TARGETED PUBLIC DISTRIBUTION SYSTEM IN FOOD GRAINS: EXTENT OF UTILIZATION BY THE TRIBAL POPULATION IN KERALA

THESIS

SUBMITTED TO

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

FOR THE AWARD OF THE DEGREE OF

DOCTOR OF PHILOSOPHY

UNDER THE FACULTY OF

SOCIAL SCIENCES

BY

K. THULASEEDHARAN NAIR

(REG. NO. 2043)

UNDER THE GUIDANCE OF

Dr. M. BHASI

(Professor, School of Management Studies,
Cochin University of Science and Technology)

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
COCHIN, KERALA, INDIA

SEPTEMBER 2008

Dr. M. BHASI
B. Tech. (Prodn.) M. Tech. (IE & OR)
Ph. D. (Indl. Mgnt.) (IIT KGP)
PROFESSOR

SCHOOL OF MANAGEMENT STUDIES
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
Kochi - 682 022, Kerala, India

CERTIFICATE

This is to certify that this Thesis titled: **TARGETED PUBLIC DISTRIBUTION SYSTEM IN FOOD GRAINS: EXTENT OF UTILIZATION BY THE TRIBAL POPULATION IN KERALA**, submitted to the Cochin University of Science and Technology for the award of the Degree of Doctor of Philosophy is an authentic record of the bona fide research carried out by Mr. K. Thulaseedharan Nair, under my guidance and supervision at the School of Management Studies, Cochin University of Science and Technology. I further certify that the Thesis represents the bona fide work of the candidate and no part of this work has been presented before for the award of any Degree, Diploma, Fellowship or any other similar titles in any University. He is permitted to submit this thesis.

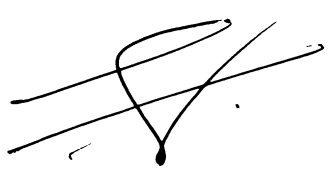
Kochi
05/09/2008

Prof. (Dr.) M. Bhasi

Mobile: 9447419863, Off: 0484-2575310, 2575096, Res: 2577554 Fax: 0484-2575452 Direct: 0484-3922543
E-mail: drbhasi@yahoo.com

DECLARATION

I, K. Thulaseedharan Nair, hereby declare that this thesis titled: **TARGETED PUBLIC DISTRIBUTION SYSTEM IN FOOD GRAINS: EXTENT OF UTILIZATION BY THE TRIBAL POPULATION IN KERALA,** is a bonafide record of research work done by me and that no part of this thesis has been presented before, for the award of any Degree, Diploma, Fellowship or any other similar titles of any University.



Kochi
05/9/2008

K.Thulaseedharan Nair

CONTENTS

ACKNOWLEDGEMENTS

This research work would not have been possible without the constant support and expert guidance of my supervising teacher Prof. (Dr.) M. Bhasi. He has been a continuous source of indispensable insights and inspiration for me throughout the research work. His guidance was so meticulous that without him, I would have got stranded, defocused in my studies. A mere word of gratitude will be too inadequate to thank Prof. (Dr.) M. Bhasi. However, I express my sincere gratitude to my GURU Prof. (Dr.) M.Bhasi, whose inspiration made me feel my research work an enjoyable and engrossing activity rather than a painful labour.

I am thankful to Prof. (Dr.) Mary Joseph T., Director, School of Management Studies, Cochin University of Science and Technology, Prof. (Dr.) P. Sudarsanan Pillai, former Dean, Faculty of Social Sciences, Cochin University of Science and Technology and Prof. (Dr.) D. Rajasenan, Dean, Faculty of Social Sciences, Cochin University of Science and Technology, who made periodical assessment of my research work as Doctoral Committee.

I express my sincere gratitude and obligation to Dr. Ajit Prabhu. V., Principal Scientific Officer, Kerala State Council for Science, Technology and Environment, for his valuable advice, constant support and inspiration through out my research work.

I am indebted to Sri. G. Ramachandran Nair, Formerly Additional Director, Department of Economics and Statistics, Government of Kerala who gave conceptual clarity for my research study.

I place on record my sincere thanks to Sri. Anirudhan Nilamel, MCA, Research Officer, Directorate of Economics and Statistics, for providing excellent technical support in analyzing the data.

I am thankful to Dr. Sumesh R.S., Assistant Professor, Monash University, Malaysia, who inspired me a lot to continue the research work.

I express my sincere thanks to Sri. Roy M.M., KFRI for his valuable technical support to this work.

My wife Smt. M. Prathibha Devi and my son Rahul deserve special mention among these acknowledgements, for their constant persuasion and support to complete this research work.

Due acknowledgement is placed on record in respect of the valuable contributions of many people who supported me in completing this study, whose names are not mentioned here. I thank all of them very sincerely.

I dedicate this work to my beloved parents, Late. P. Kunjuraman Pillai and Late. G. Chellamma Amma.

K. THULASEEDHARAN NAIR

BIO-DATA

Name of the Research Scholar	K. THULASEEDHARAN NAIR
Date of birth	25th November, 1953
Address	T.C.14/774 (1), Observatory Lane, Thiruvananthapuram - 695 033

EDUCATIONAL QUALIFICATIONS

1. Master of Business Administration (MBA) from the University of Kerala.
2. Post-Graduate Diploma in Personnel Management (PGDPM) from the National Institute of Personnel Management, Calcutta.
3. Degree in Law (LL.B) from the University of Kerala.
4. Degree in Science (B.Sc) from the University of Kerala.

EMPLOYMENT

Present: Registrar
Kerala Forest Research Institute,
Peechi, Thrissur – 680 653
An Institution of the Kerala State Council for Science,
Technology and Environment, Government of Kerala

Now on deputation as Chief Executive, Mannam Sugar Mills Co-operative Ltd., Pandalam, Pathanamthitta District

Previous: Managing Director,
Kerala State Co-operative Rubber Marketing Federation Ltd.,
Gandhi Nagar, Kochi - 682 020

K. THULASEEDHARAN NAIR

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

AAY	ANTYODAYA ANNA YOJANA
APC	AGRICULTURAL PRICES COMMISSION
APL	ABOVE POVERTY LINE
ARD	AUTHORIZED RETAIL DEALER
AWD	AUTHORIZED WHOLESALE DEALER
BPL	BELOW POVERTY LINE
CACP	COMMISSION ON AGRICULTURAL COSTS AND PRICES
CIP	CENTRAL ISSUE PRICE
EGS	EMPLOYMENT GUARANTEE SCHEME
FCI	FOOD CORPORATION OF INDIA
FPS	FAIR PRICE SHOP
GOI	GOVERNMENT OF INDIA
ICMR	INDIAN COUNCIL OF MEDICAL RESEARCH
ILO	INTERNATIONAL LABOUR ORGANIZATION
JETRO	JAPAN EXTERNAL TRADE ORGANIZATION
MPCE	MONTHLY PERCAPITA CONSUMER EXPENDITURE
MSP	MINIMUM SUPPORT PRICE
MT	METRIC TONNE
NAFED	NATIONAL AGRICULTURAL CO-OPERATIVE MARKETING FEDERATION OF INDIA LIMITED
NCDC	NATIONAL COOPERATIVE DEVELOPMENT CORPORATION
NSSO	NATIONAL SAMPLE SURVEY ORGANIZATION
PDS	PUBLIC DISTRIBUTION SYSTEM
PL480	PUBLIC LAW 480
RPDS	REVAMPED PUBLIC DISTRIBUTION SYSTEM
TPDS	TARGETED PUBLIC DISTRIBUTION SYSTEM
UK	UNITED KINGDOM
USA	UNITED STATES OF AMERICA
Eg.	Example
Gms	Grams
Kg	Kilogram
Viz.	Namely

ABSTRACT

In India, Food Security meant supply of food grains and the medium was Public Distribution System. Public Distribution System (PDS) is a rationing mechanism that entitles households to specified quantities of selected commodities at subsidized prices. The Objectives of PDS are maintaining Price Stability, rationing during times of scarcity, welfare of the poor, and keeping a check on private trade. Kerala has registered remarkable improvement in poverty reduction in general over the years among all social sections, including scheduled caste and scheduled tribe population.

As part of the structural adjustment intended to reduce public expenditure, PDS has been modified as Revamped PDS (RPDS) during 1992 and later on as Targeted PDS (TPDS) in 1997, intended to target households on the basis of income criterion, classifying people as Below Poverty Line (BPL) and Above Poverty Line (APL). TPDS provides 25Kg. of food grains through the Fair Price Shops per month @ Rs.3/- per Kg. of rice/wheat to the BPL category and @Rs.8.90 and Rs.6.70 for rice and wheat respectively to the APL category of people.

Since TPDS is intended to target the poor people, the subsidy spent by the government for the scheme should be beneficial to the poor people and naturally they should utilize the benefits by purchasing the food grains allotted under the scheme. Several studies have shown that there is under-utilization of the allotments under TPDS. Therefore, the extent of utilization of TPDS in food grains, how and why remains as a major hurdle, in improving the structure and system of PDS.

Livelihood of the tribal population being under threat due to increasing degradation of the resources, the targeting system ought to be effective among the tribal population. Therefore, performance of the TPDS in food grains, in terms of the utilization by the tribal population in Kerala, impact thereof and the factors, if any, affecting proper utilization were considered as the research problem in this study.

The study concentrated on the pattern of consumption of food grains by the tribal people, whether their hunger needs are met by distribution of food grains through the TPDS, extent to which TPDS in food grains reduce their share of expenditure on food in the total household expenditure, and the factors affecting the utilization of the TPDS in food grains by the tribal population.

Going through the literature, it has been noted that only few studies concentrated on the utilization of TPDS in food grains among the tribal population in Kerala.

The Research Design used in this study is descriptive in nature, but exploratory in some aspects. Idukki, Palakkad and Wayanad have more than 60% of the population of the tribals in the state. Within the three districts mentioned above, 14 villages with scheduled tribe concentration were selected for the study. 95 tribal colonies were selected from among the various tribal settlements. Collection of primary data was made from 1231 households with in the above tribal colonies.

Analysis of data on the socio-economic factors of the tribal people, pattern of food consumption, extent of reduction in the share of expenditure on food among the household expenditure of the tribal people and the impact of TPDS on the tribal families etc. and testing of hypotheses to find out the relation/association of each of the six variables, using the data on BPL and APL categories of households separately have resulted in findings such as six percent of the tribal families do not have Ration Cards, average per capita consumption of food grains by the tribal people utilizing TPDS meets 62% of their minimum requirement, whereas the per capita consumption of food grains by the tribal people is higher than the national average per capita consumption, 63% deficiency in food grains may be felt by tribal people in general, if TPDS is withdrawn, and the deficit for BPL tribal people may be 82%, TPDS facilitates a reduction of 9.71% in the food expenditure among the total household expenditure of the tribal people in general, share of food to non-food among BPL category of tribals is 55:45 and 40:60 among the APL, Variables, viz. household income, number of members in the family and distance of FPS from tribal settlements etc. have influence on the quantity of rice being purchased by the tribal people from the Fair Price Shops, and there is influence of household income and distance of FPS from tribal settlements on the quantity of rice being purchased by the tribal people from the open market.

