and the retailer shared 5.4 per cent and 18.6 per cent respectively from the consumer's rupee in case of potato.

During 1952-53 a survey was conducted by the Directorate and Inspection, Government of India on the

marketing of potato in Jullunder market of Punjab. It was estimated that the producer received 54.4 per cent as his net selling price from the consumer's rupee. Marketing charges on various heads accounted for 3.06 per cent, market fee paid by the wholesaler was 0.08 per cent the wholesaler received 0.63 per cent as his margin and the retailer received 39.65 per cent from the consumer's rupee. The percentage was calculated on marketing transactions based on 25 maunds of potato.

In another survey conducted in Musallahpur hat (Patna), and in market of Calcutta during the same year, it was found out that the producer received 64.5 per cent of the consumer's rupee at Musallahpur hat. Commission including sale tax and other marketing charges accounted for 2.9 per cent transport charges were estimated 1.3 per cent freight charges amounted to 5.5 per cent, commission and retailer's expenses were estimated to be 3.6 per cent, the wholesaler and the retailer shared 8.1 per cent and 14.1 per cent respectively from the consumer's rupee at Calcutta.

The report also showed the price spread in marketing of potato at three different marketing points. They are at Nilgiris (Madras), Mattupaliyam



and Calcutta. It was found out that the producer received 70.49 per cent of the consumer's rupee at Nilgiri, transport charges to Mettupalaiyam accounted for 2.46 per cent, commission charges were 1.65 per cent, the merchant received 4.27 per cent. Sale tax and other charges accounted for 4.72 per cent, railway freight from Mettupalaiyam to Calcutta amounted 8.50 per cent, commission and handling charges at Calcutta were estimated at 4.75 per cent and 3.03 per cent was charged for spoilage in transit and the rest 3.16 per cent was the wholesaler's margin from the consumer's rupee at Calcutta.

Ghate (1956) has analysed the price spread of potato in Cuttack market of Orissa state. It was stated that the producer received 60 per cent of the consumer's price when he sold his produce in the Kandarpur hat. Marketing charges accounted for 0.31 per cent, handling charges were 2.83 per cent, the total transport charges accounted for 1.86 per cent, the wholesaler and the retailer shared 15 per cent and 20 per cent respectively from the consumer's rupee at Cuttack.

Ghate and Rao (1957) estimated that in case of potato business in the markets of Nagpur and Howrah the producer's share in the consumer's rupee was 55.5 per cent at the time of pre-war-II and it was 70.5 per cent

at the time of post-war-II.

Kunwar, Singh and Nand(1972) in their study on marketing of potato in Farrukhabad market observed that marketing cost per quintal depended upon the distance, the quantity brought, the source of transportation and communication and the number of intermediaries and their margins. They concluded that marketing cost per quintal ranged from Rs.10.31 to Rs. 17.27 while the average came to Rs. 12.67 per quintal. The producer's share in the consumer's rupee varied from 60.43 per cent to 76.89 per cent. The average (producer's share) was worked out to be 71.52 per cent . It was found that the producer's share in the consumer's rupee increases as the marketing cost decreases.

In short, net producer's share varied from 54 per cent to 77 per cent, marketing charges varied from 0.31 to 35.5 per cent, wholesaler's margin varied from 0.6 to 15 per cent and retailer's margin varied from 5 to 40 per cent in the consumer's rupee.

#### Fluctuations in potato prices;

The following studies on marketing of potato in India were conducted from 1948-49 to 1952-53.

In Patna(Bihar) market, the highest seasonal price was recorded in November both in case of 'safed' and

In a study regarding the price fluctuation of potato in the Muttupalaiyam market of Madras during the period 1948-49 to 1952-53, it was observed that the prices of potatoes were high from May to November and the heighest price was recorded in the month of August. From December to April, a downward tendency of price operated in the market since this period was the harvest season.

It was observed that in Jullunder market (Panjab) during 1950-51 to 1952-53, the price of potatoes were high from July, to November and low from December to June.

At Kanpur market, prices of potato remained low from January to March during 1948-49 to 1951-52. November price of potato was the highest and February price of potato was lowest.

Sen(1961) in his study concerning the seasonal price fluctuation of potato in Bolpur market of west Bengal found that the monthly prices of potato varied from 0.25 paise per seer in the month of February to 0.75 paise per seer in the month of November in 1950. From his ten years observation he concluded that potato was sold at a low price during the months of February, March and April and at a high price in the months of September, October and November.

Mallik and Singh (1967-69) observed that the prices of potatoes gradually increased in Cuttack market and are maximum in the month of November. There is a specific period for high and low prices of potatoes with a little variation. This high and low price period corresponds to the pre-harvest and post -harvest period of potato .During the period of their study from 1967 to 1969. November was the dearest month during 1967 and 1968 and August for 1969. But February was the cheapest month in 1969 and March for 1967 and 1968.

In short, it was reported that November and August were the dearest months for potato in India. But the price of potato was minimum in the month of February. Further the studies reveal that potato price were higher the annual average from July to November and lower the annual average from December to June.

#### Storage of potato:

Abbot (1948) has stated that in Bihar during the early forties there was only one cold storage. The rent was Rs.9-00 per maund of potato for the entire season. But with the establishment of a large number of private cold storages there has been lot of competition and the rent was Rs.5-00 in 1959 and Rs.4-00 to Rs.5-00 per maund in 1960. The rate was however higher at places where the number of cold storages were limited.

There were 15 cold storages in Bihar during 1948-49 to 1952-53 and the total storage capacity was nearly 2 lakhs maunds of potatoes. The rental charges varied from Rs.7-00 to Rs.8-00 in the state. It was reported that some potato growers followed the country method of storage and kept potato either in bags or in baskets.

Punjab had no cold storage in 1949 and it owned 3 cold storages during 1950-51. The total storage capacity was 89 thousand maunds of potato. The storage charges varied from Rs.6-00 to Rs.9-00 per maund for the whole season with a guaranteed return of 90 per cent of the quantity stored. Potato growers also followed various country methods of storage.

There were only 15 cold storage in Uttar Pradesh in 1939 but in 1948 the number of cold storages increased to 48. The cold storage charges varied from Rs.4-00 to Rs.6-00 per maund of potatoes for the whole season (i.e. from April to October). Some growers also followed the country method of storage.

Kanwar, Singh and Nand (1972) in their study on marketing of potatoes in Farrukhbad (Uttar pradesh) found that the cost of storage per quintal was Rs.2.85 per month in the traditional method which was higher than that of cold storage charge (i.e. Rs.2.10 per month). The storage

loss accounted for 40 per cent in the traditional method while it was only 5 per cent in the cold storages.

In short, the cold storage rent for potato varied from Rs.4-00 to Rs.9-00 per maund for the whole season.

\*\*\*\*\*

**CHAPTER — III**

**MATERIALS & METHODS**

## CHAPTER-IXI

### MATERIALS AND METHODS:

#### Background of the District;

Inspite of 29 years of independence, Orissa remains a relatively backward state in the Indian Union. But Cuttack is a relatively developed District in the fields of education, health, infrastructure development, consumption pattern, power consumption, road transport and even in agricultural production. The percentage of literacy in Cuttack which in 1971 stood at 36.43 compared with the all Orissa average of 26.18 percent. It is much more as compared with Koraput (10.58 percent), Kalahandi (13.85) percent), Mayurbhanja (18.05 percent) and Phulbani (19.79 percent). The facilities of health service obtaining in Cuttack are also good. The number of public health institutions in the district is 1,045 as compared to 5552 in Orissa. It is more as compared to 193 in Phulbani, 216 in Kalahandi, 209 in Keonjhar, 236 in Balangir, 266 in Dhenkanal and 274 in Sundergarh.

According to 1971 census, the total population of scheduled caste and scheduled tribe constitute 20.7 percent in the district as against 38.2 percent in the state.

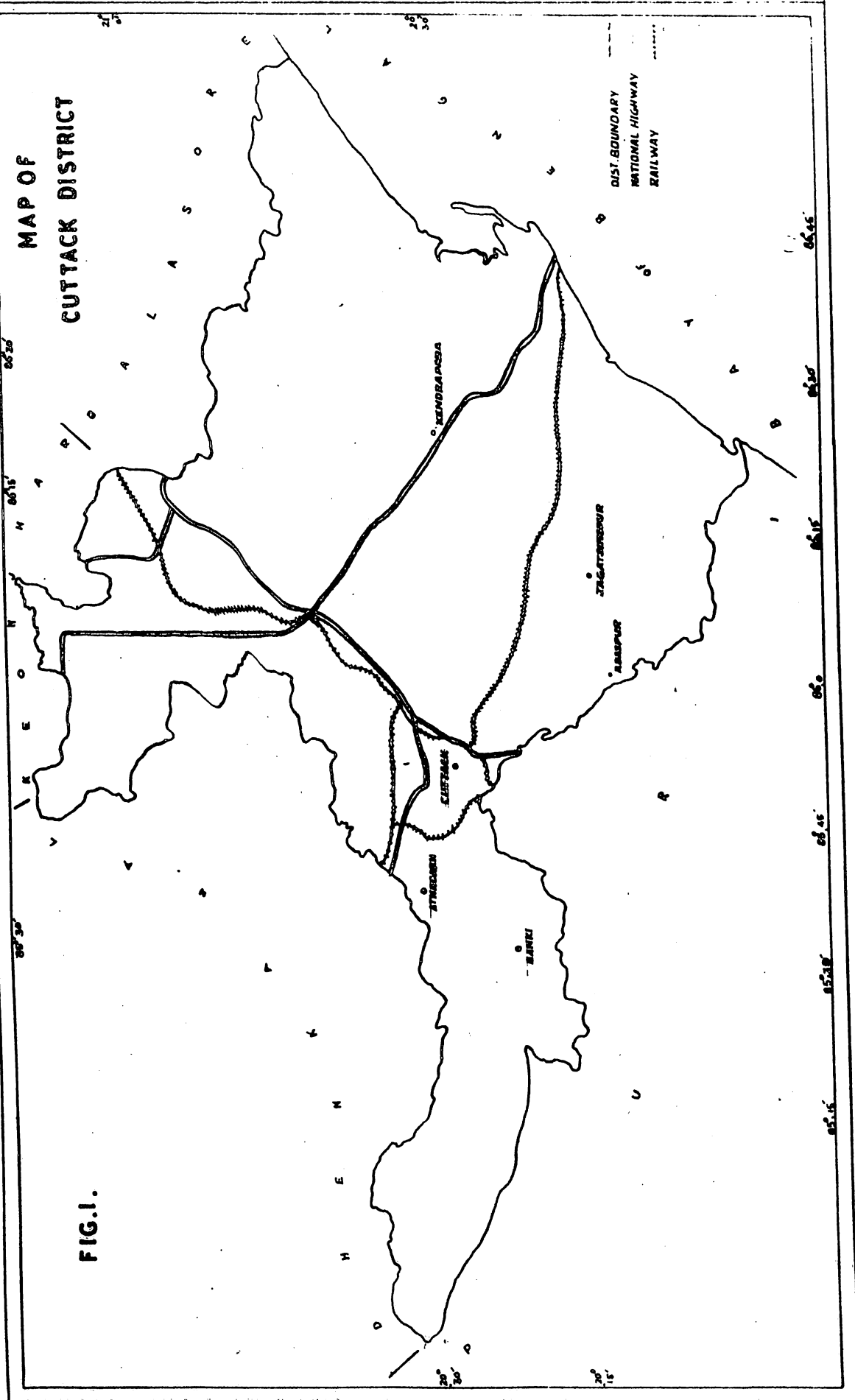
#### Location;

Cuttack is one of the costal districts of Orissa and lies between  $20^{\circ} - 1' N$  and  $21^{\circ} 10' N$  latitudes and between  $84^{\circ} 58' E$  and  $87^{\circ} 3' E$  longitudes. It is bounded on the north by Balasore and Keonjhar districts, on the south by Puri district, on the west by Dhenkanal district and on the east by the Bay of Bengal. The district has been



FIG.1.

# MAP OF CUTTACK DISTRICT



named after the name of its headquarters the city of Cuttack. The district contains 6 sub-divisions, 41 Community Development Blocks, 590 Gramapanchayats, 8 towns and 6027 Villages as per the 1971 census report.

### Population;

The population which was 2.20 million in 1901 rose to 3.83 million in 1971 having an increase of 59.9 percent during a period of seventy years. There is a small increase of population of 2.4 percent during the decade 1901 to 1911. The census of 1921 showed the first decline in the number of population of 2.8 percent of the District.

Table- I:

<u>Population growth in Cuttack District;</u>		
<u>Year</u>	<u>Population in millions</u>	<u>In percentage of total population Decennial growth</u>
1901	2.20	--
1911	2.26	+2.4
1921	2.19	-2.8
1931	2.34	+6.4
1941	2.45	+4.7
1951	2.53	+3.3
1961	3.06	+21.0
1971	3.83	+24.9

The disastrous epidemic, failure of monsoon resulting reduction of stock of food grains, price rise on account of war conditions encouraged migration, with the result of that the population of the district in 1921 was less than that of 1911 census by 62390, a loss of 2.8 percent. Then there is continuous increase in population in each census. The extent,

magnitude and pressure of population increase are quite uneven in different sub-Division of the district as shown in table-2

**Table-2**

<b>Area and population by Sub-Divisions in Cuttack(1971):</b>					
<b>Sl. Sub-Division no.</b>	<b>Area in Sq. K.Ms.</b>	<b>Population</b>	<b>Density per Sq. K.M.</b>	<b>Area as % of the District area</b>	<b>population as % of the total</b>
1. Cuttack Sadar	1804.45	967210	536.01	16.00	25.3
2. Banki	512.82	134386	262.05	4.50	3.5
3. Athagarh	1547.27	313062	202.33	13.80	8.2
4. Jagatsinghpur	1780.11	641005	360.09	15.80	16.7
5. Kendrapara	2494.69	823451	330.08	22.20	21.6
6. Jajapur	2887.85	948564	328.46	25.70	24.0
<b>T CUTTACK</b>	<b>11244.00</b>	<b>3827678</b>	<b>341.42</b>	<b>100.00</b>	<b>100.00</b>

Source:- Census Handbook Orissa,

Cuttack district part X-B(1971), pp.6

The table-2 indicates that the geographical area of each Sub-Division varies widely. Among the 6 Sub-Divisions of the district, Jajapur shares 25.7 percent of total geographical area followed by Kendrapara with 22.2 percent, Cuttack Sadar with 16 percent and Jagatsinghpur with 15.8 percent. But the Sub-Division of Banki is the smallest Sub-Division with 4.5 percent of the total geographical area of the District.

There is also a great difference in the number of inhabitants in each sub-division. The Cuttack Sadar is the most populous sub-division with a population of nearly 0.97 million followed by Jajapur with 0.95 million and Kendrapara with 0.82 million. But the population of Banki sub-division is only 0.13 million.

The density of population is 536.01 per sqm.K.M. in the sub-division of Cuttack sadar, while it is 360.09 in Jagatsinghpur, 330.08 in Kendrapara, 328.46 in Jajapur, 262.05 in Banki and only 202.33 in Athagarh as against 341.42 for the State of Orissa. In other words, the proportion of population varies from 1 to 7 in different sub-divisions of Cuttack district.

As regards area and population 4 out of 6 sub-divisions show variations while Kendrapara and Jajapur sub-divisions show constancy in area and population.

#### Transport;

Road transport occupies the key position in the transport of potato in the district. In addition to the road transport, the railways, river and canal transport have also quitean influential position in the transport operations.

#### (a) Road Transport:

There are different categories of roads in Cuttack. Among them the National Highways, State Highways and major district roads are very important for commercial purposes. The length of different categories of roads are given in the table-3. The total length of roads was

3894 kilometers excluding panchayat samit roads, Panchayat roads and Village roads.

**Table-3:**

**Length of different categories of roads in Cuttack district as on 1969-70 (in Kms.)**

<b>Sl. Categories of roads No.</b>	<b>Length</b>
1. National Highway	111
2. State Highways	52
3. Rail way	172
4. District roads and Roads with Rural Engineering Organisation	300
5. Improvement of revenue roads	3253
<b>TOTAL</b>	<b>3894</b>

**Source:- District statistical Handbook,  
Cuttack, 1969-70.**

**Cuttack is served by 3 National Highways (N.H.) and the details of which are explained below.**

- 1. N.H.No.5:-** It links Calcutta with Madras and is the most important commercial route in the district of Cuttack. It passes through the major towns of the coastal plains like Balasore, Bhadrak, Jajpur, Cuttack, Bhubaneswar and Berhampur
- 2. N.H.No.42:-** It Connects Cuttack with Sambalpur. It extends from Nirgundi on N.H.5 to Sambalpur on N.H.6
- 3. N.H.No.5A:-** It extends from Chandikhol to Paradeep port in the district of Cuttack. These 3 National Highways pass through the Cuttack district of length 117 Kilometers.

**(b) Rail Transport:-**

The South Eastern Railway serves the district with a total of 172 Kms. of rail roads and 22 stations, which are awefully inadequate. The rail road from Howrah to Madras is the most important rail link in the district. Moreover rail roads from Talcher to Puri and Nirgundi to Talcher are the other important rail roads in the district. Another most important rail road is already complete from Cuttack, the business capital of the state to Paradeep, the only and the best port of the district as well as in the state.

**(c) Water Transport:-**

The Cuttack district is situated in the coastal plain. The river Mahanadi (literary meaning is the greatest river) in the district flows from North to South and actually this river and its branches are the chief sources of water transport. Regarding the goods traffic, all the rivers and rivulets are navigable during the rainy and winter season. But they dry off in the summer season. At present the Mahanadi is navigable upto Arang in Raipur district of Madhya Pradesh from the Bay of Bengal. After the completion of Tikarapara Dam, this river can provide river traffic for all the year round, especially from Cuttack to Sambalpur. The river Devi is navigable throughout the year.

**(d) Canal Transport:-**

The Taldanda and the Kendrapara canals are both

irrigational and navigable. These canals provide cheaper modes of transport.

**Market information:-**

Market information is an important factor in agricultural production and in marketing activities. The producers, manufacturers and other middlemen in the Marketing processes depend upon the market information for a profitable marketing of their produce. Without the aid of market news, the whole superstructure of modern marketing would collapse. Therefore, there arises a need to study the sources available in Cuttack to disseminate the market news of different agricultural commodities.

**(a) All India Radio (Akashbani):-**

Out of 3 stations of the All India Radio, in Orissa, All India Radio, Cuttack is in Cuttack city. This Local Akashbani station broadcasts market rates of different agricultural commodities of different important markets of the district as well as the state in its Farmers' Programme.

**(b) Local Newspapers:-**

There are three daily Newspapers in Cuttack. The Samaj, the Prajatantra and the Matrubhumi are the dailies which are published from Cuttack. The dailies very often publish the market rates of potato of different parts of the district along with the prices of other commodities. The press notes of the Government relating to price policy, control orders and future plan in relation to marketing are also published in the local dailies.

The local dailies disseminate market news more effectively. The producer- sellers, the consumers and the middlemen in potato marketing are in close touch with the dailies.

**(c) Post, Telegraph and Telephones:-**

The wholesalers, and other middlemen are in constant touch with the telegrams, telephones, as regards prices, market activities and generally business conditions. The post offices are also helpful in informing the business partners or agents regarding the market business. It is reported that there were 752 post offices, 122 post and telegraph offices, 66 public call offices and 24 telephone exchanges in Cuttack district in 1969.

**Marketing Centres:-**

The marketing centres of potato are spread over the entire district, Potato production in the district amounts to 20410 metric tonnes or 43.20 percent of the total potato production of the state in 1974-75. Therefore potato can have more places for its sale than in other districts. The city, towns and local hats (local market places or local mandis) are the main business centres for marketing of potato. There were 288 main marketing centres for potato sale in Cuttack in the year 1970-71, out of which 8 marketing centres were in towns and 280 business centres were the local mandis.



**Institutional agencies engaged in Potato Marketing;**

Apart from different non-institutional agencies engaged in potato marketing, different institutional agencies, such as the Government, the Co-operatives and the regulated market committees are engaged in potato marketing in Cuttack. Although the volume of potato handled by the institutional agencies is not yet satisfactory, still these agencies have successfully tried to break the monopoly business activities of different non-institutional agencies such as the cold storage owners, wholesalers, traders and retailers.

**(a) Government:-**

The Government tries to improve the marketing of potato in the interest of farmers and consumers. It procures potato directly and also through co-operatives and store in the cold storage to supply the potato in off time. The Government has established its own two cold storages in Cuttack city of capacity 20750 quintals. The Government assists different institutional agencies for their smooth business activities in potato marketing preferably in storage activities.

**(b) The Co-operatives:-**

The Co-operatives help the farmers by establishing a number of cold storages in the different

potato producing areas in marketing of potato preferably in storage activities. But this is mostly neglected by the Regional Co-operative Marketing Societies of Orissa. They deal with more of fertilizers and other consumer goods, rather than the agricultural produce. There were 4 Co-operative cold storages in the district as against 13 in the State. The cold storages are at Jagatsinghpur, Banki, Bailishimauja and one at Bahugram and the total storage capacity in the district is 36 percent of the state.

**(c) Regulated Markets:-**

The Regulated Markets are the proper places where the producer-sellers obtain fair prices for the sale of their commodities. The market fee is very nominal and the farmer avails of other facilities such as storage accomodation of agriproduce, correct weighment and deduction of unauthorised market charges etc.

**Private agencies engaged in Potato Marketing:**

**(a) Cold storage:-**

There is only one private cold storage in Kujanga in Cuttack district as against 10 in the state. The capacity of this cold storage is 7500 quintals or 10 percent of the total capacity in the private cold storage of the state. In addition to storage of potato,

**T A B L E - 4:**

<b>Area, Production and Yield of Potato;</b>							
<b>Sl. Year no.</b>	<b>Area under potato in Cuttack district. (in hect.)</b>	<b>Area under potato in Orissa. (in hect.)</b>	<b>Area under potato in Cuttack district as percentage to the total area in Orissa</b>	<b>Production of potato in Cuttack District. (in tonnes)</b>	<b>Production of potato in Orissa. (in tonnes)</b>	<b>Production of Potato in Cuttack district as percentage to the production in Orissa.</b>	<b>Yield of potato in Cuttack district (Quintal per hect.)</b>
1. 1971-72	3831	7098	53.97	31210	56190	55.54	81.45
2. 1972-73	3248	6934	46.84	17950	35870	50.04	55.28
3. 1973-74	2331	5342	43.63	18350	41230	44.50	78.73
4. 1974-75	2382	5850	40.71	20410	47240	43.20	85.70
Average	2948	6306	46.28	21980	45132.05	48.32	75.29

**Source:-** Director of Bureau of Statistics and Economics.

it also stores fish and other perishable products available in the locality. The proprietor of this cold storage also procures potato from other states.

#### Production of Potato:

Before analysing the marketing activities and marketing functions of different agencies, it is essential to study the production trend of potato as production influences marketing. Table-4 indicates the production of potato, area under potato and yield per hectare in the district as well as in the state.

It is evident from table- 4 that nearly 3,000 hectares of cultivated land is put under potato cultivation in Cuttack district. In otherwords, nearly 46 percent of the total potato acreage of the state is accounted for potato cultivation in the district, while 48 percent of the total state production is produced from the Cuttack district. The average production of potato per hectare was only 7529 kilograms.

#### The Data:-

For this research the following data are required.

##### (1) General information about the district:-

It includes informations pertaining to the location, population, area, transport facilities, market information, marketing centers and statistics of potato production etc.

These data were collected from Directorate of Census, Food and Agriculture Department and Bureau of Statistics and Economics, Government of Orissa.

**(11) Date on cost of Marketing and Price Spread:**

There are three sets of data on the cost of marketing and price spread between different agencies in potato marketing in Cuttack district. The first set (model- 1) has three middle men, the second set (model-2) has two middlemen and the third set (model-3) does not have any middleman. The detailed informations for these three models are as follows.

**(a) Model-1:-**

Producer -- Village trader-- Wholesaler--  
retailer-- consumer.

It includes net share of producer, expenses incurred by producer, expenses and margins of Village trader, expenses and margins of Wholesaler, expenses and margins of retailers and consumer's price.

In this analysis, the consumer's price pertains to second week of March, 1976 while the producer's cost pertains to first week of February, 1976. So this study covers a period of one month.

**(b) Model- 2:-**

Producer-- Trader-- Retailer-- Consumer.

It includes the net share of producer, expenses incurred by producer, expenses and margins of

trader, expenses and margins of retailer and consumer's price. In this study producer's price pertains to the 1st week of February and consumers price pertains to second week of March.

(c) Model- 3:-

Producer--- Consumer:

It includes the net share of producer, expenses incurred by producer and consumer's price. In this model, no middleman takes part in the marketing activities. The data were collected personally in the primary markets when the producer-sellers were coming to the market for sale of their commodities, in the first fort-night of March, 1976.

To study the marketing costs and margins Mode Method was adopted for this research study. In this method, average or modal prices were compared at different points in the marketing channel to obtain the gross margin. The costs incurred by the intermediaries were deducted from the gross margin to obtain the net margin of the concerned agency. This method was used as comparable prices were available for the same quality of produce at different points in the market. The costs and margins of potato were worked out in the selected markets over time and space for model-I and Model-2.

But in the model-3, the cost of marketing and price spread were calculated at a point of time and in the primary market.

The Cuttack revenue district has six sub-Division. Out of these six sub-division: 5 sub-divisions were studied to know the marketing cost and margin of potato. The Jajpur sub-division could not be covered due to paucity of time and facility of the researcher. The following statement indicates the local market in each sub-division which was selected for this research.

<u>Sl.No.</u>	<u>Name of Sub-Division</u>	<u>Name of Local Market.</u>
1.	Cuttack Sadar	Bayalishi Mauza
2.	Jagatsinghpur	Somanath hat
3.	Kendrapara	Kendrapara
4.	Athagarh	Athagarh
5.	Banki	Banki

While for Cuttack Sadar, Jagatsinghpur and Kendrapara sub-divisions Cuttack city market is the secondary market, for Athagarh and Banki there is no secondary market for potato. This may perhaps due to two reasons, namely (1) Small scale production of potato in these two sub-divisions compared to local demand and (2) lack of adequate price incentives to cover up the transportation cost.

From each market the marketing costs and margins were studied under model-1, Model-2 and

model-3. For each model the researcher has contacted at least 3 respondents at each stage for accuracy in result. So the researcher has contacted 45 producer-seller, 45 consumers, 15 village traders, 15 traders, 15 wholesalers and 30 retailers in the entire research period to find out the actual marketing costs and margins in potato marketing in Cuttack district.

**(iii) Structure of Potato Prices in Cuttack District;**

It includes the data on the wholesale prices of potato of Cuttack district for the period 1963-64 to 1975-76. These data were collected from the Civil Supply office, Cuttack for the purpose of price analysis.

**Analytical procedure used.:**

**1. Producer:**

**(a) Net share of producer:-**

This was worked out as the difference of price received by the producer minus the amount spent before it is offered for sale.

**(b) Expenses incurred by producer:**

(1) For model- 1:- This includes labour charges for filling, stitching the bags and weightment of the produce and loss in storage. Just after harvest, potato is sold by the producer to the village trader at the village level.

(ii) For model- 2:- This includes labour charges for filling, stitching the bags and weightment of the produce and the loss in storage. In addition to these charges



transport charges, loading and unloading charges have been taken for finding out the expenses of the producer. In this model-2, transaction has been made in the primary market.

(iii) For Model- 3:- In this model, all charges as described in model- 2 have been encountered fully. In this model, transaction takes place in the primary market.

**2.(a) Expenses of village trader;**

It includes interests on his borrowed capital, charges for filling, stitching the bag, weighment and loading, transport charges, storage charges, unloading charges, etc. plus the purchase price of the commodity.

**(b) Margin of village trader:**

Total money received minus total expenses.

**3(a) Expenses of wholesaler:**

The wholesaler spends money for weighment, loading and unloading, transport charges, loss of gunny bags, agent charges, storage charges, income tax and for interest on his borrowed capital.

**(b) Margin of wholesaler:**

It is calculated by subtracting the total expenses per quintal of potato from the sale value of one quintal of potato.

**4(a) Expenses incurred by retailer:**

Expenses incurred by the retailers are weighment, loading and unloading charges, transport charges, depreciation charges of gunny bags, losses in

transit and interest on his borrowed capital etc.

**(b) Margin of retailer:**

It is the difference of consumer's price and the retailer's total expenses per unit of the commodity.

**5(a) Expenses incurred by trader:**

It includes interest on his borrowed capital, charges for filling, stitching and weighment, loading and unloading charges, transport charges and storage charges etc. In addition to these charges he pays the purchase price of potato to the producer-seller.

**(b) Margin of trader:**

It is the difference of price received by the trader minus the total expenses incurred by him. Generally the trader undertakes the work of village boepary or village trader and the work of cold storage owner. He purchases potato from the producer-seller and the quantum of potato handled by him is less.

**6 Estimation of storage cost:**

For calculating the storage cost, the following components of the cost were worked out.

**(a) Rent of godown:**

It is really difficult to assess the rent for trader's godowns. Many traders store potato in a part of their living houses for short period. At the same time they store different commodities in the same buildings. In addition to these factors, repairs and maintenance

of godowns, opportunity cost etc. make difficult for correct assessment. Moreover labour and supervision charges are difficult to find out for a particular commodity.

Therefore the data for storage rent of potato in Cuttack city was collected from the Government cold storage, Ranihat, Cuttack. In the present analysis the storage rent of potato in the Government cold storage for the whole storage season (from March to October) is 22 ruppes per quintal. The storage rent for four months is 11 repees per quintal and per each month Rs.3-00 per quintal.

(b) Interest on capital: ✓

The source of invested capital is to be known for finding out the rate of interest. The rate of interest on borrowed capital (short term bank advance) was 105 percent in the commercial banks and nationalised banks during the study period for 1972 to 1974 and 14 percent for the period 1975. But in this district private money lenders even charge 19% to 25% rate of interest on borrowed capital. On enquiry the traders told that most of the invested capital were of their own. Therefore in the present analysis a rate of interest of 11 percent per annum (slightly higher than

the bank rate and much lower than the private money lending rate) for the period from 1972 to 1974 and 15 per cent for the year 1975 have been used as a reasonable approximation of the opportunity cost of the traders' investable surplus.

(C) Depreciation of the gunny bag. ✓

Traders opined that gunny bags could be used for one marketing season only due to the perishability of the products and the gunny bags used for the purpose are thin. The rate of gunny bags also varied from Rs.1.50 to Rs.2.00 during 1972-73 to 1975-76. Therefore Rs.0.15 per month would be reasonable rate of depreciation of gunny bags.

(D) Loss in storage: ✓

The Government of Orissa accepts that storage loss of potato is only 8 per cent if potato is stored for a period of 8 months. Therefore storage loss is assumed to be 1 per cent per each additional month.

Statistical Analysis:

For the study of price fluctuation of potato in Cuttack market, the wholesale price of potato is available for the period 1963-64 to 1975-76. 1963-64 is a normal year in respect to agricultural production. Therefore, for the present study of price relatives,

1963-64 has been taken as base year. The formula used for the purpose is:

$$I = \frac{\sum P_{1c}}{\sum P_{10}} \dots \dots \dots (1)$$

Where  $P_{1c}$  is the price of the 1 th commodity during the period under reference, and  $P_{10}$  is the corresponding price of the 1 th commodity in the base period.

In the study we have considered only one commodity i.e. potato. As such the above formula is simplified as:

$$I = \frac{P_{1c}}{P_{10}} \dots \dots \dots (2)$$

Where  $P_{1c}$  is the price of potato for the period under reference and  $P_{10}$  is the corresponding price in the base period.

The present study has covered data from 1963-64 to 1975-76 . As these data refer to successive intervals of time, the time series analysis has been carried out. The price data when plotted on graph showed continuous changes all the time, therefore it gave an impression of haphazard movements. Critical examinations revealed that the changes are not totally haphazard and a part of it, at least, could be accounted for . That part which could be accounted for is systematic one and other part is unsystematic or irregular.