Rationing with differential pricing on phased allotments, rectification of errors in targeting, anomalies in norms and procedures for classifying tribal people as BPL/APL, exclusive Income Generation for tribal population, paddy cultivation in the landholdings possessed by the tribal people, special drive for allotment of Ration Cards to the tribal people, especially those belonging to the BPL category, Mobile Fair Price Shops in tribal settlements, ensure quality of the food grains distributed through the TPDS, distribution of wheat flour in packed condition instead of wheat through the Fair Price Shops are recommended to address the shortcomings and weaknesses of the TPDS vis-à-vis the tribal population in Kerala.

Chapter 1
Introduction

1. INTRODUCTION

"Every man, woman and child has the inalienable right to be free from hunger and malnutrition..." *World Food Conference (1974)*[1]

1.1 Public Distribution System

As long as starvation and deprivation exist, the slogan raised by the World Food Conference as above looms large over humanity. When every nation attains food security for its people, there begins the journey towards prosperity. Food security for a country means sufficient quantity of essential commodities produced, stored properly and made available to all of the people, especially the under privileged sections

According to definition emerging out of World Food Summit, 'Food Security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Household food security is the application of this concept to the family level with individuals within households as the focus of concern'.[2]

In India, Food Security mainly focused on supply of food grains and the medium was Public Distribution System. Public Distribution System is a rationing mechanism that entitles households to specified quantities of selected commodities at subsidized prices. In other words, it is an instrument for ensuring availability of certain essential commodities for consumption at subsidized rates to the people, particularly the poor. The commodities distributed under PDS include rice, wheat, sugar, edible oil and kerosene. The Government of India, through the Food Corporation of India (FCI) established in 1965, procures and stocks food grains and releases every month for distribution through the PDS network across the country.

---

[1] Taimni, B.K. (2001). Food Security in 21st century-Perspective and Vision, 2001. Delhi: Konark Publishers Pvt. Ltd.

[2] Rome Declaration on World Food Security, World Food Summit, 1996

The Objectives of PDS are as follows:[3]

1. Maintaining Price Stability.
2. Rationing during times of scarcity.
3. Raising the welfare of the poor.
4. Keeping a check on the private trade.

Public Distribution System (PDS) has been established in India as a War time measure, distributing food grains, to combat famine and price spirals, especially in regard to food grains, viz. Rice and Wheat.

In view of the Government of India, "the PDS aims at insulating the consumer from the impact of rising prices of these commodities and maintaining the minimum nutritional status of our population.[4] The PDS supplies have a stabilizing effect on Open Market prices by increasing availability, removing scarcity psychosis and deterring speculative tendencies".[5]

As part of structural adjustments made by the Government of India to reduce public expenditure, the PDS in India was modified as Revamped Public Distribution System (RPDS) during 1992. It was intended to give thrust to providing food grains at subsidized rates to people in specific geographical areas like hilly regions, drought-prone areas, urban slum areas, deserts, tribal areas etc., where people were facing hardships.

Later on, Targeted Public Distribution System (TPDS) has been introduced in 1997, giving emphasis to providing benefits to poorer sections of the population, *i.e.* targeting households on the basis of income criterion. The Targeted PDS uses income poverty line to demarcate 'poor' and 'non-poor' households. People are classified as Below Poverty Line (BPL) and Above Poverty Line (APL). Special ration cards are issued to families below the poverty line. Food grains like rice and wheat are distributed to the people below poverty line at specially subsidized price. The weaknesses of the Public Distribution System have been augmented by the introduction of structural adjustment policies in the 1990s, intended for reduction in public expenditure.

---

[3] Swaminathan, Madhura. (2000). Weakening welfare - The Public Distribution of Food in India. New Delhi: Left Word Books, Naya Rasta Publishers Pvt. Ltd.

[4] Majumder, Bhaskar. (2004). Poverty, Food Security and Sustainability – Public Distribution System in India. Jaipur: Rawat Publications.

[5] GoI, Annual Report 1991-92, Part II, p.53. New Delhi: Ministry of Food and Civil Supplies, Department of Civil Supplies.

1.1.1 Organizational structure of PDS

The organizational structure of PDS in India is shown in Figure 1.1. The organizational setup of PDS in India is a mixture of Union and State tasks and responsibilities. The Government of India decides, in dialogue with the relevant States, how much food grain should be procured in each State. It also decides on procurement prices. This is done on the basis of advice from the Commission on Agricultural Costs and Prices, which calculates the costs of production and estimates a reasonable remunerative price for the food grain produced and supplied to the PDS by the farmers. In principle, these prices are the same for each State. There are different prices for different qualities, but there are no price differentials that relate to ecological and/or other production conditions. In the implementation of procurement policy, individual states make only small adjustments–always upwards– to these recommended prices.

In contrast to the centrally administered prices, the mode of procurement is decided by the State governments. Procurement may take place through open market purchases, by market purchases in which the government exercises the right of preemption, by a levy on producers, traders or millers, by agents under a system of monopoly procurement, etc. In many States procurement is supported by a law specially made for this purpose. Usually, the Food Corporation of India (FCI) is the procurement agent. The FCI, however cannot enforce procurement policy. The State Food and/or Civil Supplies Department and special Task Forces are responsible for enforcing procurement policy. Dependent on the mode of procurement and the price difference between the open market price and procurement price, this enforcement is more or less troublesome.[6]

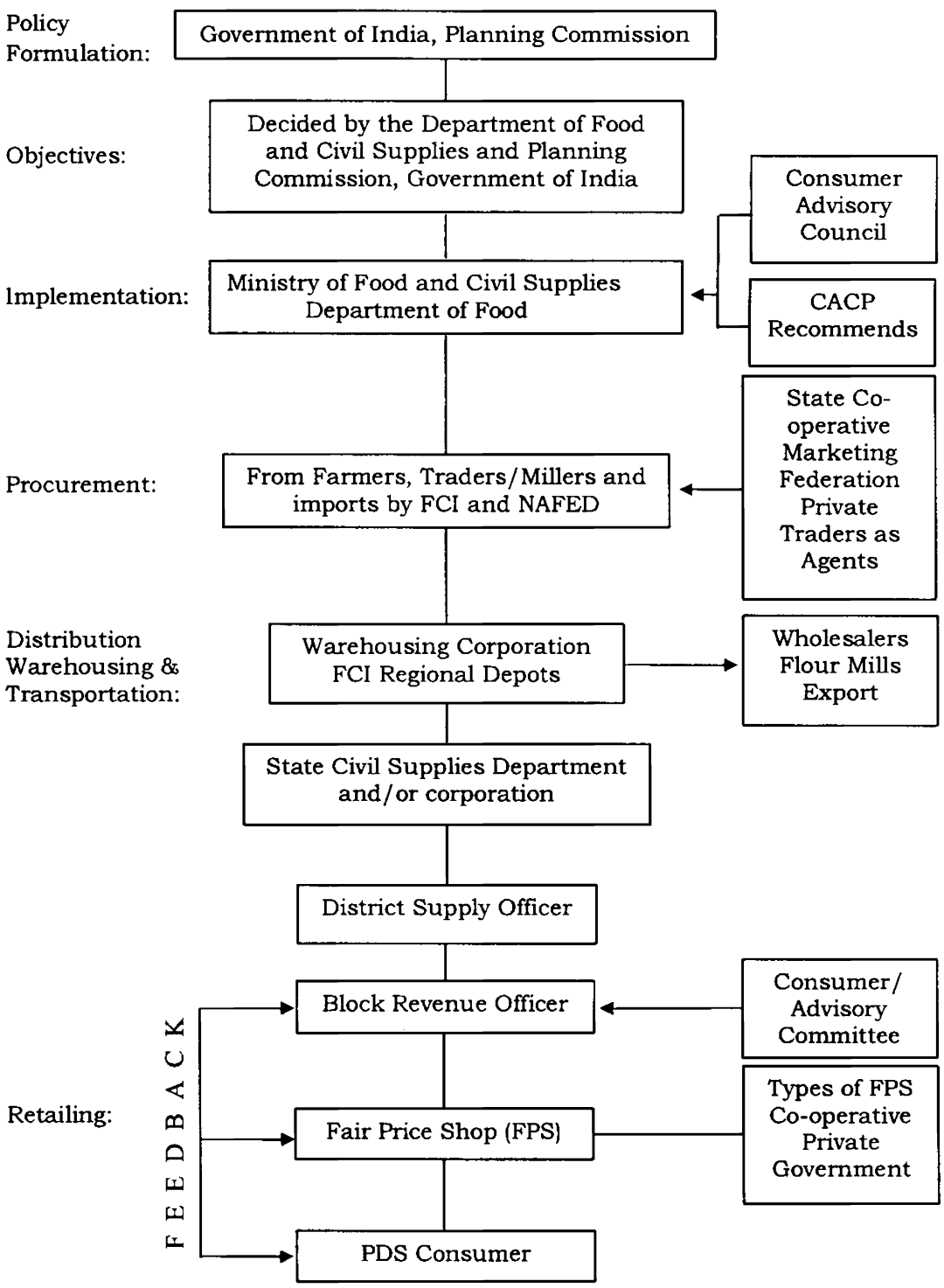
The Food Corporation of India has many large warehouses in different parts of the country where the food grains are stored after procurement.[7] Food may be transported from the FCI warehouse to another on the basis of distribution decisions made by the Government of India (GoI), in consultation with the

---

[6] Mooij, Jos. (1996). Food Policy and Politics – The Public Distribution System in Karnataka and Kerala, South India. Netherlands: Wageningen

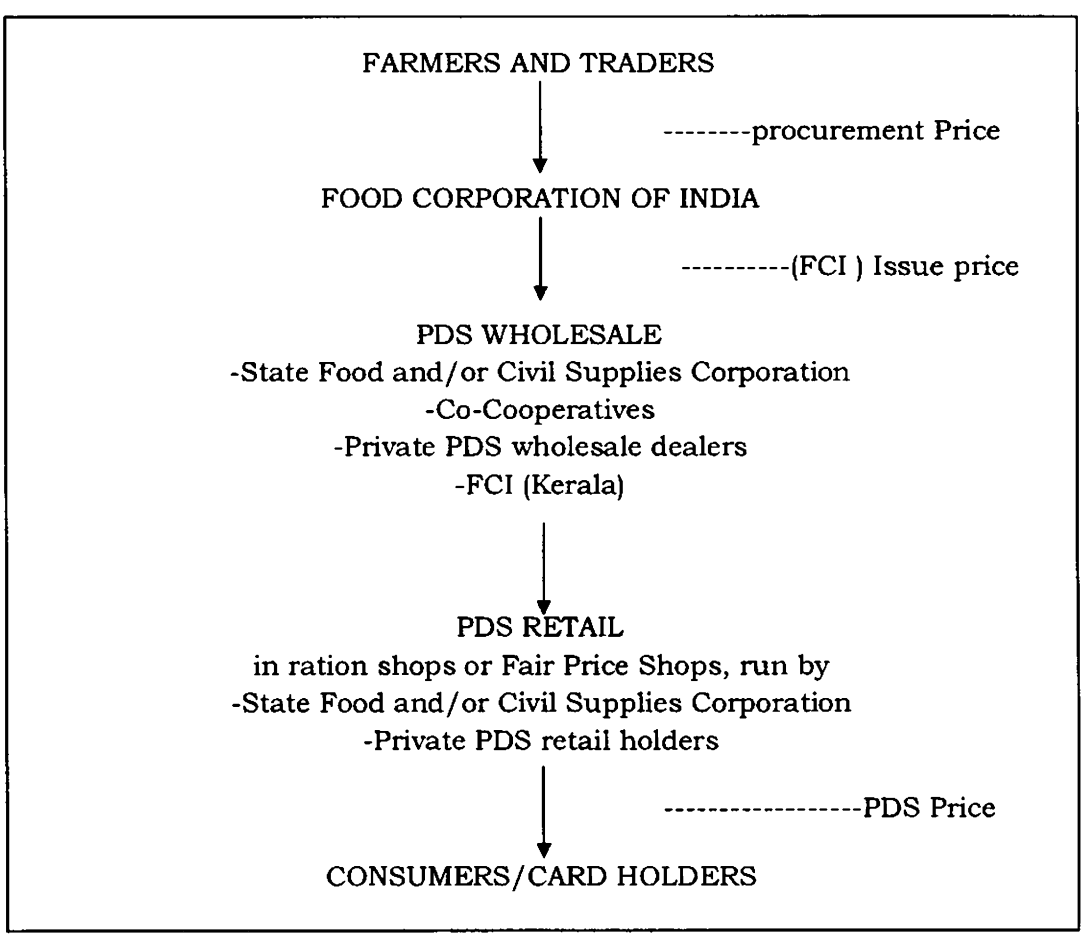
[7] http://www.fci.nic.in/ (accessed on 24/04/2006)

Figure 1.1 Organizational Structure of PDS in India



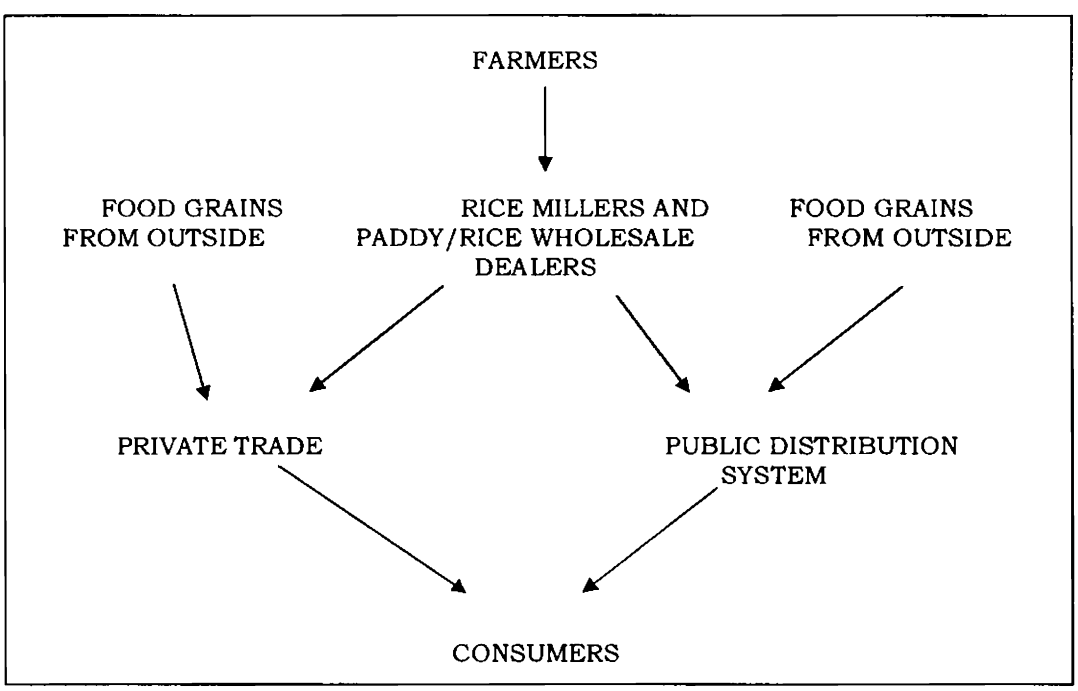
State governments. Apart from allocation to the States, the GoI also fixes the issue price, that is the selling price of the FCI. As far as distribution within the States is concerned, the State government is again, the policy making institution. It can decide how to distribute the allocated food (to everybody, to targeted groups only, to concentrate on cities or on rural areas etc.) and at what price. Each State has its own distribution policy. The State department of Food and/or Civil Supplies monitors this distribution process. In many States trading corporations have been established which act as PDS wholesalers. They bring food from FCI warehouses to storage places near to the retail points, the so-called Fair Price Shops. The retail sale of PDS commodities is undertaken either by these State corporations or by private fair price shop owners.

Figure 1.2 Schematic outline of the PDS



This is a schematic outline of flows of food grains and distribution of responsibilities shown in Figure 1.2. It is important to add that not all procured food grain is readily available for distribution. The Government of India also maintains a buffer stock of 20-30 million tonnes, to be drawn upon only in times of severe scarcity. Furthermore, the above described scheme is a) cross-cut by several GoI distribution schemes meant for selected categories of people (for instance, food for work programmes), in which not the State governments but the central government formulates distribution policy, and b) supplemented with additional state government programmes in the sense of (own, State-wise) procurement and distribution activities.

Figure 1.3 Schematic View of the Food Grain Market in South India: Parallel Markets[8]



The Figure 1.3 clearly shows a dual marketing system. The PDS exists alongside the open market. The flow of food grains is split at the top of the figure. The largest part of the food grains is channeled to the open market, while about 10 per cent of rice and wheat goes to the PDS. Consumers

[8] Mooij, Jos. (1996). Food Policy and Politics – The Public Distribution System in Karnataka and Kerala, South India. Netherlands: Wageningen

purchase from both sources. The figure is meant to describe the situation in South India. It focuses on rice production and procurement, as there is hardly any wheat production in South India. Both the open market and the Public Distribution System are partly supplied by food grain stocks from outside the State. In Kerala, there is no procurement at all by the government, so the connecting arrow between rice millers/paddy-rice traders and the Public Distribution System does not exist. All PDS food grain to the state comes from outside the State.

The figure of a dual marketing system presents a highly idealized picture. As could be expected, in reality there are many cross-connections. The flow of food grains does not just split at the top, only to come together again at the bottom when consumers buy from both sources. At many more points within the chain there are exchanges and interconnections. Mooij[9] has reported an interview conducted with a Rice mill owner as follows:

The rice mill owner mentioned that there are two possibilities of sale of PDS rice to the open market; one legal, and another illegal. Example of the legal sale of PDS rice is by auction from the FCI godowns, when the rice is three to four years old and not so nice any more. The illegal sale is done by the PDS wholesale agents who divert rice from the PDS to the open market. The example of re-polishing bad quality rice and putting it in new bags with brand names for selling in the open market has also been reported.

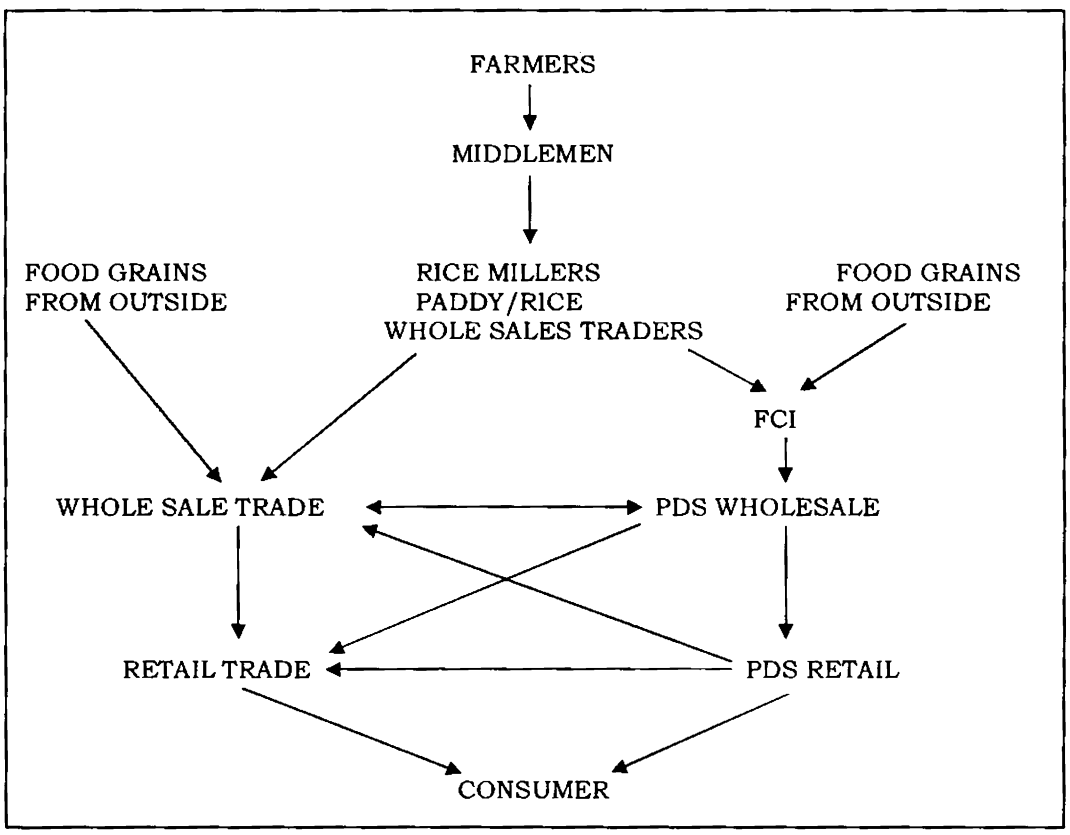
These types of transactions are highlighted in an expanded view of the food grain market in South India, which clearly shows that rather than a dual marketing system, the situation is characterized by an interwoven market structure. The relation of different constituents of the Inter woven markets in South India can be seen in Figure 1.4. [10]

---

[9] Mooij, Jos.E. (1995). The social construction of food distribution policy in India, 1939-1990. In: Paul Baak (ed.) CASA Nova aspects of Asian societies1. Amsterdam: Centre for Asian Studies.