As we know the systematic part is attributed to

i) Secular trend (ii) Seasonal variation and (iii)

Cyclical variation. In a given time series some or all of the above components may be present. Separation of these components are important for specific study of their behaviour. It may be pointed out here that the systematic parts of the time series are used for forecasting of price behaviour.

Any particular value (P) at a given time is considered to be a produce of the factors attributed to secular trend (T), seasonal (S), Cyclical (C) and irregular components (I). Thus :

$$P = T \times S \times C \times I \dots\dots\dots(3)$$

As these components are important for the study of behaviour of price over the period under study, these were separated assuming the multiplication model given in (3). T has been expressed as the same unit as P and the other components are relatives which are generally stated as percentages.

#### 1. Measurement of Trends:

Usually a polynomial of suitable degree is selected for determining the trend. The choice of the appropriate polynomial is formulated by a graphical representation of the data. In the present study it was observed that a linear trend was appropriate for the

purpose. As such a linear trend  $Y = a + bX$  was fitted. Where Y is the estimated trend value, X is the time period under reference, a and b are unknown constants. These constants were calculated by the usual least square method.

The method of least squares provides a convenient device for obtaining an objective fit of a straight-line trend to a series of data. It is known that the equation for a straight line involves the two constants, 'a' and 'b'. For a fitted straight line, the values of 'a' and 'b' must be determined from the observed data ; consequently and solved simultaneously. These normal equations are

$$\sum Y = Na + b \sum X \dots\dots\dots(1)$$

$$\sum XY = a \sum X + b \sum X^2 \dots\dots\dots(ii)$$

Solving out these two normal equations two desired unknowns namely a and b were found out.

## 2. Measurement Seasonal Fluctuation;

An attempt is made to study the seasonal fluctuation of potato prices for efficient potato marketing. For this purpose usually the moving average method is used to construct seasonal index. Computation of centered 12-month moving average involves more work than does the determination of trend values, but the resulting seasonal index is a better one. A 12-month moving average is a series of averages which embraces first, the

first 12 months of a series, next the second to thirteenth months, then the third to fourteenth months then the third to fourteenth months and so on. It is necessary to adjust the moving averages so that they will be in step with the original data. This process is called centering and involved computing a two-month moving average of the 12-month moving averages. In other words what we have actually done in computing a centered 12-month moving average is to compute a 13-month moving average with the months weighted 1,2,2,2,2,2,2,2,2,2,2,2,1 and then deviding the figure by 24. The next step in computing the seasonal index consists of expressing each original value as a percentage of the corresponding centered moving average. The results are shown in table-10.

The logic of the procedure is as follows. As stated (3),  $P = T \times S \times C \times I$ . The 12-month moving average is a rough estimate of ' $T \times C$ ', because the 12-month average smoothes out seasonal movements and for the most part, irregular movements, since the latter are largely movements, of small amplitude and short duration. If we now devide the original data by the 12-month moving average, we have an estimate of the seasonal and irregular movements combined. Then a table of monthly arrays was constructed (Table- 11). Next, to eliminate irregular fluctuation(I),



one highest value and one lowest value were excluded and the middle ten values were added up. This is given in row 13 of table-11. In row- 14 mean values of row-13 have been shown. The mean of these 12 modified means worked out as 99.91. Finally to get the seasonal index (row-15, table-11) each modified mean in row- 14 was divided by 99.91. The average value of 12 seasonal indices was 100.00, which indicates that the adjusted figures are neither too large, nor too small.

### 3. Cyclical Movements:

The cyclical fluctuations were obtained by eliminating, first seasonal variation, then trend and then smoothing out the irregular variation by three months weighted moving average with weights, 1,2,1 respectively.

The computational procedure was as follows:

First the original monthly price data were divided by the seasonal index and each figure was then multiplied by 100 to get deseasonalised data. Each deseasonalised data was divided by the corresponding trend value to get cyclic- irregular percentage. As it is known, the irregular fluctuations can not be completely eliminated from a series without the accompanying danger of over-smoothing. However, to smooth out these movements three-month moving total weighted with 1,2 and 1 was computed for the cyclic- irregular values and then each moving

total values was divided by 4 to arrive at the moving average.

#### 4. Coefficient of variation(C.V.):

Coefficient of variation is a measure of variation which is independent of the unit of measurement and is therefore useful for comparison between different population. It is given by

$$C.V = \frac{\sigma}{\bar{X}} \times 100$$

where  $\bar{X}$  and  $\sigma$  are the mean and standard deviation respectively. In this study, C.V. has been used for comparison purpose.

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**CHAPTER —IV**

**RESULTS AND DISCUSSIONS**

## **CHAPTER - IV (a):**

### **IDENTIFICATION OF AGENCIES AND MARKETING CHANNELS:**

Potato is a perishable agricultural produce which needs maximum care in storage, handling and transportation. In Orissa, Potato is produced once in a year but the demand for potato is less elastic as potato constitutes the major food item next to rice. Potato marketing is a common feature every where in the Cuttack district. The agencies which are engaged in potato marketing are many and each one of them plays a dominant role in the marketing system.

#### **Agencies involved:**

The agencies who are engaged in potato marketing in the district are discussed below:

##### **1. Village trader:**

Village traders are petty traders, generally without shops, who purchase directly from producers in small lots. Their prices are usually close to the primary market price minus transport costs. The producers sell to the village traders because it saves them the trouble of arranging for transport and sale in a local market.

## 2. Wholesaler:

The wholesalers of potato purchase potato from village traders or from commission agents or directly from the producers. They purchase generally in bags. They procure potato either in secondary market or in primary market. The small wholesalers generally operate seasonal procuring centres (i.e. for about two months in the post-harvest season) in the producing areas. When they achieve their targets, they shift their procuring centres to the towns.

## 3. Commissionagents:

These intermediaries are engaged in buying and selling of goods on behalf of their principals for commission. The wholesalers purchase their stocks through commission agents.

## 4. Private cold storage:

The proprietor of private cold storage undertakes two jobs in the potato marketing. First he accepts other's stocks for storage for a definite period. In other words he sells his storage space as a storage agent. Second, the proprietor undertakes the job of a wholesaler in potato marketing.

## 5. Trader:

A trader is a middle man who undertakes potato marketing for short run profit. He may purchase

potato to-day and may sell within a week. He may purchase potato directly from producers at their farms or in local hats and sell potato either to wholesalers or retailers or other traders or consumers. A trader may act as a shipper in potato marketing. He does not store potato for a longer period. He tries to sell the stock as quickly as possible.

**6. Village shop keeper:**

The village shop keepers undertake their normal business in the villages. They purchase potato from producers and sell potato to the labourers and other farmers. The village shop keepers also take potato to the local hats for sale and on their way back to their villages, they purchase grocery items for their normal business.

**7. Retailer:**

Retailer is the last link in the chain of middlemen, who sell directly to consumers. He sells and sets up his business usually amidst the consumer groups. The retailer buys potato either from the wholesaler or from the trader.

In addition to these middlemen in potato marketing, a good number of facilitating intermediaries are also performing some vital functions in the consummation of the transaction in the marketing system. These are

owners, bullock cart owners, railways, money lenders Banks and cold storages. All of them do influence the potato trade in the district. Mostly these middlemen specialise in transportation, financing and storing etc. and they are generally not used to define marketing channel as the channel is generally conceived as a linkage of selling intermediaries.

Marketing channel (or trade channel or channel distribution) means a set of marketing middlemen. These intermediaries co-operate each other and work together for mutual advantage although their relationship is symbiotic and they do dissimilar work. If there is a set of intermediaries, naturally a set of marketing channels would be evolved.

In Cuttack district in the potato market structure, a long chain of middlemen have created a number of market channels. The important market channels are described in figures 2,3,4 and 5. It is found that generally three or less number of middlemen form the market channel for potato.

**A. Market channel having 3 middlemen:**

1. Producer - Village trader - Wholesaler - Retailer consumer.

2. Producer:- Commission agent - Wholesaler -  
Retailer- Consumer.
3. Producer:- Village trader - Private cold storage -  
Retailer - Consumer.
4. Producer:- Private cold storage - Wholesaler-  
Retailer - Consumer.
- B. Market channel having 2 middlemen:
5. Producer:- Wholesaler - Retailer - Consumer.
6. Producer:- Trader - Retailer - Consumer.
7. Producer:- Village Trader - Private Cold storage -  
Consumer.
- C. Market channel having one middleman:
8. Producer:- Trader - Consumer.
9. Producer:- Village shopkeeper - Consumer.
10. Producer:- Private cold storage- consumer.
- D. Market channel having no middleman (Direct selling):
11. Producer:- Consumer.

Out of these 11 identified marketing channels for potato in Cuttack district, the researcher has taken 3 channels for detailed study of marketing costs and margins. The first channel is having 3 intermediaries, second channel is having two intermediaries and the third channel is without any middle man or direct selling. The channels studied for this research



investigation are:-

1. Producer:- Village trader - Wholesaler  
Retailer - consumer.
2. Producer - Trader - Retailer - Consumer
3. Producer:- Consumer.

\*\*\*\*\*

FIG. 2. MARKET CHANNEL FOR POTATO IN CUTTACK DIST.  
MARKET CHANNEL HAVING 3 MIDDLE MEN

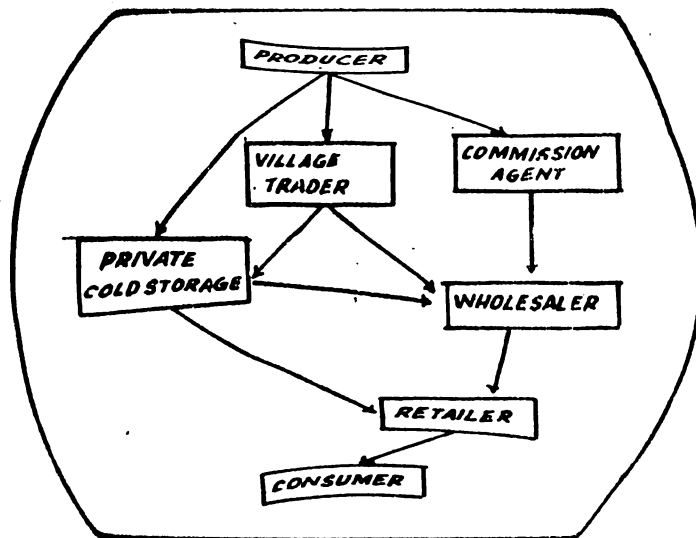


FIG. 3. MARKET CHANNEL HAVING 2 MIDDLE MEN

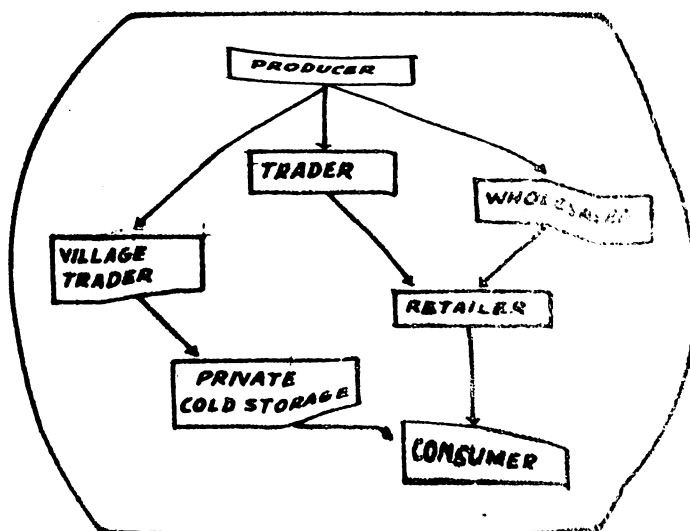


FIG. 4. MARKET CHANNEL HAVING ONE MIDDLEMAN

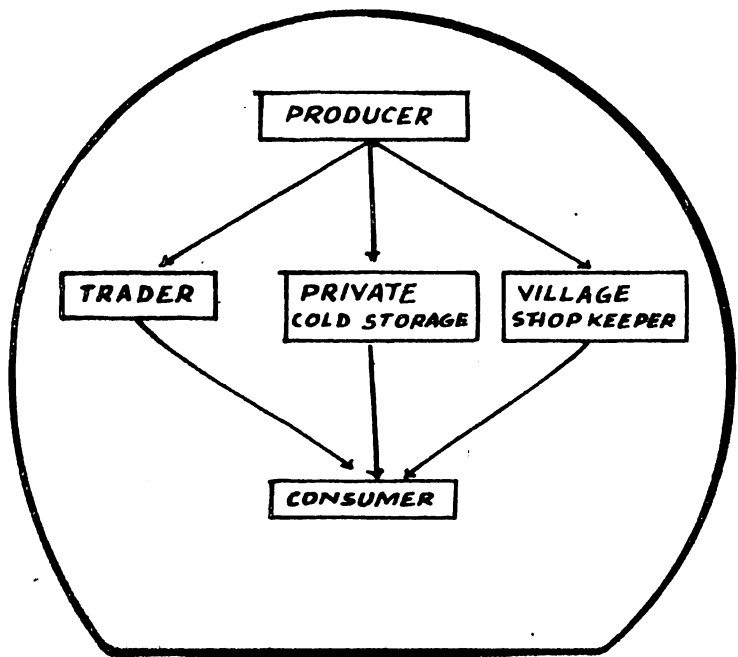
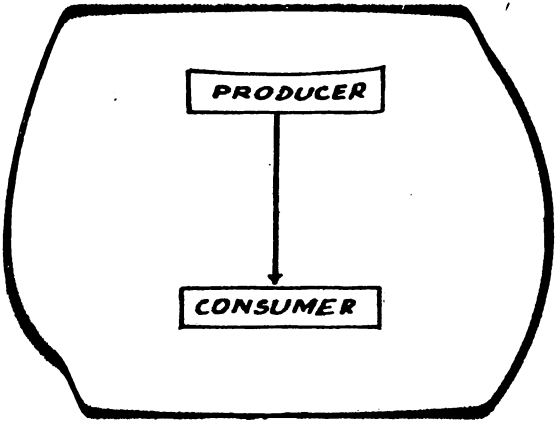


FIG. 5. MARKET CHANNEL HAVING NO MIDDLEMAN



## CHAPTER - IV(b):

### MARKETING COSTS AND MARGINS:

The cost of marketing refers to the charges incurred and taxes, levies, excise duties etc. paid by the farmers and the intermediaries involved in the sale and purchase of the commodity from the time the produce reaches the market till it is finally sold to the ultimate consumer. It would include the total cost of transportation and handling, market charges, cost of assembling processing, distribution, taxes paid etc. In short marketing cost refers to the actual expenses of the farmers and other intermediaries in the sale and purchase of any commodity while the marketing margin refers to the profit or loss of the intermediaries in the marketing business for the commodity during the movement of the produce from the farmer to the consumer. In other words marketing margins are the actual amounts received by the marketing agencies in the marketing process.

Study of marketing margins and costs indicates the nature of marketing activities and judges the efficiency of the marketing system.

The data on marketing costs and margins are presented below in rupees per quintal and in percentages to the consumers price (consumer's price = 100) for comparison and analysis, the computational method of which has been described in the chapter- III.

In the present chapter a comparative study for marketing costs and margins have been made in three models in five sub-divisions.