[10] Bharadwaj, Krishna. (1985). A view on commercialization of Indian agriculture and the development of capitalism. Journal of peasant studies,12, No.4, pp.7-25.

Figure 1.4 Interwoven Markets



1.1.2 PDS in context: Poverty and markets

In India, a very specific definition has been traditionally used, namely fulfillment of the nutritional requirement of 2400 calories per person per day in rural areas and 2100 calories in urban areas. The poverty line is defined as that level of expenditure at which a person accesses this minimal level of calorie intake (which is not the same as the level of expenditure required solely for accessing this intake). The practice has been to take the level of expenditure corresponding to the poverty line in some base year and to update it for subsequent years for each state using the Consumer Price Index Number for Agricultural Labourers for rural areas and the Consumer Price Index Number for Industrial Workers for urban areas.[11]

The National Sample Survey Organization has estimated the incidence of poverty in the country during 1999-2000 as follows: Poverty ratio for rural-

[11] Economic Review-2006-State Planning Board, Kerala. P353

27.1 per cent, urban- 23.6 per cent and combined- 26.1 per cent , whereas the projection for the year 2007 is 21.1 per cent - rural, 15.1 per cent - urban and combined 19.3 per cent.

Although poverty estimates vary enormously, it is clear that a very substantial part of the Indian population lives below the poverty line, which means that their income is not sufficient to buy enough food. About 80 per cent of these poor people live in rural areas. These poor people may be agricultural labourers, marginal producers, fishermen, village craftsmen or persons employed in construction of local industries. In many cases, they are underemployed. Sometimes, they are involved as small peasants in food production themselves, but forced to sell a high proportion of their output after the harvest to meet immediate cash requirements like outstanding debts. Later in the season, these peasants have to buy again from the market for their daily needs. This cycle of distress buying and selling usually under the compulsion of debts have been analyzed as "forced commercialization".[12]

Extreme poverty and inefficient access to food co-exist with self-sufficiency at the all-India level. With the exception of a few years of droughts and bad harvests, since 1976 India has procured enough food grains to feed its population. Of course, this does not imply that each region is self-sufficient. Some regions depend on large food imports, while others export food grains.

It is estimated that between 75 and 80 per cent of the food grains is marketed. The remainder is exchanged outside the market or consumed by the producers themselves. Marketing is done by private agents and by the state. Private trade is of a polarized nature, with large mercantile firms on the one hand and petty traders handling insignificant quantities on the other.[13]

---

[12] Bhaduri, Amit. (1985). "Class relations and commercialization in Indian agriculture: a study in the post-independence agrarian reforms of Uttar Pradesh". In: Raj. K.N., Bhattacharya. N., Guha. S. and Padni.S. (eds.) Essays on the commercialization of the Indian agriculture. Delhi: Oxford University Press.

[13] Clay. E.J., Harris.B. and Gillespie. S. (1988). Food strategy in India. Approach to food strategy in the natural resources sector. London: Relief and Development Institute.

The strategy of Indian government to change these characteristics of the food market has been at least threefold. The government has 1) taken measures to promote growth of production, through producer-friendly food price policy, technological inputs, subsidies to farmers etc. 2) organized interventions in the food system: procurement, maintaining of a buffer stock and distribution of subsidized food and 3) introduced regulation and control of private trade practices, through so-called regulated markets and additional legal measures (e.g. the Essential Commodities Act)

1.2 Poverty Scenario in Kerala

The present form of PDS is targeted on people below the poverty line. Hence it is worth examining the level of poverty existing among the people.

Poverty can be defined in an inclusive sense as consisting of a number of elements: lack of access to, or non-availability of income-earning opportunities, basic health and sanitation, etc.

National Sample Survey Consumer Expenditure data have been used to identify the extent of poverty in Kerala, as being done in all other states of the country. As per the NSSO 55th round (1999-2000), Kerala has poverty figures of 9.38 per cent in the rural area and 20.27 per cent in the urban areas, whereas at the all India level, it is 27.09 per cent in rural areas and 23.62 per cent in the urban areas. At the official poverty line for 1999-2000 in rural Kerala, only 1440 calories could be accessed which is 960 calories short of the 2400 calories that define poverty. If the norm of 2400calories for rural areas is strictly considered, the number of persons in rural Kerala who could not access this norm in 1999-2000 comes to a staggering 82.5 percent. The figure of 9.38 per cent appears to be a completely arbitrary and meaningless figure, and a gross underestimation of rural poverty. The poverty line fixed for Kerala for the year 2004-05 is Rs.429.07 (Rural) and. Rs.562.90 (Urban).[14]

When we consider poverty and the people suffering from poverty, the lowest strata among poor people, viz. the destitutes have to be closely watched.

---

[14] Tenth Five Year Plan, Vol. I, Planning Commission, GOI, New Delhi.

Destitutes are the poorest of the poor. They are the outliers of the development scenario in the negative extreme. They live at the margins of the economy, society and polity. They do not have a voice or the power of choice. They face the worst forms of deprivation and lack of access to the minimum services. They are exposed to all forms of vulnerability and do not have any safety net against risks. Their income is below subsistence and they are dependent. These faceless, powerless people lack capabilities and are neither aware of their entitlements nor can they access them. They neither compete nor bargain. Severity of destitution is by unfavourable physical gender or caste status. That is disability being a disabled, being a widow, belonging to a scheduled caste or tribe can singly or in combination aggravate the suffering. The collapse of the traditional social support systems has orphaned the destitutes. They are sometimes objects of charity. But they are never subjects of development. They have to be invested with identity, personality and empowered to stand on their own. Only an Antyodaya approach can reach them. Only care and support can lift them. They can develop only after a period of well – targeted well – designed welfare.

Kerala has registered a remarkable improvement in poverty reduction over the years among all the social sections, including scheduled caste and scheduled tribe population. The incidence of poverty among scheduled castes and scheduled tribes in Kerala is only half that of the all India level. The decline in the incidence of poverty in the state may be broadly attributed to the land reform measures and the large number of anti-poverty programmes undertaken by both the Central and State Governments and also due to the growth of the economy which in turn raises the level of income.

Scheduled Castes constitute 19 per cent of the BPL population in Kerala, though they are only 9.81 per cent of the total population of the state. It shows that the incidence of poverty among the scheduled caste people is about double that of the population of the state in general. Scheduled Tribes constitute three per cent of the total BPL population while the proportion of Scheduled Tribe population is only 1.14 percent.[15]

---

[15] Economic Review 2006, State Planning Board, Kerala.

1.3 Profile of PDS in Kerala

Kerala has a long history of Public Distribution System, dating back to the beginning of the Second World War. Universal and Statutory rationing was introduced with effect from 1st July,1965. Kerala was considered as a model among other Indian states, in respect of successful implementation of the Public Distribution System.

In Kerala, the coverage of ration cards was almost hundred percent. Ration cards are issued to all families including those who do not have house numbers. The total number of ration cards in the state has increased from 66.11 lakhs as on 1st April 2005 to 67.77 lakhs as on 1st April, 2006 showing an increase of 2.5 percent. As on August 2006 the number of cardholders rose up to 68.59 lakhs of which 47.70 lakh families (69.54 per cent) are APL, 14.93 lakh (21.77 per cent) are BPL and 5.96 lakhs are (8.69 per cent) under the Andhyodaya Annayojana Scheme (AAY). Rationed articles at subsidized price are distributed to the cardholders through a network of 333 authorized wholesale dealers and 14,195 authorized retail dealers. At present there are 21 sub depots of the Food Corporation of India (FCI) in the state. The profile of PDS in Kerala is shown in Table 1.1.

Table 1.1 PDS in Kerala - A Profile (2001-2006)

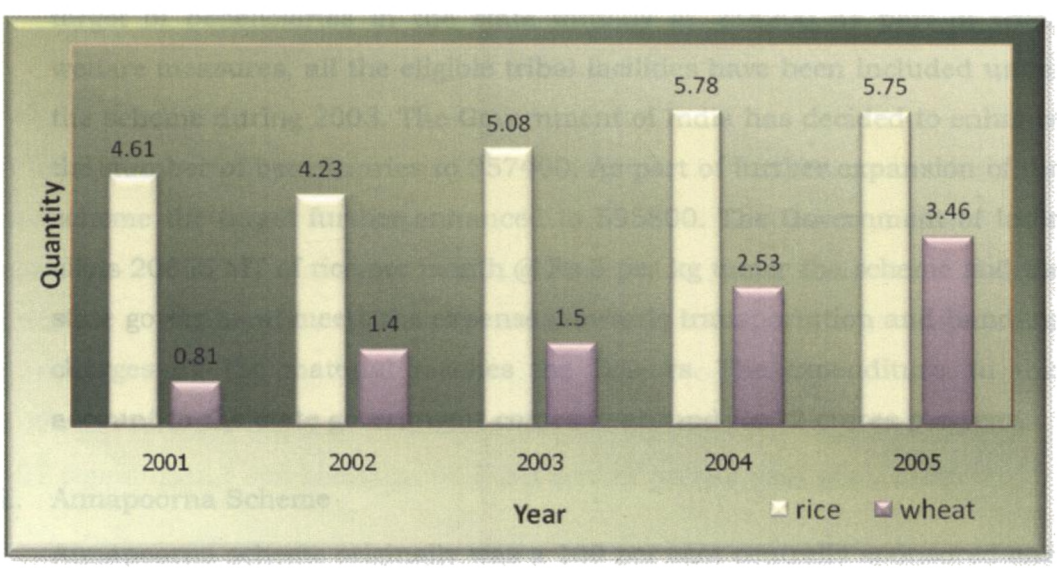
Sl. No	Items	2001-02	2002-03	2003-04	2004-05	2005-06
1	a) Ration Cards for families	6,389,241	6,260,966	6,446,957	6,611,298	6,777,075
	b) Ration Permits for institutions	17,338	16,183	15,878	15,215	14,187
2	FCI Sub Depots	23	23	22	22	21
3	Wholesale Shops					
	a) Co-operative Sector	38	42	38	37	35
	b) Others	297	259	269	288	298
4	Ration Shops					
	a) Co-operative Sector	958	828	697	634	595
	b) Others	13,212	13,249	13,441	13,513	13,600

(*Source*: Department of Civil Supplies, Kerala)

1.3.1 Distribution of Rice and Wheat

Food grains are allotted by the Government of India for distribution to all cardholders at the rate of 35 kg per month irrespective of the category. Even though, the State receive food grains at the rate of 35 kg per month per household, the allotment was modified as 25 kg per household, so as to extend the benefit to more number of households in Kerala under TPDS. During 2005-06, total allotment of rice and wheat in the country as a whole from the central pool was 269 lakh tones and 148 lakh tones respectively. Except for a slight decline in the off take of rice in 2002, the distribution of food grain in total and wheat taken separately through Public Distribution System in Kerala shows an upward trend. In 2001 the off take of rice and wheat in the state was 4.61 lakh tones and 0.81 lakh tones respectively which increased to 5.75 lakh tones of rice and 3.46 lakh tones of wheat in 2005, constituting only 2.3 per cent and 2.02 per cent of the central off take of rice and wheat respectively. Reduction of central subsidy for food grains under APL category from April 2000, lack of desired quality of food grains are the reasons for low off take of food grains under TPDS. The trend in the distribution of rice and wheat during 2001 to 2005 is shown in Figure 1.5.