A study of marketing costs and margins in the Cuttack district indicates that the producer received Rs. 23.55 (48.91 per cent) in Cuttack Sadar, Rs.26.49 (49.38 per cent) in Jagatsinghpur, Rs.26.49 (52.40 per cent) in Kendrapara, Rs. 28.45 (53.34 per cent) in Athagarh and Rs. 28.45 (55.24 per cent) in Banki market per quintal of potato. Table-5 further indicates that the total marketing costs and margins amounted to Rs. 24.60 (51.09 per cent) in Cuttack Sadar, Rs.27.21 (50.62 per cent) in Jagatsinghpur Rs.24.06 (47.60 per cent) in Kendrapara. Rs.24.89 (46.66 per cent) in Athagarh and Rs.23.05 (44.76 per cent) in Banki per quintal of potato. It is observed from the table that the net producer's share varied from Rs.23.55 to Rs.28.45 per quintal of potato and marketing costs and margins varied from Rs.23.05 to Rs.27.21 for the same quantity of potato. The producer's net share is maximum

Sl. No.	Name of functionary/ share in consumer's price	Cuttack	Sadar	Jagatsinghpur	Kendrapara	Athagarh	Banki	Average
1.	Net share of producer	23.55 (48.91)	26.49 (49.38)	26.49 (52.40)	28.45 (53.34)	28.45 (55.24)	26.69 (51.89)	
2.	Expenses incurred by producer	1.45 (3.01)	1.51 (3.81)	1.51 (2.99)	1.55 (2.91)	1.55 (3.01)	1.51 (2.94)	
3.	Expenses incurred by Village Trader	3.27 (6.79)	3.80 (7.07)	3.12 (6.19)	3.49 (6.58)	2.95 (5.73)	3.32 (6.45)	
4.	Margin of village Trader	3.23 (6.72)	4.00 (7.44)	3.37 (6.67)	3.75 (7.03)	3.05 (5.92)	3.48 (6.77)	
5.	Expenses incurred by wholesaler.	4.09 (8.49)	5.60 (10.42)	5.03 (9.95)	4.99 (9.36)	4.86 (9.44)	4.91 (9.54)	
6.	Margin of wholesaler	2.91 (6.04)	2.25 (4.18)	2.12 (4.19)	2.10 (3.94)	1.99 (3.86)	2.27 (4.47)	
7.	Expenses incurred by retailer	4.43 (9.20)	5.01 (9.32)	4.08 (8.07)	4.51 (8.46)	4.13 (8.02)	4.43 (8.61)	
8.	Margin of retailer	5.22 (10.84)	5.04 (9.38)	4.82 (9.54)	4.50 (8.43)	4.52 (8.78)	4.83 (9.39)	
9.	Consumer's price	48.15 (100.00)	53.70 (100.00)	50.55 (100.00)	53.34 (100.00)	51.50 (100.00)	51.44 (100.00)	

(Figures in parentheses indicate per-centages)

Sources- Appendices I(a), I(b), I(c), I(d) and I(e).

in Athagarh and Banki and lowest in Cuttack Sadar. The reason of this disparity is that in Banki and Athagarh Sub-Divisions potato is locally consumed but in Cuttack Sadar, local potato has to compete with imported potato. Therefore potato price is lower both at producer's level, Wholesaler's level and consumer's level.

As regards marketing cost and market margin of potato these were more in Jagatsinghpur due to high transportation cost and high margin of intermediaries as compared to other markets.

The average data for the potato marketing in Cuttack district with 3 middlemen in the market channel indicate that a producer gets Rs.26.69 (51.89 per cent), marketing expenses account Rs. 14.17 (27.54 per cent) and marketing margins of intermediaries account Rs.10.58 (20.57 per cent), while the consumer pays on an average Rs.51.44 (100 per cent per quintal of potato).

#### Model- 2:

In the model- 2, where two intermediaries take part in the market channel the producer's net share amounts to Rs.25.50 (52.96 per cent) in Cuttack Sadar, Rs.28.45 (52.98 per cent) in Jagatsinghpur, Rs.27.70 (54.79 per cent) in Kendrapara, Rs.29.66 (55.61 per cent) in Athagarh and Rs.28.68 (55.69 per cent) in Banki per quintal of potato.

Analysis of marketing costs and margins of potato in Cuttack District;

<b>Sl. No.</b>	<b>Name of functionary/ share in consumer's price</b>	<b>Cuttack Sadar Jagatsinghpur Kendrapara Athagarh Banki Average:</b>					
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1. Net share of producer	25.50 (52.96)	28.45 (52.98)	27.70 (54.79)	29.60 (55.61)	28.68 (55.69)	28.00 (54.43)
2. Expenses incurred by producer.	2.00 (4.15)	2.55 (4.75)	2.30 (4.55)	2.34 (4.39)	2.32 (4.51)	2.30 (4.47)
3. Expenses incurred by Trader.	4.73 (9.83)	3.69 (6.87)	4.55 (9.00)	4.57 (8.57)	4.58 (8.89)	4.42 (8.59)
4. Margin of trader	6.27 (13.02)	6.81 (12.68)	4.90 (9.69)	6.68 (12.52)	5.77 (11.20)	6.08 (11.82)
5. Expenses incurred by retailer	4.42 (9.18)	4.43 (8.25)	4.22 (8.35)	4.58 (8.58)	3.60 (6.99)	4.25 (8.26)
6. Margin of retailer	5.23 (10.86)	7.77 (14.43)	6.88 (13.62)	5.51 (10.35)	6.55 (12.72)	6.39 (12.43)
7. Consumer's price	48.15 (100.00)	53.70 (100.00)	50.55 (100.00)	53.34 (100.00)	51.50 (100.00)	51.44 (100.00)

(Figures in parentheses indicate percentages).

Source:- Appendices, II(a), II(b), II(c), II(d) and II(e).



Table-6: further indicates that the total expenses in marketing were Rs.11.35(23.16 per cent), Rs.10.67(19.87 per cent) , Rs.11.07 (21.90 per cent), Rs. 11.49(21.54 per cent) and Rs.10.50(20.39 per cent), respectively in Cuttack Sadar, Jagatsinghpur, Kendrapara, Athagarh and Banki while the marketing margins were Rs.11.50(23.88 per cent), Rs.14.58(27.15 per cent), Rs. 11.78(23.32 per cent) , Rs.12.19(22.85 per cent), and Rs.12.32 (23.92 per cent) respectively in the above places. In short, marketing margins exceeded the marketing costs(expenses) in all the markets. The table also explains that the net producer's share varied from Rs.25.50 to Rs.29.66, while the total marketing costs and margins varied from Rs.22.65 to Rs.25.25 per quintal of potato in a two- middlemen channel in Cuttack district.

In all the places, the producer's net share was on an average Rs.28.00 (54.43 per cent) per quintal of potato, while the total marketing costs and margins were Rs.23.44 (45.57 per cent). The marketing costs alone accounted for Rs.10.97 (21.82 per cent) and margins accounted Rs.12.47(23.75 per cent) per quintal of potato.

### Model- 3:

Table- 7 indicates that the producer's net share was Rs.38.10 (90.71 per cent) in Cuttack Sadar, Rs.39.59 (90.92 per cent) in Jagatsinghpur, Rs. 39.37 (91.56 per cent) in Kendrapara, Rs.40.75(91.57 per cent)

**Table- 7**  
**Analysis of marketing costs and margins of potato in Cuttack district:**

Sl. No.	Name of functionary/ share in consumer's price.	Cuttack	Sadar	Jagatsinghpur	Kendrapara	Athagarh	Banki	Average:
1.	Net share of producer	38.10 (90.71)	39.55 (90.92)	39.37 (91.56)	40.75 (91.57)	40.53 (92.11)	39.66 (91.38)	
2.	Expenses incurred by producer	1.90 (9.29)	3.95 (9.08)	3.63 (8.44)	3.75 (8.43)	3.47 (7.89)	3.74 (8.62)	
3.	Consumer's price	42.00 (100.00)	43.50 (100.00)	43.00 (100.00)	44.50 (100.00)	44.00 (100.00)	43.40 (100.00)	

(Figures in parentheses indicate percentages).

Source:- Appendices- III(a) , III(b), III(c), III(d) and III(e).

in Athagarh and Rs.40.53(92.11 per cent) in Banki per quintal of potato when the producer sold potato directly to the consumer. On an average the producer received Rs.39-66 (19.38 per cent) and expenses were Rs.3.74(8.62 per cent) per quintal of potato in Cuttack district.

In direct selling the producer has been benefited by an extra income of Rs.11.66 to Rs.12.97 per quintal of potato and the consumer has saved Rs.8.04 per quintal of potato in the respective local markets. Producer got an extra income as he stored potato for an additional period of about one month and sold potato in the local primary market himself. The consumer also saved money as he avoided the assistance of wholesalers and retailers. Inshort, both the producers and consumers were benefited as they successfully avoided the middlemen and therefore the total marketing expenses and margins which ought to be charged for each unit of potato, were distributed between the producer and consumer resulting in a profit or gain to both of them.

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## CHAPTER - IV(c):

### FLUCTUATIONS IN POTATO PRICES:

An attempt has been made in this chapter to analyse the fluctuations of prices of potato in the district of Cuttack during 1963-64 to 1975-76 . The trend, seasonal price fluctuations, cyclical fluctuations etc. of wholesale prices have been analysed in this chapter. This analysis has been made as it is an established fact that fluctuations of prices play an important role in guiding the traders, farmers and other interests to allocate their scarce resources and make rational decisions.

#### Fluctuations in potato prices:

The data on the index numbers of wholesale prices of potato are shown in table- 8 . The data clearly denote that annual prices of potato registered a rise by 55.47 per cent during the year 1964-65 over the previous year but it fell by 18.71 per cent during 1965-66 . The potato prices again increased during 1966-67 and 1967-78 by 16.51 per cent and 23.83 per cent respectively. Potato prices fell during 1969-70 by 17.59 per cent over the previous year and increased by 38.77 per cent in 1970-71. Potato prices again decreased by 12.11 per cent and 1.55 per cent during 1971-72 and 1972-73 respectively. The prices of potato registered a

**Table- 8:**

Average index number of wholesale prices of potato  
in Cuttack District.

(Base 1963-64= 100)

Year	Index number of wholesale price of potato	Percentage change over previous year.
1963-64	100.00	-
1964-65	155.46	+55.47
1965-66	126.34	- 18.71
1966-67	147.23	+ 16.51
1967-68	182.32	+ 23.83
1968-69	135.24	- 25.83
1969-70	111.45	- 17.59
1970-71	154.66	+ 38.77
1971-72	135.93	- 12.11
1973.73	133.81	- 1.55
1973.74	189.27	+ 41.44
1974.75	207.41	+ 9.58
1975.76	166.27	- 19.83

rise during 1973.74 and 1974.75 by 41.44 per cent and 9.58 per cent respectively in the Cuttack market. During 1975.76 potato prices decreased by 19.83 per cent over the previous period. This table clearly explains that potato prices fluctuated very frequently in the Cuttack market during 1963-64 to 1975-76

Potato prices increased for 6 years over the previous year and decreased also for 6 years over the previous years. The reason of fluctuations in potato prices might be due to general price level, potato prices in other neighbouring states, variations in potato production in the district and state and efficiency of Government cold storages in the state.

Tabbe- 9 which explains month-wise figure of change of wholesale prices shows that within a period of 13 years, the rise of wholesale price of potato(index number) increased each month by 0.84 indices. This is indicated by the least squares trend line fitted to the time series wholesale price data of potato for the period 1963-64 to 1975-76.

The trend equation for wholesale price of potato comes out to be:

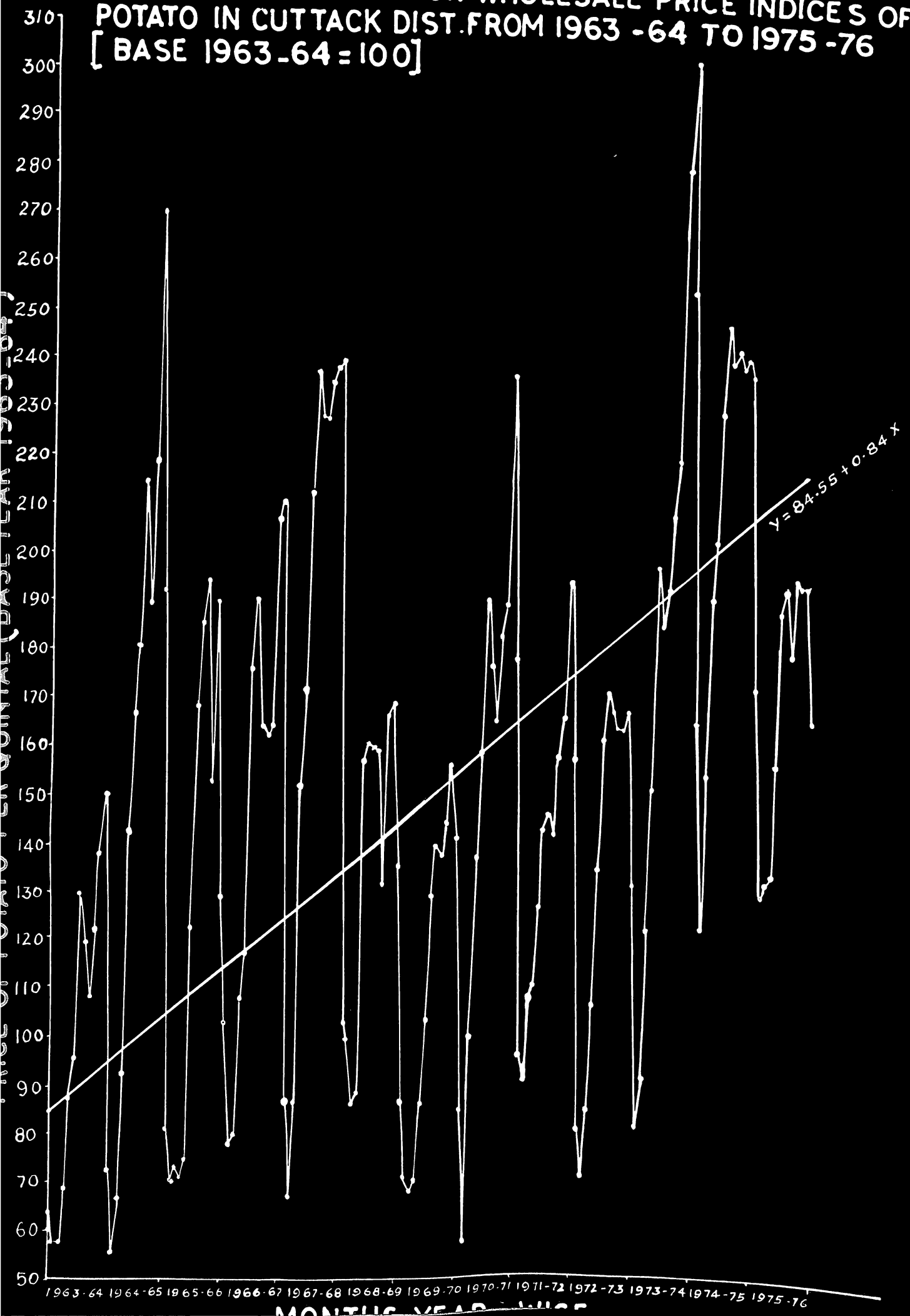
$$Y = 84.55 + 0.84 X$$

Where Y = Wholesale price of potato in rupees per quintal (expressed in index numbers, base 1963-64 = 100)

X = months.

The equation indicates that wholesale price of potato increased by 0.84 indices per month during 13 years . The secular rise in the wholesale price of

FIG.6. MONTHLY TREND LINE FOR WHOLESAL PRICE INDICES OF  
POTATO IN CUTTACK DIST.FROM 1963 -64 TO 1975 -76  
[ BASE 1963-64 = 100 ]



Month	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
Jan.	63.42	73.65	81.24	103.88	87.41	103.79	87.00	84.05	95.86	80.64	80.86	163.28	169.28
Feb.	57.47	56.31	70.24	78.36	67.40	100.41	71.59	57.70	90.80	70.83	90.50	120.56	126.57
March	57.86	67.26	73.19	80.94	87.25	86.92	68.61	99.54	107.47	84.05	120.58	151.46	129.73
April	60.61	92.79	71.59	108.25	152.47	88.99	70.99	136.73	109.60	105.71	148.92	188.79	130.62
May	87.96	142.93	75.48	117.72	171.50	157.27	86.09	158.57	126.48	143.96	196.59	200.70	153.15
June	95.54	166.97	122.59	176.46	213.56	161.07	103.40	190.66	142.08	160.75	183.11	223.49	184.99
July	129.91	180.58	168.68	190.78	237.87	160.10	129.94	176.60	145.56	170.67	190.85	246.36	189.70
Aug.	119.60	214.27	185.84	164.86	228.72	159.19	140.00	164.95	131.33	166.42	206.67	238.41	176.02
Sept.	108.37	189.36	194.41	162.48	228.29	132.02	137.74	182.68	157.11	163.26	217.77	240.96	191.85
Oct.	122.00	218.22	153.24	164.68	235.20	167.20	144.09	189.84	165.23	162.62	278.44	237.25	190.41
Nov.	138.83	270.21	190.57	207.34	238.83	129.25	156.67	236.80	192.77	166.51	302.76	238.72	190.41
Dec.	150.38	192.97	129.34	211.11	239.34	136.66	141.35	177.79	156.83	130.26	254.32	235.04	162.48
Average Annual	99.99	155.46	126.36	147.23	182.32	135.24	111.45	154.66	135.93	133.81	189.27	207.41	166.27
Range in monthly price indices	92.91	213.90	124.17	132.75	171.94	82.34	88.06	179.10	101.97	99.84	222.00	125.80	65.28
Percent- age change from trough to peak	161.66	379.86	176.77	169.41	255.10	94.74	128.34	310.39	112.30	140.95	274.88	104.34	51.57
Coefficient of variation	32.90	44.34	40.24	32.20	36.91	29.52	29.92	33.21	22.57	28.57	37.07	20.39	15.77

Source :- Appendix- IV.



potato over the period under consideration was due to the imbalances between the rate of growth in the demand and supply of potato. The rising trend indicates that the demand for potato was rising at a faster rate than the supply of potato. The other possible factors of rise in potato prices might be increasing per capita income, rapid growth of population, rapid pace of urbanisation, and insufficient storage facilities etc.