Figure 1.5 Distribution of Rice and Wheat through PDS in Kerala (in Lakh MTs)



(*Source:* Department of Civil Supplies, Kerala)

After the introduction of TPDS, there is sharp fall in APL families buying food grains from PDS shops. Retail prices of commodities for last five years for Rice and Wheat under TPDS are shown in Table 1.2.

Table 1.2 Retail Price of Commodities issued through Fair Price Shops

Sl. No.	Items	Price as on April 2006 (Rs./kg)
1	Rice-APL	8.90
	BPL	3.00
2	AAY	3.00
3	Wheat – APL	6.70
	BPL	3.00
4	Annapoorna rice	Free of Cost

(*Source*: Department of Civil Supplies, Kerala)

Apart from the distribution of rice and wheat as per the Public Distribution System, there are some special schemes for providing food grains, *i.e.*, rice and wheat to the underprivileged, destitutes and malnourished population. The special schemes are as follows:

i. Antyodaya Anna Yojana Scheme (AAY)

This scheme which was implemented in Kerala since February, 2001 provides 35 kgs of food grains to the poorest of the poor families per month @ Rs.3 per kg. Even though the Central Government have fixed the target of beneficiaries in the state initially at 238200 as part of tribal welfare measures, all the eligible tribal facilities have been included under the scheme during 2003. The Government of India has decided to enhance the number of beneficiaries to 357400. As part of further expansion of the scheme the target further enhanced to 595800. The Government of India allots 20855 MT of rice per month @ Rs.3 per kg under the scheme and the state government meets the expenses towards transportation and handling charges till the material reaches the Dealers. The expenditure on this account to the state government comes to around Rs.12 crores per year.

ii. Annapoorna Scheme

Annapoorna scheme originally was a 100 per cent centrally sponsored one. It has been transferred to the State from 1st of April, 2001. The Central

Government provides funds under Additional Central Assistance for purchase of rice from Food Corporation of India and State will have to meet the expenses on transportation and handling charges due to the dealers through a mandatory provision. As per the Scheme, destitutes above the age of 65 years who are not receiving National Old Age Pension are eligible for 10 kgs of rice per month free of cost. The Central Government have identified 44980 beneficiaries and the distribution of rice could not be satisfactorily maintained as the actual beneficiaries come over one lakh in Kerala. As decided by the State Government, all tribals who are unable to work have also been included under the scheme.

iii. Mid-day Meal Programme

The Mid-day Meal Programme aimed at providing nutritional support to primary school-going children, was introduced in 1995. Under this scheme, every child is entitled for three kg rice or wheat per month for 10 months a year where food grains are distributed in raw form and at the rate of about 100 gms per child per day where cooked meal is being served. The food grains are issued by the FCI to the nominees of the District Collectors without charging any price from them. However, a revolving fund of Rs.300 crores has been created by the Ministry of Human Resources Development to reimburse the cost of the food grains to the FCI.

1.4 Tribals in Kerala

A tribe is a social group, the members of which are tribals, who collectively live in common territory, have a common dialect, uniform, social organization and possess culture homogeneity having a common political pattern. A large number of tribal communities have been identified in India. The Anthropological Survey of India during 1967 recorded 314 tribal communities. According to 1991 census, the tribal population of India was about 68 million, comprising 427 communities and constituting 8 per cent of India's total population.[16]

---

[16] Dwivedi, A.P. (1993). Non-wood Forest products and tribals. Dehra Dun: International Book Distributors.

Primitive tribal groups or tribes identified as those living in an extremely underdeveloped stage in Kerala are Cholanaykans, Kadar, Kurumbas and Kattunaykans.

The tribal groups found in the three districts, viz. Idukki, Palakkad and Wayanad are Muthuvan, Irular, Kuruman, Paniyan, Naykan, Oorali and Kattunaykan.

1.5 Statement of the Problem

Government of India spends huge amounts as subsidy for distribution of food grains to the people through the Public Distribution System. It accounts for about one percent of the Gross Domestic Product of the country and about five percent of the annual expenditure of the Government of India. This expenditure is intended to provide food grains at lower prices to the customers, compared to Open Market prices. Among other states in the country, Kerala has been one of the best examples of PDS, in respect of its universal coverage and effective implementation of the system in general. Monthly per capita purchase of PDS food grains amounted to 4.58 kg (55 kg per annum) in Kerala. This has been the highest per capita purchase of food grains from PDS in south India. PDS provided 48 per cent of the monthly requirement of 11 kg of food grains per person in Kerala.[17]

Government of India made a shift in policy from universal rationing to targeting of poor customers by classifying the total population in to two: Above Poverty Line (APL) and Below Poverty Line (BPL). Despite this structural adjustment intended for reduction in expenditure, the subsidy expenditure is on the increase due to various factors like hike in procurement price of food grains, rise in cost of storage etc.[18]

---

[17] Kumar, Sunil. C.T, (2004). Systems Approach to Materials Management, Ph. D thesis. Trivandrum: University of Kerala.

[18] http://www.fcamin.nic.in/ (accessed on 18/5/2006)

The above factual position is supported by the report[19] "the Central Government is spending more amount for storage of food grains, than what it expends on Agriculture, Rural development and on Irrigation and Flood control taken together".

The more expensive the PDS, the more necessary that it is popular among, and regarded as important by, large parts of the population.[20]

Since TPDS is intended to target the poor people, the subsidy spent by the government for the scheme should be beneficial to the poor people and naturally they should utilize the benefits by purchasing the allotment of food grains under the scheme. Several studies have shown that there is under-utilization of the allotments under TPDS[21]. Therefore, the extent of utilization of TPDS in food grains, how and why remains as a major hurdle in improving the structure and system of the Public Distribution System.

Livelihood of the tribal population is under threat due to increasing degradation of the resources[22]. The targeting system ought to be effective among the tribal population. Therefore, performance of the TPDS in food grains, in terms of the utilization by the tribal population in Kerala, the impact thereof and the factors, if any , affecting the proper utilization are considered as the research problem of this study.

Probable factors leading to non-utilization/under utilization of allotment of food grains under TPDS:

1. Non-availability of Ration cards; either not issued or pledged.
2. Non-availability of food grains stock required for distribution in the Fair Price Shops.

---

[19] Sen, Abhijit. (2004). Report of the High Level Committee. New Delhi: Ministry of Civil Supplies and Consumer Affairs.

[20] Mooij, Jos. (1996). Food Policy and Politics, The Public Distribution System in Karnataka and Kerala, South India. Netherlands: Wageningen.

[21] Swaminathan, Madhura. (2000). Weakening welfare, The Public Distribution of food in India. New Delhi: Left Word Books.

[22] Bordignon Gian Pietro. (2006). The challenge of food security in India, The Hindu, 24th October, 2006. Kochi edition.

3. Non- issuance of food grains by the Fair Price Shop people.
4. Inadequate income for the tribals for their purchase of food grains from the Fair Price Shops even at the lower rates under the TPDS.
5. Requirement may be in proportion to number of members in the family whereas the allotment under TPDS is for an average sized family.
6. APL/BPL segregation – *i.e.* the Above Poverty Line (APL) tribals have to pay Rs. 8.90 per kg of rice and Rs.6.70 per kg of wheat under the TPDS, which may not be so competitive compared to open market prices.
7. Poor quality of food grains issued under TPDS.
8. Lack of awareness among the tribal population about benefits of TPDS like low price of food grains under TPDS for Below Poverty Line (BPL) people, Antyodaya Anna Yojana (AAY) scheme wherein Food grains are issued @ Rs.3 per kg, and the Annapoorna scheme wherein 10 kg of food grains issued to poorest of the poor, free of cost, etc.
9. Distance of Fair Price Shops from the tribal households.

1.6 Significance of the Study

Among the objectives of PDS as mentioned in 1.1 of this Chapter, achievement of the first objective, *i.e.* maintaining price stability is very difficult in the present scenario, since the universal coverage of the whole population is dispensed with by the shift in policy by the Government of India. Subsidy is restricted to the people below poverty line, and the economic cost of the food grains borne by the FCI is being charged on the consumption by the people above poverty line. Therefore, the people above poverty line cannot be expected to buy much quantities of food grain from the PDS. All put together, the quantity of food grains traded through PDS may not be significant enough to make a dent in the open market. As far as the second objective is concerned, *i.e.* rationing during times of scarcity is also not so relevant, since scarcity or non-availability of food grains has not been experienced in the country for so long, thanks to the Green revolution and further developmental and efficiency measures in the Indian agricultural sector. The third objective, *i.e.* raising the

welfare of the poor is highly relevant as far as the present day PDS is concerned. The last objective, *i.e.* keeping a check on the private trade is not there in the agenda of the Government today, since the present day view is that the private trade shall also be taken in to confidence, considering the pertinent role being played by them in the National economy. From the above discussion, it may be seen that the most pertinent and relevant objective of the present day PDS is the third one, *i.e.* raising the welfare of the poor.

A few studies on the Public Distribution System have been made in respect of Kerala. Most of the studies were made during the days when PDS with universal coverage was effective in the state.

In Kerala, the tribal population is around 1.4 per cent of the total population[23] *i.e.* 445740 out of the total population of 31838619[24], whereas the tribal population constitute 3 per cent of the total below poverty line (BPL) population in the state. It implies that the incidence of poverty among the Scheduled Tribes is more than twice that of the people in general in the state. The percentage of people below poverty line among the tribal population throughout the country is almost double that of the occurrence in Kerala.

The TPDS introduced with the concept of narrow-targeting, aims at reduction in expenditure on account of food subsidies and at the same time to provide maximum possible benefits to the poor.

Mihir Shah[25] states, "Lower off take by poorer people is also a reflection of the incapacity of the poor to buy food grain at even the PDS prices ". Further, the report[26] states, "the TPDS did not reach the poor where the PDS was weak".

Therefore, it is very significant to study the extent to which the tribal population in Kerala make use of the benefits provided by the TPDS in food grains. Based on the above pertinent points, this study assumes national

---

[23] Economic Review, 2006, State Planning Board, Kerala.

[24] Census of India, 2001, series 33, Kerala.

[25] Shah, Mihir. (2003). Why attack the food subsidy, The Hindu, 24th January, 2003.

[26] Sen, Abhijit. (2004). Report of the High Level Committee. New Delhi: Ministry of Civil Supplies and Consumer Affairs.

relevance even though the geographical area of the study is limited to tribal settlements within three districts of Kerala.

1.7 Objectives of the Study

The overall objective of the study is to find out, how the poor people among the tribal population utilize the TPDS in food grains.

The research is carried out with the following specific objectives.

1. To study the pattern of consumption of food grains by the tribal people in Kerala.
2. To evaluate whether the hunger needs of the poor people among the tribals in Kerala are being fulfilled by distribution of food grains through the TPDS.
3. To study the extent with which the TPDS in food grains has been able to facilitate the tribal people in Kerala to reduce their share of expenditure on food in the total household expenditure.
4. To analyze the factors affecting the utilization of the TPDS in food grains by the tribal population in Kerala.
5. To make suggestions for improvement on TPDS in food grains, for effective utilization by the tribal population in Kerala.

1.8 Hypotheses

1. Per capita good grains' consumption of the tribal population in Kerala is lower than the national average per capita consumption of food grains.
2. TPDS in food grains has got direct influence on reduction of food share in household expenditure of tribal households in Kerala.
3. There is no relation between the income level of the tribal households and the quantity of food grains purchased by them from the Fair Price Shops under TPDS, for consumption by the members of the households.
4. There is no relation between the number of members in the tribal households and the quantity of food grains purchased by the tribal households under TPDS.

5. There is no relation between the highest educational qualification among the members of the tribal households and the quantity of food grains purchased by them under TPDS.
6. There is no relation between the occupation of the head of the family of the tribal households and the quantity of food grains purchased by them under TPDS.
7. There is no relation between the proximity of the fair price shops with the tribal households and the quantity of food grains purchased by the tribal households under TPDS.
8. There is no relation between the expenditure on purchase of food grains by the tribal households from the Open market and the quantity of food grains purchased by them under TPDS.

   (*Food grains denote rice and wheat).

1.9 Period of the Study

The Targeted Public Distribution System has been introduced as a modification to the then ongoing system of Revamped Public Distribution System, in 1997. Since the targeting was on the basis of income criterion, it was considered to be of much interest for an in depth study, especially in Kerala, a food deficit state. Therefore, the study was undertaken from 1998 onwards. Survey of literature was carried out and available secondary data were also collected during the successive periods. The initial survey or the pilot study had been conducted in 2005 at two Tribal settlements, viz. Chemmankala and Podiyakala in Thiruvananthapuram district. After fine-tuning the Interview schedule on the basis of the experience/outcome of the pilot survey, the main survey was conducted during 2006 in the Tribal settlements in three districts, viz. Idukki, Palakkad and Wayanad.

1.10 Plan of the thesis

The thesis is documented in seven chapters including this chapter on introduction. Chapter II deals with the Literature Survey. Chapter 3 contains the methodology for the study, *i.e.* Research Methodology. Chapter 4 on

Presentation of Data presents the socio-economic characteristics of the tribal people in Kerala, data on the consumption of food grains by the tribal people, perceptions of the tribal people on the TPDS in food grains etc. Chapter 5 is devoted to the analysis of the data presented in the earlier chapter. Chapter 6 contains the important findings from the data presented and analyzed in the earlier chapters. This chapter on Findings and Conclusion also reveals the limitations of the study and the areas for further research. Chapter 7 contains certain recommendations based on the findings, to improve the TPDS in food grains for better performance.

Chapter 2
Literature Survey

2. LITERATURE SURVEY

Literature on PDS and related areas were reviewed and some of the relevant findings, comments and other details are mentioned in this chapter. An overview of the International Experience on Structural Adjustment made in the Public Distribution System is narrated below, since India's experiment with structural adjustment is relatively recent.

2.1 International experience of structural adjustment in PDS

The international experience, specifically that of Mexico, Sri Lanka, Jamaica, Zambia and Tunisia were reviewed to identify the impact of structural adjustment on food subsidies, and on the consumption, nutrition and food security of vulnerable populations. These experiences show that policies of structural adjustment have worsened economic and social inequalities and imposed further hardship on the poor. Structural adjustment has entailed a reduction in food subsidies and a shift from universal to targeted schemes in many countries. One of the means of reducing the food subsidy bill has been introduction of food stamps or coupons. The impact of structural adjustment on food subsidies and food security is evidenced by the experience in Mexico, Sri Lanka, Jamaica, Zambia and Tunisia, focusing on the effects of policy changes on food consumption and nutrition among the poor.[27] The choice of these countries is based on the fact that in all cases of food subsidy programmes underwent major changes in the course of structural adjustment, and all but Tunisia shifted to a targeted system of food stamps.

Mexico

Mexico had to reduce expenditure consequent to their debt crisis of 1980s. Budgetary pressures changed their food policy, by shifting from general to targeted schemes. CONASUPO or the National Basic Foods Company was the state enterprise that undertook the import, processing and distribution of

---

[27] Swaminathan, Madhura. (2000). Weakening welfare - The Public Distribution of Food in India. New Delhi: Left Word Books, Naya Rasta Publishers pvt. Ltd.

subsidized foods through a national chain of stores. To cross over the huge debt, food subsidy was cut by 80 per cent. In 1986, targeted food stamps programme was introduced. Targeting was of three types; based on income criterion, geographic targeting and one with an element of self-targeting as households had to go and register at local CONASUPO offices for the food stamps. The change in policy on food subsidy resulted in a decline in the consumption pattern and a shift towards a less nutritious diet.[28]

Sri Lanka

Sri Lanka had an effective and universal system of food rationing, providing heavy subsidy, which was introduced in 1942 as a war-time relief measure as done in India. In 1978, the policy changed from a universal ration to a targeted ration whereby only households with a monthly income less than Rs.300 were eligible for the ration. Again there was a shift to a targeted food stamp programme. Since the value of food stamps was fixed in nominal terms, the real value of the subsidy declined with inflation. Prices of several food commodities rose sharply with the removal of subsidies and devaluation. The shift from a universal ration to a targeted and non-indexed food stamps adversely affected consumption and nutrition among the poor. The experience of Sri Lanka shows that the food subsidy played a role in maintaining certain nutritional levels and the sharp decline in food subsidy in the late 1970s adversely affected nutrition.

Zambia

During the second phase of the growth of Zambian economy from 1974 to 1990s, the economy faltered and fell into a deep debt crisis. Several structural adjustment programmes were introduced. During adjustment, there were attempts to reduce the food subsidy for maize meal. Maize is the most important agricultural commodity in Zambia, accounting for about 70 per cent of the marketed value of all agricultural commodities. Subsidy policies have been geared both towards producers as well as urban consumers. The extent of consumer subsidy as a per cent of of the actual retail price varied from year

---

[28] Fox, Jonathan. (1992). The Politics of food in Mexico, State Power and Social mobilization. London: Cornell University Press.

to year, and peaked at 72 per cent in 1977. The adjustment and fall in incomes had led a large number of poor consumers to shift from high quality foods to maize meal, the only commodity with a stable price.

The next major change in food subsidies occurred in January 1989 when the government introduced a system of food coupons. Coupons were made available to all urban households but not to rural households. All households with incomes from the informal sector were eligible for coupons but the number of dependants was limited to six. By introduction of food coupons, a significant minority of vulnerable households were not able to use the system.

Jamaica

Jamaica is a country that is often cited as an example of a low-income country that has achieved high levels of human development. The outstanding health record as well as improvement in nutritional standards during the period 1960 to 1985 was clearly associated with widespread public support. Following an economic recession in 1977, structural adjustment was initiated, the pace of Liberalization quickened. A reduction in food subsidies and social sector expenditure in general was one component of adjustment in the 1980s. In 1984, general subsidies were eliminated and replaced by a targeted food stamp and an additional school-feeding programme. The real value of the food stamps was eroding over time. High inflation in food prices led to a steep rise in the cost of a minimum basket of commodities. In addition, as the price of basic food items rose, the quality of food deteriorated. Targeting has led to under-coverage of eligible persons. The identification of 'poor' households was based on a crude and simple survey with no attempts to verify reported incomes except through observing the 'quality of housing and consumer goods during a home visit.' Altogether, the new targeted system of coupons left out many of the poorest.

Tunisia

By 1980, Tunisia had graduated to the category of middle income countries and was 'considered a model of successful development'. There was boom during the decade 1972-82, driven by the growth of foreign exchange,

primarily from worker remittances, tourism and oil revenues. From 1983, however a crisis in the current account of the balance of payments developed and the burden of debt service rose. In response, orthodox stabilization and structural adjustment measures were introduced from 1986 onwards. As a part of these measures, a reduction of subsidies, including food subsidies, was attempted. A system of generalized price subsidies on a range of basic food commodities was operated in Tunisia. The system was universal and since there was no quantity restrictions, benefits were proportioned to consumption. The reforms undertaken in Tunisia were different from other countries and attempted to reduce the food subsidy by a combination of self-targeting and the introduction of quality differentiation. Subsidy was provided only for inferior quality goods, and therefore, only the poor consumed cheap food items. The share of food subsidies in total calorie and protein intake declined, with adverse effects on nutrition.

2.2 PDS In India

Ghose[29] narrated that the history behind introduction of the PDS in India is rooted in famines and food scarcities during the entire period of British colonial rule in India. The first one was the Bengal famine of 1770. An estimated 10 million people died in this famine that was essentially the consequence of plunder by the colonists of the East India Company. Between 1860 and 1910, there occurred 20 major famines and scarcities. The last famine in British India was the Bengal famine of 1943.

The aftermath of the Bengal famine resulted in severe food shortages all over the country and controls became all pervasive during 1944-47. After the partition, 82 per cent of the erstwhile population remained in India, supposed to thrive on the 75 per cent of the cereals producing areas in the undivided India. The granaries of Punjab and Bengal were mostly in the newborn Pakistan. The position of irrigated, arable land was still pathetic. Food grains Policy Commission appointed in 1947 reexamined the food grains policy of independent India. This committee, recommended, rather dreamt of, gradual

---

[29] Ghose, Ajit Kumar, (1999). 'Food Supply and Starvation: A Study of Famines with reference to the Indian Sub-Continent', In: Dreze, Jean (ed.), The Economics of Famine, Edward Elgar, UK.

abolition of food controls and rationing, and strongly suggested imports to create a central buffer to confront crop failures. The commission also emphasized the need to attain manifold growth in food grain production and chalked out a path to increase 10 million tonnes per annum till self-sufficiency.