Table- 9 explains that the wholesale prices of potato were lower in the post-harvest season and higher in the pre-harvest season. It further explains that the range in monthly price indices was highest (222.00) in 1973-74 .Further the price variation of potato among different months during this year was maximum - as compared to other 12 years. This has occurred mainly due to high prices of potato during October, November and December. But the range of price variation was lowest (85 .28 ) in 1975-76 which indicated that the price tends to be stable due to more storage facilities in Government cold storages and higher production of potato in the state as well as in the district.

The percentage analysis of change of price of potato during a year is also presented in table-9. The seasonal price rise from trough (minimum level) to peak (maximum level) was lowest in 1975-76 (i.e. 51.57

per cent ) while it was as high as 379.86 per cent in 1964-65. The study also reveals that within a period of 13 years, the variation from trough to peak was more than 100 per cent in 11 years and less than 100 per cent in only 2 years . This indicates that price variations from trough to peak were more than 100 per cent during the major part of the period studied in Cuttack market due to its high perishability and lack of adequate storage facility at raders level and less number of cold storages (There were 2 Government cold storages, 4 Co-operative cold storages and only one private cold storage in Cuttack district during the study period. The total capacity of the cold storage was 3950 tonnes in the year 1975-76.) in the district.

The table also reveals that co-efficient of variation (C.V.) in wholesale price indices of potato varied from 15.77 per cent in 1975-76 to 44.34 per cent in 1964-65 within a period of 13 years . The C.V. was more than 20 per cent in 10 years and less than 20 per cent in only one year.

It can be concluded that neither the range in monthly price indices nor the co-efficient of variation followed a particular trend during the said period.

### Construction of seasonal index:

A periodic movement is one which recurs with some degree of regularity within a definite period. Therefore daily, weekly, monthly and annual periodic movements can be studied from timeseries data. But in this study only monthly seasonal index was constructed to know the inter-year movements.

In order to find out the seasonal index, the percentage of centered 12-month moving averages were found out. It is known that time series data are composed of  $T \times C \times S \times I$  (Trend, Cyclical, Seasonal and Irregular components) Therefore the following procedure was adopted to find out the seasonal index of potato .

$$1) \frac{T \times C \times S \times I}{T \times C} = S \times I$$

$$11) \frac{S \times I}{I} = S$$

where  $T \times C$  represented roughly the moving average which has been presented in Table-10 and Table-11 the arrays have been disseminated and irregular components have been excluded by excluding the highest and lowest value. Ultimately the seasonal index (S) has been estimated.

Table- 11 indicates the intra-year variation of wholesale prices of potato in Cuttack city market. It denotes that price of potato is below the district average

from January to May and it is above the district average from June to December. This proves that price of potato is comparatively less in the post-harvest season (January to May) and it is higher in the pre-harvest period (June to December) due to obvious reasons.

The table further explains that wholesale price of potato is lowest in February (45.47 per cent lower than the annual average) and highest in November (37.40 per cent higher than the district average). The reason is that February falls in the post-harvest period, when supply exceeds demand during this month and therefore price comes down. The opposite case happens for November when demand exceeds supply and price of potato therefore, is pushed up.

#### Cyclical Movements:

In order to study the cyclical movements in the wholesale price indices of potato, the seasonal index and trend value are to be eliminated from the monthly data and the irregular movements are to be smoothed. The following procedure was followed to find out the cyclical movements in the timeseries data.

$$1) \frac{T \times C \times S \times I}{S} = T \times C \times I$$

$$ii) \frac{T \times C \times I}{T} = C \times I$$

$$iii) \frac{C \times I}{I} = C$$

So the final result would be a set of adjusted data showing primarily the cyclical movements of the time

FROM 1962-63 to 1972-73 (base 1962-63 = 100)												
Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1963.64	-	-	-	-	-	-	129.26	118.66	107.15	118.98	131.18	135.35
1964.65	63.38	46.06	51.91	67.75	97.60	108.64	115.92	136.76	120.23	139.11	176.41	129.93
1965-66	55.58	48.61	50.99	50.41	55.91	95.02	132.50	144.52	150.41	116.88	141.80	93.46
1966.67	73.38	55.33	58.06	78.13	84.25	122.69	130.18	113.38	111.89	111.79	136.93	136.04
1967.68	55.08	41.26	51.71	87.42	95.99	117.89	129.98	123.59	122.46	128.00	132.30	134.65
1968.69	60.23	60.42	54.56	58.38	107.21	115.45	119.00	120.02	101.03	129.45	134.92	113.81
1969.70	74.73	62.60	60.38	62.87	77.15	92.94	116.71	126.54	123.71	124.90	129.35	110.61
1970-71	63.02	42.32	71.48	95.59	106.93	120.50	113.83	105.05	115.08	120.20	152.32	116.89
1971.72	64.43	61.97	74.39	76.98	90.66	103.86	107.59	105.61	119.46	126.25	146.66	117.85
1972.73	59.78	51.75	63.11	66.42	104.99	119.15	127.55	123.61	119.19	115.90	115.39	88.36
1973.74	55.62	59.65	77.46	91.59	113.41	99.44	99.01	104.68	108.90	137.41	147.86	122.99
1974.75	77.39	56.17	69.84	87.36	94.80	109.25	118.63	114.53	116.11	118.01	119.49	119.90
1975-76	88.21	67.70	71.17	73.26	87.85	109.27	-	-	-	-	-	-

The actual values of 12 month moving averages have been presented.  
in Appendix- V

Rank	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1.	88.21	67.70	77.46	95.59	113.41	122.69	132.50	144.52	150.41	139.11	176.41	136.04	
2.	77.39	62.60	74.39	91.49	107.21	120.50	130.18	136.76	123.71	137.41	152.32	135.35	
3.	74.73	61.97	71.48	87.42	106.93	119.15	129.98	126.54	122.46	129.45	147.86	134.65	
4.	73.38	60.42	71.17	87.36	105.99	117.89	129.36	123.61	120.23	128.00	146.66	129.93	
5.	64.43	59.65	69.84	78.13	97.60	115.45	127.55	123.59	119.46	126.25	141.80	122.99	
6.	63.38	56.17	63.11	76.98	95.99	109.27	119.00	120.02	119.19	124.90	136.93	119.90	
7.	63.02	55.33	60.38	76.42	94.80	109.25	118.63	118.66	116.11	120.20	134.92	117.85	
8.	60.23	51.75	58.06	73.26	90.66	108.64	116.71	114.53	115.08	118.98	132.30	116.89	
9.	59.78	48.61	54.56	67.75	87.85	103.86	115.92	113.38	111.89	118.01	131.18	113.81	
10.	55.62	56.06	51.91	62.87	84.25	99.44	113.83	105.61	180.90	116.88	129.35	110.61	
11.	55.58	42.32	51.71	58.38	77.15	95.02	107.59	105.05	107.15	115.90	119.59	93.46	
12.	55.08	41.26	50.99	50.41	55.91	92.94	99.01	114.68	101.03	111.79	115.39	88.36	
Total of middle Ten	647.54	544.88	626.61	760.06	947.43	1098.47	1208.75	1187.75	1164.18	1235.98	1372.81	1195.44	
Mean of middle Ten	64.75	54.49	62.66	76.00	94.74	109.85	120.87	118.77	116.42	123.59	137.28	119.54	99.91
Seasonal Index.	64.80	54.53	62.71	76.06	94.82	109.94	120.97	118.87	116.52	123.70	137.40	119.64	100.00
		<u>95.17</u> 100.00											

Series, which would mean the oscillatory movement in a time series, the period of oscillation being more than a year. Of course the cyclical fluctuations are not necessarily periodic since the length of the cycle as also the intensity of fluctuations may change from one cycle to another. However the cyclical movements can indicate prosperity and depression in business.

Appendix- VI explains the deseasonalised index number, trend value, seasonal index, cyclical irregular and cyclical variations for the entire period of 13 years under study. The seasonal index indicated the seasonality in potato prices and there by cautions the farmers, traders and consumers the role of time and season factor in the prices of potato.

The deseasonalised data help in studying a time series data undisturbed by seasonal variations and the trend value actually helps in knowing the trend ( rise or fall ) of prices of potato in Cuttack. Col. 5 of appendix -VI indicates that prices of potato had an upward trend in Cuttack.

After smoothing out the irregular variations, the cyclical percentages were known. But the column-8 of Appendix - VI indicates that potato had no constant cycle over a period of 13 years in Cuttack market.

The reason is that potato is not a controlled commodity. The entire trade is carried out by the middlemen and the state Government has practically no control over the trade. Perishability of potato is a boon to the middlemen, because in the name of its perishability the middlemen increase the potato prices at their whims. Moreover import and export potentials of potato in the Cuttack city market vary widely each year. ( The Cuttack market imports potato from West Bengal, Tamil Nadu, Uttar Pradesh, Bihar and Himachal Pradesh and exports potato to other districts of Orissa such as Puri, Bhanakal



and Balasore ). Possibly for this reason no constant cycle was observed.

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## CHAPTER - IV (a)

### PROFITABLE STORAGE SEASON:

Storage performs a very vital function in the marketing process because of the fact that while the production of potato is seasonal, its consumption is for all the year round. Storage of potato is essential for food and seed purposes. It adds time utilities to the commodities. Generally the producers, traders, wholesalers and the cold storage owners store potato for an expected increase in price of potato. The increase in price of potato through time is usually fairly close to storage costs, in keeping with Marshallian cost theory, but may greatly exceed or fall far short of them because of imperfect knowledge. Because of seasonal fluctuations in price, sometimes quite large, the traders make enormous profits from their storage operations at the expense of farmers and consumers. Traders can not predict with accuracy when prices are at their bottoms or at peaks. Hence in the present analysis an attempt has been made to find out the most profitable storage period for potato in Cuttack market.

Therefore in the present study the following few assumptions were made in order to analyse the storage period in potato business.

1. A number of producers, traders, wholesalers and retailers hold stocks as their off time business. They invest their idle money in order to get profit in future. These traders do not consider storage cost, risk and uncertainty involved in storing the commodities. They sell their stock at higher prices, and are satisfied by comparing the sale price with purchase price.

2. Other traders, wholesalers and cold storage owners invest money for purchase of potato, spend money for storage and face storage loss, take up risk and uncertainty in business. They store potato in the Government cold storages. These middlemen consider storage as a business.

Therefore two studies were made for analysing the profitable storage period for potato in Cuttack market.

These are:-

1. Middlemen who only consider purchase price and sale price and do not consider storage cost etc.
2. Middlemen who store potato in the Government cold storage and consider storage as a business.

Therefore in the present study 4x4 (=16) alternative assumptions were made to find out the best period for obtaining the highest profit in the potato storage operations. The base months were assumed to be February, March, April, and May and the terminal months of storage period were assumed to be August, September, October and November. The following diagram indicates the alternative assumptions made in this study.

Alternative assumptions of storage period:

Base months of the  
storage period

Terminal months of  
the storage period.

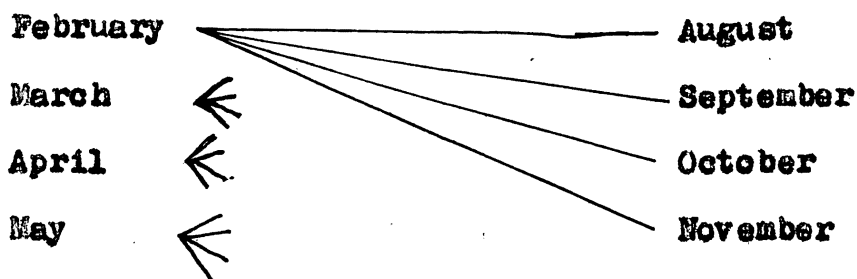


Table- 12 indicates the seasonal increase in price expressed as percentage of purchase price under alternative assumptions of storage period in Cuttack market from 1972-73 to 1975-76. It indicates that among 16 alternative assumptions of storage period, potato stored in February gave highest return if sold

in the month of October in the Cuttack wholesale market. But if potato is stored either in March or April or May, it gave highest money return if the stock was disposed of in the month of November.

However, the study reveals that February storing of potato yielded maximum profit if the stock was disposed of in the month of October in Cuttack market when the storage cost was not taken into account.

But since this finding does not rest upon sound economic practice, storage cost must be included while calculating profits in storage. Necessarily potato storage involved several types of costs. They include the following:

- (a) Losses in storage
- (b) Interest on the value of the stored potato.
- (c) Operation of the storage facilities including handling (in and out) and protection costs.
- (d) Rent of cold storage
- (e) Depreciation of gunny bags etc.

Table- 13 presents seasonal increase in price expressed as percentage of expected price under alternative assumption of storage period in Cuttack market. Table- 13 deals seasonal increase in price

----- assumptions of storage period in Cuttack Market (1972.73 to 1975.76). -----

$t_0$  February

$t_0$  March

$t_0$  April

$t_0$  May

Year	Aug.	Sept.	Oct.	Nov.	Aug	Sept.	Oct.	Nov.	Aug.	Sept.	Oct.	Nov.	Aug	Sept.	Oct.	Nov.
1972.73	134.93	130.48	129.57	35.06	97.98	94.23	93.46	96.13	57.42	54.43	53.82	57.50	15.60	13.40	12.96	15.66
1973.74	128.35	140.61	208.08	234.52	71.39	80.59	131.24	151.08	38.78	46.22	87.23	103.30	5.13	10.77	41.83	54.00
1974-75	98.08	99.86	96.79	98.00	56.67	59.09	56.64	57.61	26.49	27.63	25.67	26.44	18.98	20.05	18.21	18.94
1975.76	39.06	51.57	50.43	50.43	35.66	47.88	46.77	46.77	34.75	46.87	45.77	45.77	14.93	25.26	24.32	24.32
Average	100.10	105.63	121.22	104.50	65.66	70.45	82.03	87.89	39.36	43.79	53.12	58.25	13.66	17.35	24.33	28.23

Notes:-  $t_0$  refers to base period of assumed storage season. August, September, October and November are terminal months of assumed storage season.  
for example, First 4 columns shown by what percent price in August, September, October and November is higher than in February.

Seasonal increase in price expressed as percentage of expected price (Potato being stored in Government cold storage only under alternative assumptions of storage period in Outtack market.

(1972-73 to 1975-76.)

$t_0$  February

$t_0$  March

$t_0$  April

$t_0$  May.

Year	Aug.	Sept.	Oct.	Nov.	Aug.	Sept.	Oct.	Nov.	Aug.	Sept.	Oct.	Nov.	Aug.	Sept.	Oct.	Nov.	Nov.
1972.73	37.56	26.06	19.81	15.42	31.09	20.28	12.53	10.26	17.60	8.33	1.68	-	1.81	-4.88	-6.69	-15.53	-17.75
1973.74	44.57	43.41	75.94	80.88	23.79	23.44	49.98	56.79	9.92	9.96	34.01	38.53	-10.38	-8.97	12.34	16.17	
1974-75	35.38	29.62	22.88	17.85	18.93	14.26	7.38	4.35	3.43	-1.92	-6.01	-9.46	1.63	-3.11	-9.84	-13.46	
1975.76	-5.07	-1.82	-5.62	-10.64	-1.62	1.53	-4.32	-7.21	3.60	6.60	0.19	-5.07	-5.40	-1.28	-7.93	-11.62	
Average	28.11	24.32	28.25	25.88	18.05	14.88	19.52	16.05	8.64	5.74	7.47	5.55	-4.77	-5.01	-5.24	-6.66	

Note:-  $t_0$  refers to base period or assumed storage season August, September October, and November are terminal months for assumed storage season For example: First 4 columns show by what percent price in August, September, October and November is higher than that in February and computed cost of storage over time.

expressed as percentage of expected price when the stock was stored in the cold storage. In this analysis storage cost was taken into account. Under assumptions of perfect competition, the seasonal rise in prices are just equal to the computed cost of storage.

The actual seasonal price increase in Cuttack market may be computed in the following manner.

$$E(P_{t_1}) = P_{t_0} + t (R+I+L+D) + W$$

P = Price of one quintal of potato stored.

E(P) = Expected price per quintal of potato stored.

t = time (in month, i = 0 to 12 months)

R = Cold storage rent per quintal of potato stored.

I = Interest on capital needed for the purpose of one quintal of potato for storage.

L = Quantity lost over time.

D = Depreciation on gunny bags.

W = Charges for weighing, stocking, loading, unloading etc. and other charges which do not vary with the length of storage period.

$$SRP_{t_1} = P_{t_1} - E(P_{t_1})$$

$SRP_{t_1}$  = Net seasonal increase in price at period  $t_1$ . Under assumptions of perfect competition  $SRP_{t_1}$  will be equal to Zero.



The result of analysis have been presented in table- 13 .This table shows great variations in the profit margins in potato storage.

It was found that potato storage gave high percentage of profit in Outtaq if potato stored in February and is released in October. In this case profit over expected price was <sup>as</sup> high as 28.25 per cent.

March storing of potato yielded the highest profit (i.e. 19.52 per cent) over the expected price if the stock was released in the month of October.

April storing of potato yielded the highest profit (i.e 9.64 per cent) over the expected price if the stock was released in the month of August.

But if potato was stored in the month of May and sold either in August or September or October or November, the result was dissappointing. It resulted in losses to the business men.

Therefore, it can be concluded that potato should be procured in the month of February and should be stored immediately in the cold storage . The stock should be released in the month of October for getting maximum net profit from the storage operations.

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**CHAPTER — V**

**SUMMARY AND CONCLUSION**

## **CHAPTER - V**

### **SUMMARY AND CONCLUSION**

The history of marketing research dates back to 1919 when C. S. Duncan published his first book entitled "Commercial Research : An outline of working Principles " in New York. The scope of marketing research has been increased in recent years. Lester Guest was the first researcher who received his Ph. D. from Maryland University in this new field in 1941. In U. S. A., marketing research has accounted for expenditures ranging from a low estimate of \$200 million to a high of \$ 450 million a year. In 1967 the expenditure on market research accounted for \$ 500 million in U. S. A. It is a fact that market research is growing more rapidly than the economy in general. Since 1940, market research has grown almost 18 times in 1965, while the G.N.P. has grown only 6 times during this period (1940-65) in the U. S. A. But in the seventies, market research is mostly neglected in the State of Orissa. There is no market research departments in this State. Therefore research in the field of Agricultural marketing have not been carried out extensively. In order to study the market behaviour, organisation and structure of markets in the state an attempt was made to study only one perishable commodity which would probably highlighten the market activities of the State. For this reason a research topic entitled " Marketing of potato in Cuttack district" was undertaken by the researcher.

The summary of the important findings are presented here with an appraisal of the over all performances of the marketing system in Cuttack District.

**1. Market channel :**

Potato marketing in Cuttack district is carried out by a large number of intermediaries. Moreover the Government and the Co-operatives are engaged in this trade. The facilitating organisations such as cold storages, traders godowns and transport authorities are also participating in potato marketing.

The study of market channel of potato indicates that generally 3 or less number of intermediaries form the market channel.

**2. Marketing cost and price spread in Potato marketing :**

The marketing costs and margins were studied on the basis of primary data collected under 3 models.

(a) Model -1 : Market channel having 3 middlemen.

Producer-village trader- wholesaler-  
retailer- consumer.

(b) Model - 2 : Market channel having 2 middlemen.

Producer - Trader- retailer- consumer.

(c) Model - 3 : Market channel having no middlemen.

Producer - consumer.

The marketing cost per quintal potato was 51.09% in Cuttack Sadar, 50.62 per cent in Jagatsinghpur, 47.60 per cent in Kendrapara, 46.60 per cent in Athagarh and

44.76 per cent in Banki under Model -1 , while the producer's share was 48.91 per cent, 49.38 per cent, 52.40 per cent, 53.34 per cent and 55.24 per cent in Cuttack Sadar, Jagatsinghpur, Kendrapara, Athagarh and Banki respectively.

In Model- 2, the marketing cost and producer's share were 47.04 per cent and 52.96 per cent in Cuttack Sadar, 47.02 and 52.98 per cent in Jagatsinghpur, 45.21 and 54.79 per cent in Kendrapara, 44.39 and 55.61 per cent in Athagarh and 44.31 and 55.69 per cent in Banki.

But in Model-3, marketing cost and producer's share per quintal of potato were 9.29 per cent and 90.71 per cent in Cuttack Sadar, 9.08 per cent and 90.92 per cent in Jagatsinghpur, 8.44 per cent and 91.56 per cent in Kendrapara, 7.89 per cent and 92.11 per cent in Banki and 8.43 per cent and 91.57 per cent in Athagarh during 1976. The study revealed that producer received more amount of money when he sold directly to the consumer in the Local markets. The study further emphasized that with decrease in number of intermediaries, the producer's share in the consumer's rupee increased in all the markets in Cuttack district.

The average marketing cost per quintal of potato was Rs.14.17 ( 27.54 per cent ) in Model-1, Rs.10.97 (21.82 per cent ) in model-2 and Rs.3.74 ( 8.62 per cent ) in Model-3

in 1976 in the markets of Cuttack district, while the producer's share was Rs. 26.69 (51.89 per cent), Rs. 28.00 (54.43 per cent) and Rs. 39.66 (91.38 per cent) respectively in Model - 1, Model - 2 and Model - 3.

**Fluctuations in Potato prices :**

The analysis of fluctuations in potato prices in Cuttack district indicates that wholesale price had a continuous rise of 0.84 indices per month. The variation of prices from trough to peak was more than 100 per cent during the major part of the study period i.e. 1963-64 to 1975-76. This indicates that the capacity of the cultivators to postpone the sale of potato is much less in Cuttack district. The reasons may be many. Absence of cold storage facility at producer's level, absence of storage facility at farm level, high perishability of the produce and immediate cash needs of the farmers are the important factors for which potato is sold by the farmers in the post-harvest season.

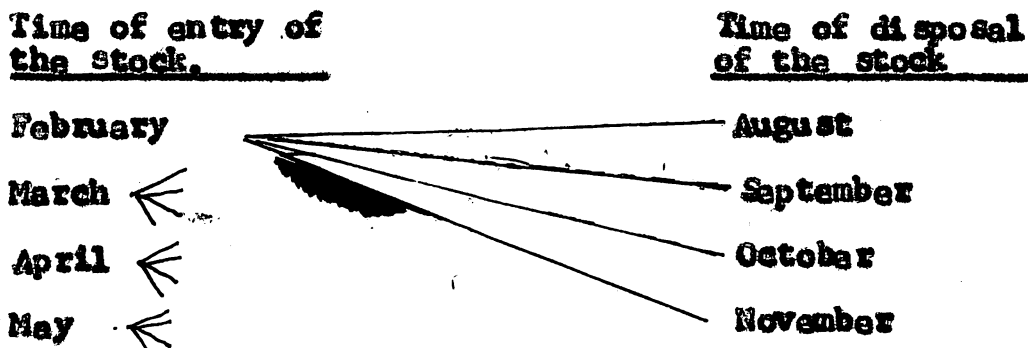
Price of potato is less in the post-harvest season (January to May) and more in the pre-harvest season (June to December). Price of potato is lowest in February and highest in the month of November. There was no constant cycle for potato price in Cuttack district. Perhaps this happened due to the fact that potato is not a controlled (free) commodity and the entire trade is carried out by the middlemen. Moreover potato is a perishable

commodity and there is no sufficient storage facility for the produce.

**Profitable storage season :**

The study revealed that profit in storage depended upon the period of storage, time of entry and disposal of the stock. The other important factors was purchase price and sale price of potato in local market. The relevant data under alternative assumptions of arrival and disposal of potato in the Cuttack City market, show wide variations in profit margins. For this reason, (4 x 4) = 16 alternative assumptions were made for calculating the trader's margin. This can be explained as follows :

**Alternative assumptions of storage period.**



It can be indicated that potato stored in February in the cold storage and disposed of in the month of October gave the highest profit to the traders.

## CONCLUSION

Thus it is seen that the hypotheses laid down in this study have been amply proved. The potato markets in the district is highly unorganised and there are regional price disparities due to transport bottlenecks. Because potato is a perishable agricultural produce, the producers give priority to dispose of the produce in the post-harvest season, for which supply exceeds demand and prices come down. For this reason, traders get better chances to purchase huge quantities of potato in a small period. They only store the produce for a long<sup>er</sup> period ( say a period of 4-6 months ) in the cold storages but they get maximum profit in the business, the profit is more than 100 per cent in majority of the years. ( The study indicates that variation in wholesale price indices of potato is more than 100 per cent in 11 years out of 13 years studied in the Guttaek market ).

Therefore it can be said that Government should undertake potato marketing itself and sell potato to the consumers in the Fair Price Shops, so that the monopoly activities of the traders can be checked and there can be stabilization of potato prices in the district and in the state. This does not imply that private trade in potato will be completely eliminated. Licensed traders should be allowed to undertake the business at the Government approved



price structure. In addition to this, the State Government can have a Central Market Agency which can correctly estimate the stock position in different market centres and can provide accurate market informations in regard to crop outlook and stock position, so that a great deal of uncertainty in price structure can be removed.

✓ Another positive step in which Government can effectively intervene is the improvement of cold storage facilities in different market centres and producing areas . Unless there is a net work of cold storages both in the producing and consuming areas, potato production can not experience rapid technological break through. If the farmers do not get adequate netprofit in potato production, (the profit in potato production mostly depends upon it sale price which again depends upon the time of sale of potato), then there may be a severe set back in the potato cultivation in the State. Therefore cold-storage should be given top priority in the Government budget of the State Government.

Finally, the number of intermediaries has to be reduced in order to reduce the marketing cost and provide benefit both to producer and consumer. The monopoly activities of few commission men and wholesalers have to be

checked by the Government interference especially by suitable market legislation. The Government should not stand as an onlooker in potato marketing but it is essential that Government should be directly involved in this trade.

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## **APPENDICES**

APPENDIX - I (a):(Model-1)Marketing costs and Margins of Potato inCuttack sadar Sub-Division:

Sl. no.	Item	Rs./ quintal	Percentage on consumer's price.
-----			
1.	Expenses incurred by producer.		
(a)	Grading charges .	0.50	
(b)	Filling ,stiching and weighment charges	0.45	
(c)	Loss in storage(2 per cent) in 15 days	0.50	
	Total expenses incurred by producer	1.45	3.01
2.	Price at the producer level	25.00	
3.	Net share of the producer	23.55	48.91
4.	Expenses incurred by village trader		
(a)	Interest on borrowed capital @ 14 per cent for 3 months	0.87	
(b)	Filling, stiching and weighment charges	0.45	
(c)	Transport charges	1.00	
(d)	Loading and unloading charges	0.70	
(e)	Storage charge	0.25	
	Total expenses incurred by the village trader.	3.27	6.79
5.	Price at the village trader level	31.50	



Sl. No.	Item	Rs./ quintal	percentage on consumer's price.
6.	Margin of the village trader	3.23	6.72
7.	Expenses incurred by wholesaler		
	(a) Weighment charges	0.20	
	(b) Loading and unloading charges	0.60	
	(c) Loss of gunny bag	0.25	
	(d) Storage charge	0.25	
	(e) Storage loss(2 per cent)	0.62	
	(f) Income tax	0.12	
	(g) Interest on capital invested @ 14 per cent for 3 months	1.05	
	Total expenses incurred by wholesaler	<u>4.09</u>	8.49
8.	Price at the wholesaler level	38.50	
9.	Margin of the wholesaler	2.91	6.04
10	Expenses incurred by the retailer.		
	(a) Weighment ,loading and unloading charges.	0.50	
	(b) Transport charges by Rickshaw	1 .25	
	(c) Depreciation charges for gunny bags	0.80	
	(d) Loss in transit	0.58	
	(e) Interest on capital invested @ 14 per cent for 3 months	<u>1.30</u>	
	Total expenses incurred by the retailer	<u>4.43</u>	9.20
11.	Price at retailer level	48.15	
12.	Margin of retailer	5.22	10.84
13.	Consumer's price	48.15	100.00

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APPENDIX - I(b):

Marketing costs and margins of potato in Jagatsinghpur

Sub-Division:

Sl. No.	Item	Rs./ quintal	percentage on consumer's price.
(1) - - - - -	(2) - - - - -	(3) - - - - -	(4) - - - - -
1.	Expenses incurred by producer		
(a)	Grading charges	0.50	
(b)	Filling, stitching and weightment charges	0.45	
(c)	Loss in storage (2 per cent) in 15 days	<u>0.56</u>	
	Total expenses incurred by producer	1.51	2.81
2.	Price at the producer level	28.00	
3.	Net share of the producer	26.49	49.38
4.	Expenses incurred by village trader		
(a)	Interest on borrowed capital @ 14 per cent for 3 months	0.98	
(b)	Filling ,stiching and weightment charges	0.45	
(c)	Transportationcharge	1.42	
(d)	Loading and unloading charges	0.70	
(e)	Storage charge	<u>0.25</u>	
	Total ex_penses incurred by gillage trader	3.80	7.07
5.	Price at the village trader level	35.80	



APPENDIX- I(c):Marketing costs and margins of potato in Kendrapara :Sub-Division:

S1. No.	Item	Rs./ quintal	Percentage on consumer's price.
(1)	(2)	(3)	(4)
1.	Expenses incurred by producer		
(a)	Grading charges	0-50	
(b)	Filling, stitching and weighment charges	0.45	
(c)	Loss in storage	<u>0.56</u>	
	Total expenses incurred by producer	1.51	2.99
2.	Price at the producer level	28.00	
3.	Net share of the producer	26.49	52.40
4.	Expenses incurred by village trader		
(a)	Interest on borrowed capital @ 14 per cent for 3 months	0-98	
(b)	Filling, stitching and weighment charges	0.45	
(c)	Transport charges by cart	1.00	
(d)	Loading and unloading charges	0.50	
(e)	Storage charges	<u>0.20</u>	
	Total expenses incurred by village trader	3.13	6.19
5.	Price at the village trader level.	34.50	
6.	Margin of the village trader	3.37	6.67

(1) \_ \_ \_ \_ \_ (2) \_ \_ \_ \_ \_ (3) \_ \_ \_ \_ \_ (4) \_ \_ \_ \_ \_

7. Expenses incurred by wholesaler

(a) Weighment charges	0.20	
(b) Loading and unloading charges	0.40	
(c) Loss of gunny bag	1.25	
(d) Transportation charges	1.00	
(e) Storage charge	0.20	
(f) Storage loss( 2 per cent)	0.68	
(g) Income tax	0.10	
(h) Interest on capital invested		

    @ 14 per cent for 3 months      1.20

Total expenses incurred by

wholesaler	5.03	9.95
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8. Price at the wholesaler level	41.65	
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9. Margin of the wholesaler	2.12	4.19
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10. Expenses incurred by the  
retailer

(a) Weighment, loading and unloading charges	0.50	
(b) Transport charges	0.75	
(c) Depreciation charges for gunny bags	0.80	
(d) Loss in transit	0.63	
(e) Interest on capital invested		
@ 14 per cent for 3 months	<u>1.40</u>	