In view of the recommendations of the commission, government had removed all controls on the food grains imposed in the wake of Bengal famine and World War II. In no time the prices of food grains started to skyrocket and immediately the authorities had to back track from abolition of controls. In September 1948 controls were reintroduced to rein in the price escalation.

Food grains Procurement Commission of 1950 suggested rationing in all towns with a population exceeding 50000, informal rationing in small towns and regulated supply of food grains to rural areas. The commission was in favour of government monopoly in food grains trade, but finally opted a middle of the road approach, which was equally opposed to total governmental control and the free reign of market forces.

The aforesaid course was the basis of India's food policy and it made ground for the seeding of our Public Distribution System.

The Food grains Inquiry Committee formed in 1957 dwelt deep into the creation of food buffer stocks and recommended to set up a food grains stabilization organization to monitor the procurement, logistics and distribution of food grains.

Rationing in various forms continued except for a brief nine-month period during 1947-48 and for a year or so during 1954-55. Imports under the US aided PL480 played a pivotal role in our food economy from 1957 through 1977, as a major source in replenishing our Public Distribution System.

Food Corporation of India came into being in 1965 with the objective of procuring food grains from domestic as well as overseas sources, and maintaining them to serve the public distribution system.

The transition from statutory rationing to a streamlined public distribution system has been evolutionary, from being a single source in ration supplies to the dual role of catering to statutory rationing and to counter balance the open market forces.

Even though the Public Distribution System is omnipresent in India, the benefits and effectiveness are arbitrary. Whereas in states like Punjab and Bihar it is rather weak in its reach, in Kerala and West Bengal a large section of people depend on it. The issue is not to supplement the market mechanism but to strengthen it. Food, for example, is typically undersupplied in poor and backward regions with weak trade channels. A market-based allocation would result in undersupply. In most states, for every rupee spent, less than 22 paisa only reached the poor. Despite the revamping, the benefits to the poor have not increased while the subsidy has. Short of drastic reform, it is unlikely that the cost-effectiveness of the PDS will improve.

2.2.1 Goals and objectives of PDS during 1945 to 1970

Taimni[30] stated that the rationale behind the PDS in its phase from 1945-1970 was evolved from the bitter experience of Bengal famine of 1943. The objectives of PDS were rather limited and short term during its nascent phase, *i.e.*, from the post war period to the advent of Green Revolution. It was intended to protect mainly the urban populace who were dependent on the open market for essential food supplies. Ensuring food availability through rationing system in urban centers was expected to ward off speculation and hoarding which resulted in undue rise in prices. When PDS entered into its second phase, the objectives have become ambiguous owing mainly to its widening of scope and beneficiaries. The ambitious scope included the supply of food grains at affordable prices to all sections of people, thus acting as an instrument of income transfer, stabilizing market prices and contributing towards the alleviation of poverty.

While the employment linked projects created infrastructure and assets like roads, afforestation and irrigation with employment opportunities for multitudes, the subsidized food grains supply proved to be a case of income transfer without any social obligations. Successive five year plans gave due weightage to PDS as a key instrument in controlling and stalling price fluctuations. These multiple objectives of the PDS were found to be too ambitious and often conflicting. Many undeserved sections have reaped the

---

[30] Taimni, B.K. (2001). Food Security in 21st century-Perspective and Vision,2001. Delhi:Konark Publishers pvt. Ltd.

benefits of PDS. PDS came into conflict with other programmes of income and employment.

A close observation would reveal that the following features formed the basis of our Food Policy however vaguely defined they might be.

i) The corner stone of our rationing policy/PDS was born out of the paranoia of food shortage during natural calamities up till the advent of Green Revolution.

ii) Keep food prices low, so as to benefit the consumer.

iii) Heavy reliance on legislative and administrative measures such as rationing, stringent controls on movement of stocks to pursue the objectives of food security for the people.

iv) Absence of visionary thinking and well laid out long-term goals, resulting in ad hoc measures.

v) Lack of perspective in external trade, buffer stocking and domestic deregulation.

vi) Founded on a complete mistrust of private trade either on ideological ground or past experience in failing to curb the market dynamism.

2.2.2 During the 1980s and After

Bhatia[31] revealed that in the changed scenario the welfare dimension of the PDS gained importance since 1980s, as a sequel to which many more rural areas got covered in many States and more recently PDS was linked to employment programs.

1980s witnessed a sea change when the agriculture sector started reaping the benefits of the Green Revolution making the objectives of PDS subservient to the production regime especially of wheat.

The country switched over from a situation of scarcity/dependence of heavy imports under PL 480 to a stage of self-sufficiency. The efforts in sustaining

---

[31] Bhatia. K.M. (1991). Famines in India. Delhi: Konark Publishers.

and optimizing the riches of the Green Revolution begun to produce results with the twin instruments of remunerative/attractive price and efficient and effective marketing of produce coming into effect. For assuring a remunerative price to the farmers, especially for wheat and paddy produce, procurement of these commodities was launched under the Minimum Support Price (MSP) operations. Before the onset of the sowing season, support prices were announced by the Central Government for certain selected commodities - rice and wheat being the most important of this basket. If, as and when the prices fall below the MSP, then FCI is obliged to purchase them from the regulated markets as the agency of the Central Government either directly or using the states or any of their corporations as its agents.

In order to sustain the Green Revolution procurement under MSP has become a permeate fixture, at times leaving huge stocks with the FCI. This has often created an ironic scenario in which wagon loads of food grains rotted in FCI godowns when food deficit states like Kerala, West Bengal, Karnataka, Maharashtra, Gujarat, Rajasthan etc. were craving for more. The main objectives of - again as yet undeclared - Food Policy, of which PDS is the sole most important manifestation, could be said to be:

i) To increase food production.

ii) To increase nutrition standards of the vulnerable sections of the society by distributing food grains at low prices through Public Distribution System.

iii) To maintain stock of food grains to meet the requirements of the Public Distribution System.

iv) To maintain buffer stocks to tide over crop shortages and to maintain stability of inter-seasonal prices, and

v) To achieve equilibrium in regional production and distribution of food grains.

From another angle the Public Distribution System can be seen both as an anti-inflationary as well as an anti-poverty measure.

In its anti-inflationary measure, the major thrust is to provide a set of inflation aloof supplies of the essential commodities to the consumers, thereby softening the hardships caused by rising prices, which nullify purchasing power of the consumer. By ensuring the availability of a substantial portion of the essential consumption at a stable, fair and affordable price, the poor and vulnerable sections of the society is safeguarded against inflation. By helping in maintaining the real value of one's purchase power and in this sense a powerful instrument - as good as any poverty alleviation programme - is coming to their help.

Pal and Mruthyunjaya[32] observed that the Public Distribution System coupled with employment generation and poverty alleviation programs effectively supported the twin objectives of price control and poverty alleviation and converged them to benefit a wider section of the people.

Another way of appreciating the goals and objectives is to see the PDS as a pivotal web of safety net currently operating in India, the most far reaching in terms of convergence as well as in terms of public expenditure (in subsidy) is the PDS. This system perceived to be the main safety net to protect the poor from short-run, price induced adverse effects of economic reforms. How far the perception is right, we have to examine.

Mooij[33] stressed that in the mid-1990s, almost sixty years after its inception, the Public Food Distribution System is still an issue in public debate and policy. It is presented and interpreted in different ways by different actors – even sometimes by the same actors in different context—and contradictory policy measures are introduced. For instance, on the one hand, the system is presented as very costly and inefficient. Since 1991, when India took on board various structural adjustment reforms, advocates of these policies have stressed the enormous waste of money implied in the PDS. On the other hand, the PDS is presented as the safety net par excellence to help the needy

---

[32] Pal, Suresh, Bahl. D.K. and Mruthyunjaya. (1993). Government interventions in food grain markets. The case of India. Food Policy.

[33] Mooij, Jos. (1996). Food Policy and Politics - The Public Distribution System in Karnataka and Kerala, South India. Netherlands: Wageningen.

through difficult periods (including the present one that results from structural adjustment). Since 1991, the PDS prices for consumers have been increased several times in order to bring down government subsidies. On the other hand, some State politicians have introduced great expansion of the PDS and have allocated large sums for this purpose. These are only a few examples of the many contradictions that surround the present day PDS.

Bapna[34] made an attempt to examine the characteristics of PDS as an institution that is now so controversial. A major breakthrough came in 1964-65 with the establishment of two institutions: the Food Corporation of India and the Agricultural Prices Commission (now Commission on Agricultural Costs and Prices). The former is a large parastatal trading corporation responsible for procurement, storage, transport and distribution of food grains. The latter advises the Indian Government on pricing policy for agricultural commodities. Since the mid 1960's, PDS served several objectives simultaneously, namely a) to cope with emergency situations, that is scarcity; b) to distribute food at fair prices to vulnerable people; and c) to guarantee remunerative prices to farmers. Over the years, these objectives have sometimes become mutually conflicting, as various observers have pointed out.

In 1992, a total amount of 21.7 million tonnes of food grains was distributed. This was about 13 per cent of total production, and results in an average per capita distribution of approximately 25 kg per year.

Until the beginning of the 1960's, the PDS was largely based on import of food grains. There was hardly any internal procurement. With the advent of the Green Revolution and the consequent increase in wheat, and later rice, production in certain areas of the country, procurement within India became the most important means of acquiring food. Wheat procurement takes place almost exclusively in North India. In the 1980s only three States, that is Haryana, Punjab and Uttar Pradesh, supplied more than 98 per cent of the total government wheat stock. The procurement of rice was less unevenly

---

[34] Bapna. S.L. (1990). Food Security through PDS: the Indian experience. In: D. S. Tyagi and Vyas, Vijay Shankar (eds.). Increasing access to food, The Asian experience. New Delhi: Sage Publications.

spread over the country; a fair amount came from Andhra Pradesh and Tamil Nadu, and Punjab was by far the most important supplier.

Apart from procurement, distribution was also rather unevenly spread over the country. The average distribution in the period 1983-88 was 21.7 kg per capita per year. In Kerala, per capita distribution came to almost three times this amount, while people in States like Bihar, Haryana, Madhya Pradesh, Punjab and Uttar Pradesh, received much less than the all-India average.

According to Dreze and Sen[35] the stability of food prices in India today is quite remarkable. For instance, during the drought of 1987-88, which led to considerable decline in food production, food grain prics increased by less than 10 per cent. This was largely due to large-scale sale of food through the public distribution system, which held very large stocks at the beginning of the drought. Clearly, the contribution of price stabilization measures to the protection of entitlement during crisis in India today is a major one.