Total expenses incurred by the

retailer	4.08	8.07
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11. Price at retailer level	50.55	
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12. Margin of retailer	4.82	9.54
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13. Consumer's price	50.55	100.00
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APPENDIX- I(d):Marketing costs and margins of potato in Athagarh:Sub- Division:

Sl. No.	Item	Rs./ quintal	Percentage on consumer's price.
-----			
1.	Expenses incurred by producer		
(a)	Grading charges	0.50	
(b)	Filling ,stiching and weighment charges	0.45	
(c)	Loss in storage(2 per cent ) in 15 days	<u>0.60</u>	
	Total expenses incurred by producer	1.55	2.91
2.	Price at the producer level	30.00	
3.	Net share of the producer	28.45	53.34
4.	Expenses incurred by village trader		
(a)	Interest on borrowed capital @ 14 per cent for 3 months	1.05	
(b)	Filling, stiching and weighment charge	0.45	
(c)	Transport charges	1.14	
(d)	Loading and unloading charges	0.70	
(e)	Storage charge	<u>0.15</u>	
	Total expenses incurred by village trader	3.49	6.53
5.	Price at the village trader level	37.24	
6.	Margin of the village trader	3.75	7.03
7.	Expenses incurred by wholesaler		

(1) _____	(2) _____	(3) _____	(4) _____
(a) Weighment charges	0.20		
(b) Loading and unloading charges	0.40		
(c) Transport charge	0.80		
(d) Loss of gunny bag	1.25		
(e) storage charge	0.20		
(f) Storage loss(2 per cent)	0.74		
(g) Income Tax	0.10		
(h) Interest on capital invested			
@ 14 per cent per 3 months	<u>1.30</u>		
Total expenses incurred by wholesaler	4.99	9.36	
8. Price at the wholesaler level	44.33		
9. Margin of the whole saler	2.10	3.94	
10. Expenses incurred by the wholesaler			
(a) Weighment, loading and unloading charges	0.45		
(b) Transport charges	1.00		
(c) Depreciation charges for gunny bag	0.80		
(d) Loss in transit	0.67		
(e) Interest on capital invested			
@ 14 per cent for 3 months	<u>1.59</u>		
Total expenses incurred by the retailer	4.51	8.46	
11. Price at retailer level	53.34		
12. Margin of retailer	4.50	8.43	
13. Consumer's price	53.34	100.00	

APPENDIX- I(e):Marketing costs and margins of potato in Banki:Sub-Division:

Sl. No.	Item	Rs./ quintal	Percentage on consumer's price.
-----			
1.	Expenses incurred by producer		
(a)	Grading charges	0-50	
(b)	Filling, stitching and weighment charges	0.45	
(c)	Loss in storage (2 per cent) in 15 days	<u>0.60</u>	
	Total expenses incurred by producer	1.55	3.01
2.	Price at the producer level	30.00	
3.	Net share of the producer	28.45	55.24
4.	Expenses incurred by village trader		
(a)	Interest on borrowed capital @ 14 per cent for 3 months	1.05	
(b)	Filling, stitching and weighment charges	0.45	
(c)	Transport charges	0.45	
(d)	Loading and unloading charges	0.80	
(e)	Storage charge	<u>0.20</u>	
	Total expenses incurred by village trader	2.95	5.73
5.	Price at the village trader level	36.00	
6.	Margin of the village trader	3.05	5.92



(1) \_ \_ \_ \_ \_ (2) \_ \_ \_ \_ \_ (3) \_ \_ \_ (4) \_ \_ \_

7. Expenses incurred by wholesaler.

(a) Weightment charges	0.20	
(b) Loading and unloading charges	0.40	
(c) Transportation charge	0.75	
(d) Loss of gunny bag	1.25	
(e) storage charge	0.20	
(f) storage loss( 2 per cent)	0.72	
(g) Income tax	0.12	
(h) Interest on capital invested		
@ 14 per cent for 3 months	<u>1.22</u>	
Total expenses incurred by wholesaler	4.86	9.44

8, Price at the wholesaler level 42.85

9. Margin of the wholesaler 1.99 3.86

10. Expenses incurred by the wholesaler

(a) Weightment, loading and unloading charges	0-50	
(b) Transport charges	0-75	
(c) Depreciation charges for gunny bag	0.80	
(d) Loss in transit	0.63	
(e) Interest on capital invested		
@ 14 per cent for 3 months	<u>1.45</u>	

To al expenses incurred by the

retailer 4.13 8.02

11. Price at retailer level 51.50

12 Margin of retailer 4.52 9.78

13 Consumer's price 51.50 100.00

APPENDIX- II(a):Marketing costs and margins of potato in Cuttack SadarSub-Division:

Sl. No.	Item	Rs / quintal	Percentage on consumer's price
-----			
1.	Expenses incurred by producer		
(a)	Grading charges	0.50	
(b)	Filling, stitching and weightment Charges	0.45	
(c)	Loss in storage (2 per cent) in 15 days	0.55	
(d)	Transport charges	<u>0.50</u>	
	Total expenses incurred by the producer	2.00	4.15
2.	Price at the producer level	27.50	
3.	Net share of the producer	25.50	52.96
4.	Expenses incurred by the trader		
(a)	Interest on borrowed capital @ 14 per cent for 3 months	0.98	
(b)	Filling stitching and weightment charge	0.45	
(c)	Transport charges	1.00	
(d)	Loading and unloading charges	0.80	
(e)	Storage charges	1.25	
(f)	Loss of gunny bags	<u>1.25</u>	
	Total expenses incurred by the trader	4.73	9.83
5.	Price at the trader level	38.50	
6.	Margin of the trader	6.27-	13.02
7.	Expenses incurred by the retailer		

(1) _ _ _ _ _	(2) _ _ _ _ _	(3) _ _ _ _ _	(4) _ _ _ _ _
(a) Weighment, loading and unloading charges	0.50		
(b) Transport charges	1.25		
(c) Depreciation charges for gunny bags	0.80		
(d) Loss in transit	0.57		
(e) Interest on capital invested			
@ 14 per cent for 3 months		<u>1.30</u>	
Total expenses incurred by the retailer	4.42	9.18	
8. Price at retailer level	48.15		
9. Margin of retailer	5.23	10.86	
10. Consumer's price	48.15	100.00	

APPENDIX- II(b):Marketing costs and margins of potato in:Jagatsinghpur Sub-Division:

Sl. No.	Item	Rs. <del>Rs.</del>	percentage quintal on consumer's price.
-----			
1.	Expenses incurred by producer.		
(a)	Grading charges	0.50	
(b)	Filling, stitching and weightment charges	0.45	
(c)	Loss in storage (2 per cent) in 15 days	0.60	
(d)	Transport charge	1.00	
	Total expenses incurred by the producer	2.55	4.75
2.	Price at the producer level	31.00	
3.	Net share of the producer	28.45	52.98
4.	Expenses incurred by the trader		
(a)	Interest on borrowed capital		
	@ 14 per cent for 3 months	0.94	
(b)	Filling, stitching and weightment charges	0.45	
(c)	Loading and unloading charges	0.80	
(d)	Storage charges	0.25	
(e)	Loss of gunny bags	1.25	
	Total expenses incurred by the trader	3.69	6.87
5.	Price at the trader level	41.50	
6.	Margin of the trader	6.81	12.68
7.	Expenses incurred by the retailer		

(1) _ _ _ _	(2) _ _ _ _	(3) _ _ _ _	(4) _ _
(a) Weighment, loading and unloading charge	0.50		
(b) Transport charges	1.25		
(c) Depreciation charges for gunny bags	0.80		
(d) Loss in transit	0.58		
(e) Interest on capital invested			
@ 14 per cent for 3 months	<u>1.30</u>		
Total expenses incurred by the retailer	4.43	8.25	
8. Price at retailer level	53.70		
9. Margin of retailer	7.77	14.47	
10. Consumer's price	53.70	100.00	

APPENDIX - II(c):Marketing costs and margins of potato inKendrapara Sub-Division:

Sl. No.	Item	Rs./ quantal	Percentage on consumer's price.
-----			
1.	Expenses incurred by producer .		
(a)	Grading charges	0.50	
(b)	Filling, stitching and weightment charges	0.45	
(c)	loss in storage (2 per cent) in 15 days	0.60	
(d)	Transport charges	<u>0.75</u>	
	Total expenses incurred by the producer.	2.30	4.55
2.	Price at the producer level	30.00	
3.	Net share of the producer	27.70	54.79
4.	Expenses incurred by the trader		
(a)	Interest on borrowed capital @ 14 per cent for 3 months	1.05	
(b)	Filling, stitching and weightment charges	0.45	
(c)	Transport charges	0.75	
(d)	Loading and unloading charges	0.80	
(e)	Storage charges	0.25	
(f)	Loss of gunny bags	<u>1.25</u>	
	Total expenses incurred by the trader	4.55	9.00
5.	Price at the trader level	39.45	

(1) _ _ _ _ _	(2) _ _ _ _ _	(3) _ _ _ _ _	(4) _ _ _
6. Margin of the trader	4.90		9.69
7. Expenses incurred by the retailer .			
(a) Weighment ,loading and unloading charges	0.50		
(b) Transport charges	1.00		
(c) Depreciationcharges for gunny bags	0.80		
(d) Loss in transit	0.60		
(e) Interest on capital invested @ 14 per cent for 3 months	<u>1.32</u>		
Total expenses incurred by the retailer	4.22		8.35
8. Price at retailer level	50.55		
9. Margin of retailer	6.88		13.62
10. Consumer's price	50.55		100.00

APPENDIX- II(d):Marketing costs and margins of potato in Athagarh:Sub-Division:

Sl. NO.	Item	Rs./ quintal	Percentage on consumer's price.
-----			
1.	Expenses incurred by producer		
(a)	Grading charges	0.50	
(b)	Filling, stitching and weighment charges.	0.45	
(c)	Loss in storage (2 per cent) in 15 days	0.64	
(d)	Transport charges	<u>0.75</u>	
	Total expenses incurred by the Producer	2.34	4.39
2.	Price at the producer level	32.00	
3.	Net share of the producer	29.66	55.61
4.	Expenses incurred by the trader		
(a)	Interest on borrowed capital @ 14 per cent for 3 months	1.12	
(b)	Filling, stitching and weighment charges	0.45	
(c)	Transport charges	0.75	
(d)	Loading and unloading charges	0.80	
(e)	Storage charges	0.20	
(f)	Loss of gunny bags	<u>1.25</u>	
	Total expenses incurred by the trader	4.57	8.57
5.	Price at the trader level	43.25	



(1) _ _ _ _	(2) _ _ _ _	(3) _ _	(4) _ _
6. Margin of the trader	6.68	12.52	
7. Expenses incurred by the retailer.			
(a) Weighment, loading and unloading charges	0.50		
(b) Transport charges	1.25		
(c) Depreciation charges for gunny bags	0.80		
(d) Loss in transit	0.63		
(e) Interest on capital invested @ 14 per cent for 3 months	<u>1.40</u>		
Total expenses incurred by the retailer	4.58	8.58	
8. Price at retailer level	53.34		
9. Margin of retailer	5.51	10.33	
10. Consumer's price	53.34	100.00	

APPENDIX- II(e):Marketing costs and margins of potato in Banki:SUB- DIVISION:

Sl. No.	Item	Rs./ quintal	Percentage on consumer's price.
-----			
1.	Expenses incurred by producer.		
(a)	Grading charges	0.50	
(b)	Filling, stitching and weighment charges	0.45	
(c)	Loss in storage (2 per cent) in 15 days	0.62	
(d)	Transport charges	<u>0.75</u>	
	Total expenses incurred by the producer	2.32	4.51
2.	Price at the producer level	31.00	
3.	Net share of the producer	28.68	55.69
4.	Expenses incurred by the Trader		
(a)	Interest on borrowed capital @ 14 per cent for 3 months	1.08	
(b)	Filling, stitching and weighment charges	0.45	
(c)	Transport charges	0.75	
(d)	loading and unloading charges	0.80	
(e)	Storage charges	0.25	
(f)	loss of gunny bags	<u>1.25</u>	
	Total expenses incurred by the trader	4.58	8.89
5.	Price at the trader level	41.35	

(1) _ _ _ _ _	(2) _ _ _ _ _	(3) _ _	(4) _ _
6. Margin of the trader		5.77	11.20
7. Expenses incurred by the retailer			
(a) Weighment ,loading and unloading charges		0.50	
(b) Transport charges		0.80	
(c) Depreciation charges for gunny bags		0.80	
(d) Loss in transit		0.60	
(e) Interest on capital invested			
@ 14 percent for 3 months		<u>1.40</u>	
Total expenses incurred by the retailer		3.60	6.99
8. Price at retailer level		51.50	
9. Margin of retailer		6.55	12.72
10. Consumer's price		51.50	100.00

APPENDIX- III(a):(Model-3)Marketing costs and margins of potato in Cuttack SadarSub-Division:

Sl. No.	Item	Rs./ quintal	Percentage on consumer's price.
-----			
1.	Expenses incurred by producer		
(a)	Grading charges	0.50	
(b)	Filling, stitching and weighing charges	0.45	
(c)	Loss in storage( 3 per cent)	1.20	
(d)	Transport charges	1.50	
(e)	Hat tax	<u>0.25</u>	
	Total expenses incurred by producer	3.90	9.29
2.	Price at the producer level	42.00	
3.	Net share of the producer	38.10	90.71
4.	Consumer's price	42.00	100.00

Marketing costs and margins of potato in Jagatsinghpur:Sub-Division:

Sl. No.	Item	Rs./ quintal	Percentage on consumer's price.
-----			
1.	Expenses incurred by producer		
(a)	Grading charges	0.50	
(b)	Filling, stitching and weighment charges	0.45	
(c)	Loss in storage (3 per cent)	1.05	
(d)	Transport charges	1.25	
(e)	Hat tax	<u>0.25</u>	
	Total expenses incurred by producer	3.95	9.08
2.	Price at the producer level	43.50	
3.	Net share of the producer	39.55	90.92
4.	Consumer's price	43.50	100.00

APPENDIX- III(c):Marketing costs and margins of potato in Kendrapara;Sub-Division:

Sl. No.	Item	Rs./ quintal	Percentage on consumer's price.
-----			
1.	Expenses incurred by producer.		
(a)	Grading charges	0-50	
(b)	Filling, stitching and weighment charges	0.45	
(c)	Loss in storage ( 3 per cent)	1.23	
(d)	Transport charges	1.15	
(e)	Hat tax	<u>0.30</u>	
	Total expenses incurred by producer	3.63	8.44
2.	Price at the producer level	43.00	
3.	Net share of the producer	39.37	91.56
4	Consumer's price	43.00	100.00

APPENDIX - III(d):Marketing costs and margins of potato in Athagarh:Sub-Division:

Sl. No.	Item	Rs./ quintal	Percentage on consumer's price.
-----			
1.	Expenses incurred by producer		
(a)	Grading charges	0.50	
(b)	Filling, stitching and weightment charges.	0.45	
(c)	Loss in storage ( 3 per cent)	1.35	
(d)	Transport charges	1.25	
(3)	Hat tax	<u>0.20</u>	
	Total expenses incurred by the producer	3.75	8.53
2.	Price at the producer level	44.50	
3.	Net share of the producer	40.75	91.57
4.	Consumer's price	44.50	100.00

APPENDIX - III(e):Marketing costs and margins of potato in Banki:Sub-Division:

Sl. No.	Item	Rs./ quintal	Percentage on consumer's price.
-----			
1.	Expenses incurred by Producer		
(a)	Grading charges	0.50	
(b)	Filling, stitching and weighment charges	0.45	
(c)	loss in storage( 3 per cent )	1.32	
(d)	Transport charges	0.85	
(e)	Hat tax	<u>0.35</u>	
	Total expenses incurred by producer	3.47	7.89
2.	Price at the producer level	44.00	
3.	Net share of the producer	40.53	92.11
4.	Consumer's price	4 4.00	100.00



(In rupees per quintal)

Month Year	January	February	March	April	May	June	July	August	September	Oct.	Nov.	Dec.
1963-64	27.73	25.13	25.30	30.00	38.46	41.73	56.80	52.29	47.38	53.34	60.70	65.75
1964-65	32.20	24.62	29.41	40.57	62.49	73.00	78.95	93.68	82.79	95.41	118.14	84.37
1965-66	35.52	30.71	32.00	31.28	33.00	53.60	73.75	81.25	85.00	67.00	83.32	56.55
1966-67	45.42	34.26	35.39	47.33	51.47	77.15	83.41	72.08	71.04	72.00	90.65	92.30
1967-68	38.22	29.47	38.15	66.66	74.98	93.37	104.00	100.00	99.81	102.83	104.42	104.64
1968-69	45.38	43.90	38.00	38.91	68.76	70.42	70.00	69.60	57.72	73.10	74.00	59.75
1969-70	38.04	31.30	30.00	31.04	37.64	45.21	56.81	61.21	60.22	63.00	68.50	61.80
1970-71	36.75	25.23	43.52	59.78	69.33	83.36	77.21	72.17	79.87	83.00	103.53	77.73
1971-72	41.91	39.70	46.99	47.92	55.30	62.12	63.64	61.79	68.69	72.24	84.28	68.57
1972-73	35.26	30.97	36.75	46.22	62.94	30.28	74.62	72.76	71.38	71.10	72.80	56.95
1973-74	35.31	39.57	52.71	65.11	85.95	80.06	88.44	90.86	95.21	121.91	132.37	111.19
1974-75	71.39	52.71	66.22	82.54	87.75	99.46	107.71	104.41	105.35	103.73	104.37	102.76
1975-76	74.01	55.34	56.72	57.11	66.96	80.88	82.94	76.96	83.88	83.25	83.25	71.04

Source :- Civil supply office, Cuttack.

1963.64 to 1975.76.

(Base 1963-64 = 100)

Month Year	January	February	March	April	May	June	July	August	September	Oct.	Nov.	Dec.
1963-64	-	-	-	-	-	-	129.36	118.66	107.15	118.98	131.18	135.35
1964-65	63.38	46.06	51.91	67.75	97.60	108.64	115.92	136.76	120.23	139.11	176.41	129.92
1965-66	55.58	48.61	50.99	50.41	55.91	95.02	132.50	144.52	150.41	116.88	141.80	93.46
1966-67	73.38	55.33	58.06	78.13	84.25	122.69	130.18	113.38	111.89	111.79	136.93	136.04
1967-68	55.08	41.26	51.71	87.42	95.99	117.89	129.98	123.59	122.46	128.00	132.30	134.65
1968-69	60.23	60.42	54.56	58.38	107.21	115.45	119.00	120.02	101.03	129.45	134.92	113.81
1969-70	74.73	62.60	60.38	62.87	77.15	92.94	116.71	126.54	123.71	124.90	129.35	110.61
1970-71	63.02	42.32	71.48	95.59	106.93	120.50	113.83	105.05	115.08	120.20	152.32	116.8
1971-72	64.43	61.97	74.39	76.98	90.66	103.86	107.59	105.61	119.46	126.25	146.66	117.85
1972-73	59.78	51.75	63.11	76.42	104.99	119.15	127.55	123.61	119.19	115.90	115.39	88.36
1973-74	55.62	59.65	77.46	91.49	113.41	99.44	99.01	104.68	108.90	137.41	147.86	122.95
1974-75	77.39	56.17	69.84	87.36	94.80	109.25	118.63	114.53	116.11	118.01	119.49	119.90
1975-76	88.21	67.70	71.17	73.26	87.85	109.27	-	-	-	-	-	-

Year and Month.	Index number of wholesale prices of potato (base 1963-64=100)TxSxCxI	Seasonal Index	Deseasonalised data TxCxI Col.(2)+ Col.(3) x100	Trend values (T)	Cyclical-irregular percentages CxI. Col.(4) + Col.(5)	Three months moving total waithted 1,2,1 of Col.(6)	Cyclical percentage (C) Col.(7) + 4.
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1.	2.	3.	4.	5.	6.	7.	8.
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# 1963-64

January	63.42	64.80	97.87	84.55	115.75	445.75	--
February	57.47	54.53	105.39	85.39	123.42	484.80	121.20
March	57.86	62.71	92.26	86.23	122.21	473.80	118.45
April	68.61	76.06	90.20	86.23	105.51	439.64	109.91
May	87.96	94.82	92.76	87.91	105.51	414.79	103.69
June	95.44	109.95	86.81	88.75	97.81	420.99	105.25
July	129.91	120.97	107.39	89.59	119.86	448.78	112.19
August	119.60	118.87	100.61	90.43	111.25	444.25	111.06
Sept ember	108.37	116.52	93.00	91.27	101.89	422.09	105.52
October	122.00	123.70	98.62	92.11	107.06	424.71	106.17

November	138.83	137.40	101.04	92.95	108.70	458.47	114.61
December	150.38	119.64	125.69	93.79	134.01	496.81	124.20
<u>1964-65</u>							
January	73.65	64.80	113.65	94.63	120.09	482.34	120.58
February	56.31	54.53	103.26	95.47	108.15	447.74	111.93
March	67.26	62.71	107.25	96.31	111.35	456.41	114.10
April	92.79	76.06	121.99	97.15	125.56	516.29	129.07
May	142.93	94.82	150.73	97.99	153.82	586.86	146.71
June	166.97	109.94	151.87	98.83	153.66	610.90	152.72
July	180.58	120.97	149.27	99.67	149.76	632.51	158.13
August	214.27	118.87	180.25	100.51	179.33	668.76	167.19
September	189.36	116.52	162.51	101.35	160.34	672.63	168.16
October	218.22	123.70	176.41	102.19	172.62	696.44	174.11
November	270.21	137.40	196.65	103.03	190.86	709.62	177.40
December	192.97	119.64	161.29	103.87	155.28	621.15	155.29
<u>1965-66</u>							
January	81.24	64.80	125.37	104.71	119.73	516.76	129.19
February	70.24	54.53	128.80	105.55	122.02	473.47	118.37

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March	73.19	62.71	116.71	106.39	109.78	429.19	107.29
April	71.59	76.06	94.12	107.23	87.77	358.89	89.72
May	75.48	94.82	79.60	108.07	73.65	337.44	84.36
June	122.59	109.94	11.50	108.91	102.37	405.43	101.36
July	168.68	120.97	139.43	109.75	127.04	497.80	124.45
August	185.84	118.87	156.33	110.59	141.35	559.46	139.86
September	194.41	116.52	166.84	111.43	149.72	551.13	137.78
October	153.24	123.70	123.88	112.27	110.34	493.01	123.27
November	190.57	137.40	138.69	113.11	122.61	450.42	112.80
December	129.34	119.64	108.10	113.95	94.86	451.97	112.99
<u>1966-67</u>							
January	103.88	64.80	160.30	114.79	139.64	498.41	124.60
February	78.36	54.53	143.70	115.63	124.27	498.99	124.75
March	80.94	62.71	129.07	116.47	110.81	467.20	116.80
April	108.25	76.06	142.32	117.31	121.31	458.50	114.62
May	117.72	94.82	124.15	118.15	105.07	466.33	116.58
June	176.46	109.94	160.50	118.99	134.88	506.43	126.61

1.	2.	3.	4.	5.	6.	7.	8.
July	190.78	120.97	157.70	119.83	131.60	513.00	128.25
August	164.86	118.87	138.68	120.67	114.92	476.19	119.50
September	162.48	116.52	139.44	121.51	114.75	453.22	113.30
October	164.68	123.70	133.12	122.35	108.80	454.84	113.71
November	207.34	137.40	150.90	123.19	122.49	496.04	124.01
December	211.11	119.64	176.45	124.03	142.26	515.03	128.76
<u>1962-69</u>							
January	87.41	64.80	134.89	124.87	108.02	456.62	114.15
February	67.40	54.53	123.60	125.71	98.32	414.60	103.65
March	87.25	62.71	139.13	126.55	109.94	475.55	118.88
April	152.47	76.06	200.46	127.39	157.35	565.68	113.92
May	171.50	94.82	180.86	128.23	141.04	589.92	147.48
June	213.56	109.94	194.25	129.07	150.49	593.37	148.34
July	237.87	120.97	196.63	129.91	151.35	600.34	150.08
August	228.72	118.87	192.41	130.75	147.15	594.53	148.63
September	228.29	116.52	195.92	131.59	148.88	588.48	147.12

1.	2.	3.	4.	5.	6.	7.	8.
October	235.20	123.70	190.13	132.43	143.57	566.44	141.61
November	238.83	137.40	173.82	133.27	130.42	553.57	138.39
December	239.34	119.64	200.05	134.11	149.16	547.42	136.85
<u>1968-69</u>							
January	103.79	84.80	160.16	134.95	118.68	522.11	130.52
February	100.41	54.53	184.13	135.79	135.59	491.29	122.82
March	86.91	62.71	138.59	136.63	101.43	423.55	105.88
April	88.99	76.06	116.99	137.47	85.10	391.57	97.89
May	157.27	97.82	165.89	138.31	119.94	430.26	107.56
June	161.07	109.94	146.50	139.15	105.28	425.09	106.27
July	160.10	120.97	132.43	139.99	94.59	389.54	97.38
August	159.19	118.87	133.91	140.83	95.08	364.52	91.13
September	132.02	116.52	113.02	141.67	79.77	349.46	87.36
October	167.20	123.70	135.16	142.51	94.84	355.37	88.84
November	169.25	137.40	123.18	143.35	85.92	345.89	86.47
December	136.66	119.64	114.22	144.19	79.21	336.89	84.22

1.	2.	3.	4.	5.	6.	7.	8.
<u>1969-70</u>							
January	87.00	64.80	134.25	145.03	92.55	354.92	88.73
February	71.59	54.53	131.28	145.87	90.61	348.33	87.08
March	68.61	62.71	109.40	146.71	74.56	302.98	75.74
April	70.99	76.06	93.33	147.55	63.25	262.24	65.56
May	86.09	94.82	90.79	148.39	61.18	248.63	62.16
June	103.40	109.94	94.05	149.23	63.02	258.79	64.69
July	129.94	120.97	107.41	150.07	71.57	284.19	71.05
August	140.00	118.87	117.77	150.91	78.03	305.52	76.38
September	137.74	116.52	118.21	151.75	77.89	310.14	77.53
October	144.09	123.70	116.48	152.59	76.33	304.86	76.21
November	156.67	137.40	114.02	153.43	74.31	301.53	75.38
December	141.35	119.64	118.14	154.27	76.58	311.08	77.77
<u>1970-71</u>							
January	84.05	64.80	129.70	155.11	83.61	311.64	77.91
February	57.70	54.53	105.81	155.95	67.84	320.52	80.13
March	99.94	62.71	158.73	156.79	101.23	384.26	96.06



1.	2.	3.	4.	5.	6.	7.	8.
April	136.73	76.06	179.76	157.63	113.96	434.67	108.67
May	158.57	94.82	167.23	158.47	105.52	433.85	108.46
June	190.66	109.94	173.42	159.31	108.85	414.37	103.59
July	176.60	120.97	145.98	160.15	91.15	377.35	94.34
August	164.95	118.87	138.78	160.99	86.20	360.42	80.10
September	182.68	116.52	156.77	161.83	98.87	374.27	93.57
October	189.84	123.70	153.46	162.67	94.33	390.93	97.73
November	236.80	137.40	172.34	163.51	105.40	395.60	98.90
December	177.79	119.64	148.60	164.35	90.47	375.89	93.97
<u>1971-72</u>							
January	95.86	64.80	147.93	165.19	89.55	369.85	92.46
February	90.80	54.53	166.51	166.03	100.28	392.80	98.20
March	107.47	62.71	171.37	166.87	102.69	391.57	97.89
April	109.60	76.06	144.09	167.71	85.91	353.64	88.41
May	126.48	94.82	133.38	168.55	78.13	320.46	80.11
June	192.09	109.94	129.23	169.39	76.29	302.39	75.59
July	145.56	120.97	120.32	170.23	70.68	287.14	71.78
August	141.33	118.87	118.89	171.07	69.49	288.09	72.02
September	157.11	116.52	134.83	171.91	78.43	303.66	75.91

October	165.23	123.70	133.57	172.75	77.31	313.86	78.46
November	192.77	137.40	140.29	173.59	80.81	313.89	78.47
December	156.83	119.64	131.08	174.43	75.14	302.08	75.52
<u>1972-73</u>							
January	80.64	64.80	124.44	175.27	70.99	293.22	73.30
February	70.83	54.53	129.89	176.11	76.10	305.34	76.33
March	84.05	62.71	134.02	176.95	82.15	325.79	81.45
April	105.71	76.66	145.37	177.79	85.39	334.78	83.69
May	143.96	94.82	151.82	178.63	81.85	327.69	81.92
June	160.75	109.94	146.21	179.47	78.60	316.69	79.17
July	170.67	120.97	141.08	180.31	77.64	311.24	77.81
August	166.42	118.87	140.00	181.15	77.36	304.59	76.15
September	163.26	116.52	140.11	181.99	72.23	288.10	72.02
October	162.62	123.70	131.46	182.83	66.28	264.06	66.01
November	166.51	137.40	121.18	183.67	59.27	252.36	63.09
December	130.26	119.64	108.87	184.51	67.54	283.88	70.97

**APPENDIX -VI (Contd.)**

1.	2.	3.	4.	5.	6.	7.	8.
<b><u>1973-74</u></b>							
January	80.76	64.80	124.62	185.35	89.53	349.87	87.47
February	90.50	54.53	165.96	186.19	103.27	400.91	100.23
March	120.58	62.71	192.28	187.03	104.84	401.60	100.40
April	148.92	76.06	195.79	187.87	88.65	365.73	91.43
May	196.59	94.82	207.32	188.71	83.59	347.55	86.88
June	183.11	109.94	166.55	189.55	91.72	365.19	91.29
July	190.85	120.97	157.76	190.39	798.16	405.91	101.48
August	206.67	118.87	173.86	191.23	117.87	451.25	112.81
September	217.77	116.52	186.89	192.07	117.35	466.78	116.69
October	278.84	123.70	225.41	192.91	114.21	459.44	114.86
November	302.76	137.40	220.34	193.75	113.67	450.78	112.69
December	254.32	119.64	212.57	194.59	109.23	461.06	115.26
<b><u>1974-75</u></b>							
January	163.28	64.80	251.97	195.43	128.93	479.73	119.93
February	120.56	54.53	221.08	196.27	112.64	476.74	119.18
March	151.46	62.71	241.52	197.11	122.53	483.09	120.77

1.	2.	3.	4.	5.	6.	7.	8.
April	188.79	76.06	248.21	197.95	125.39	479.78	119.94
May	200.70	94.82	211.66	198.79	106.47	441.98	110.49
June	227.49	109.94	206.92	199.63	103.65	415.35	103.84
July	246.36	120.97	203.65	200.47	101.58	406.43	101.61
August	238.41	118.87	200.56	201.31	99.62	403.11	100.77
September	240.96	116.52	206.79	202.15	102.29	398.68	99.67
October	237.25	123.70	191.79	202.15	94.48	376.48	94.12
November	238.72	137.40	173.74	203.83	85.23	360.92	90.23
December	235.04	119.64	196.45	204.67	95.98	404.30	101.07
<u>1975-76</u>							
January	169.28	64.80	261.23	205.51	127.11	462.68	115.67
February	126.57	54.53	232.11	206.35	112.48	451.91	112.98
March	129.73	62.71	206.87	207.19	99.84	394.71	98.68
April	130.62	76.06	171.73	208.03	82.55	342.26	85.56
May	153.15	94.82	161.51	208.87	77.32	317.39	79.35
June	184.97	109.94	168.26	209.71	80.20	312.19	78.05

1.	2.	3.	4.	5.	6.	7.	8.
July	189.70	120.97	156.81	210.55	74.47	299.18	74.79
August	176.02	118.87	148.07	211.39	70.04	292.12	73.03
September	191.85	116.52	164.64	212.23	77.57	300.73	75.18
October	190.41	123.70	153.92	213.07	75.55	293.45	73.36
November	190.41	137.40	138.58	213.91	64.78	268.34	67.08
December	162.48	119.64	135.80	214.75	63.23	--	--