PDS is also said to have contributed to an increase in physical and economic access to food. Per capita food grain availability increased from less than 400 grams per day in 1951 to more than 450 grams in the 1980s.

Bhalla[36] observed that in the 1970s and 1980s food prices rose at a rate much lower than the growth of per capita incomes. Of course, this increased access cannot be attributed solely to food policy.

According to Tyagi[37], it is a result of total development policy for the agricultural sector, in which food policy and the system of its management played a major catalytic role. On the other hand, several weaknesses and failures of the system are noted. The first is the persistence of endemic hunger and malnutrition. Average access might have increased, but there is still large-scale under nutrition.

---

[35] Dreze, Jean and Sen Amartya.(1989). Hunger and Public action. Oxford: Clarendon Press.

[36] Bhalla. G.S. (1994). Policy for food security in India, New Delhi: Institute for Studies in Industrial Development.

[37] Tyagi.D.S. (1990). Managing India's food economy; Problems and alternatives. New Delhi: Sage Publications.

Dreze and Sen [38] estimated that each year 3.9 million people die in India, over and above the 'normal mortality', due to causes related to endemic hunger and deprivation.

Harris[39] felt that within relatively well-off States, the poorest people sometimes fell outside the scheme. A second failure relates to the total concentration on rice and wheat, the exclusion of coarse grains, in the system. For this reason the PDS failed to protect the interests of the most vulnerable producers – who produce mainly coarse grains in the dry areas – and consumers- whose food intake consists in part of relatively cheap coarse grains. A third weakness is the decreasing financial viability of the system. In mid-1990s the system required an annual subsidy of more than 50,000 million rupees. Moreover, due to various price difference between the PDS and the open market has become marginal. Consequently the off take has come down. Considering these problems, it is not surprising that several observers in the 1990s claimed that the PDS has landed in a severe crisis and faces an uncertain future.

2.2.3 PDS - Overview

Das[40] analysed the evolution of the Public Policy of PDS, while studying the organizational framework and the operational aspects of PDS such as procurement, storage, distribution of essential commodities. The working of PDS was evaluated on the basis of consumer perception and image. The nature and extent of public participation in the actual working of this crucial public policy is also examined. The methodology developed serves as a model for further studies in the area. Major objectives of National Production-cum-Distribution scheme with the help of empirical data in the Konda District of the Telungana region of Andhra Pradesh were examined in the study.

---

[38] Dreze, Jean and Sen Amartya.(1989). Hunger and Public action. Oxford: Clarendon Press.

[39] Harris, Barbara. (1991). The give and take of calories: Tamil Nadu's food and nutrition policies and village food energy during drought in the early eighties. Delhi: Sage Publications.

[40] Das, Ojha Ghanshyam. (1987). Organization and Management of Public Distribution System, Delhi: Mittal Publications.

The PDS is a vital programme to correct the market imperfections and ensure distributive justice. In actual practice it is found to be far from its set-goals. The defective procurement, unscientific management, consumer dissatisfaction, deep-rooted vested interests, and consumer alienation rendered the programme ineffective, if not dysfunctional, causing a widening gap between promise and performance of a crucial public policy.

Narayanan[41] observed that two important aims of the PDS are to ensure a minimum quantity of the grains at reasonable prices to the low income sections of the community and to impart some sort of stability in the prices. The actual operation of the system in the past in terms of these objectives have been analyzed. Further, the corrective steps needed in this direction in the context of the likely future behavior of both supply and demand of food grains have also been identified.

Review of the objectives and performance of the PDS, estimating the demand for and supply of food grains in the next two years for each state, estimating the demand supply gap in the past and next few years by states, review of the role of PDS in bridging the gaps; and to suggest a model for the allocations of food grains from the central pool to the states, under PDS, incorporating the demand- supply factors were the objectives of the study.

The findings of the study were as follows:

The PDS has been able to fulfill its objectives only to a limited extent. Further, its objectives were not found to be quite in harmony while the present system of its operation.

Wide variation was seen in the consumption of rice, wheat and total cereals not one among the states, but also among the different income groups within a system.

The estimated demand in all the states, was increasing during the forecast period.

---

[41] Narayan S. (1986). Demand-Supply Gap and Public Distribution of Food grains in India. New Delhi: Agricole Publishing Academy.

Among the factors influencing the demand for food grains, population, income, price, family size and price of the substitutes were found important.

The Demand-Supply gap was increasing in most of the states. Thus the government faced serious problem demanding enlargement of the scope of PDS.

It was found that the price of the food grains was directly related to the Demand-Supply gap.

Therefore, in conformity with the objective of PDS to maintain stable prices of the food grains, the Demand-Supply gaps are to be narrowed down and made stable not only among the states but also over time. Thus the long run solution lies basically in raising the production of food grains.

PDS also aims at protecting the consumption level of the poor people. It was found that even the poor people are purchasing food grains from the open market. So, vigorous efforts are to be made in future to attain this objective.

Krishnaji and Krishnan [42]compiled and edited two studies and observed as follows:

i. It has been attempted to contribute to understanding the changes that have taken place in the per capita consumption of food, both over time and across states, and the factors that seem to under lie these changes. The author has stated that any analysis of food security and government intervention in food market must be premised on a firm understanding of the changes as mentioned above.

   To establish whether the decline in cereal consumption in rural India is in fact an algebraic artefact, and to understand fully the nature of change in the composition of foods in the diet and its implications for the extent of hunger in the country were the objectives of the study. In particular, it focused on the substitution between cereals and other foods, as well as substitution among cereals.

---

[42] Krishnaji. N. and Krishnan. T. N. (2000). Public Support for Food Security, New Delhi: Sage Publications (India) Pvt. Ltd.

It is established that the poor continue to be the most vulnerable to erosion of purchasing power through inflation in cereal prices, although the extent of this vulnerability appears to be declining.

The pattern of change in taste implies a consistent switch away from cereals over time. This is more apparent in rural areas than in urban; and more evident in marginal budget shares than in the subsistence parameters, the study has revealed. In many instances, the decline in the preference for cereals has been accompanied by a taste change in favour of milk and milk products, and meat, eggs and fish; the evidence is more compelling in rural than urban areas.

Hence the major finding is that the per capita consumption of cereals has declined, not just on average, but also among the poorest 25 per cent of the rural population.

ii. Economic access and physical access to food grains in the rural and urban sectors were measured.

Attempt has been made to examine some of the issues, regarding food security and their implications for PDS reform at a disaggregated level from the perspective of changing consumer choices and preferences dictated largely by availability.

Going by the conventional measures of food security, namely, measures of economic access and physical access, substantial improvement seems to have occurred in food security across states in India.

Swaminathan[43] analysed the relevance and importance of Food security , that is, the policy of food distribution as implemented by PDS in a land with millions of poor and undernourished persons as well as the threat to food security in the present situation of liberalization, structural adjustment and associated weakening of the welfare systems etc. The food deprivation and food insecurity persisting on a mass scale has been established. It is emphatically claimed that the PDS has failed in large parts of the country to provide

---

[43] Swaminathan, Madhura. (2000). Weakening welfare, The Public Distribution of food in India. New Delhi: Leftword Books.

nutritional support to the people and requires genuine reform. The analysis shows that the big picture is one of low utilization, limited access to food among the poor, rising prices and large - scale leakage from the system. Observed Kerala as an exception to this, by finding that coverage of PDS is near-universal, where the majority of the people have access to fair-price shops and where delivery system functions without excessive corruption and malpractice.

The Policy changes in India since 1991, arguing that universal coverage is an extravagance that a poor country like India cannot afford, reflected in specific schemes like Revamped PDS in 1992 and Targeted PDS in 1997 are discussed in detail establishing well as to how the policy changes have dismantled PDS with serious implications for food security among the poorest of households. The costs of targeting are also elaborated. The costs are very high whereas a large majority of the population is vulnerable to food deprivation.

Broad targeting or near-universal coverage is the first recommendation. The case against narrow targeting is well established, by explaining the demerits of the income poverty based approach. It is also substantiated that the quantity of supply should be increased to provide minimum nutritional support to participant households. Monitoring the quality of food grains, control over food prices, increased food grain production and procurement, administrative mechanisms and the need for empowering the poor in augmenting their capacity to purchase the PDS supply etc. are the main issues raised by the author through his study, to strengthen PDS as an effective means of providing nutritional support to the majority of our population.

Kannan[44] examined the question of food security viz- a- viz food availability and self sufficiency in production. Even though it is unrealistic to expect food self sufficiency in Kerala, considering the cropping pattern in the state, food security has been enhanced considerably through a pro-poor public policy regime. This situation is being challenged as a result of the shift in policy of the Government of India with regard to the Public Distribution System in the country. The fear that this policy shift will accelerate the fiscal crisis of Kerala has

---

[44] Kannan, K.P. (2000). Food Securityin a regional perspective. Working paper No. 304. Thiruvananthapuram: Centre for Development Studies.

been expressed and therefore should it decide to continue with the present system of food security.

It is concluded that it will be a hard choice for Kerala either to continue with the universal coverage of PDS involving unsustainable subsidies or to restrict the PDS only to the poor with implications for enhancing the state's vulnerability to food security.

Mishra[45] conducted the study on various economic aspects of Public Distribution System of food grains in Orissa, like its rationale and working, buffer stock and role of FCI, procurement issues etc., as an attempt to help the Government in formulating suitable policies in the matter.

Provided a critical account of the measures undertaken in Orissa for equitable distribution of the available supplies of food grains from the period of the Second World War till 1980s. Inadequacy of quantities of food grains supplied, uneven distribution of the items among the different income groups, unstable prices of food items and irrational functioning of the ration shops in rural areas etc are the key issues identified in the study.

Empowering the poor in purchasing the PDS supply, universal coverage, strengthening the FCI, setting up Civil Supplies Corporation in the state, increase producer's price, strengthen Laws for effective procurement, sealing the borders to check smuggling of rice etc., are the suggestions of the author in resolving the serious issues of Orissa in PDS.

It was revealed in the study that the People of lower income consume less rice and high income group consume more.

Mooij[46] analysed the effects of food distribution policy, in terms of consumption, profit and power as well as the implications of the experiences with the Public Distribution System for a conceptualization of the Indian state.

---

[45] Mishra, Bhagabat. (1985). Economics of Public Distribution System in Food Grains. New Delhi: Ashish Publishing House.

[46] Mooij, Jos. (1996). Food Policy and Politics, The Public Distribution System in Karnataka and Kerala, South India. Netherlands: Wageningen.

The importance of PDS in Kerala politics, in the backdrop of the agitations against the food shortage in 1964 is discussed in detail.

Commented about the policy change towards tight targeting. Targeting is not necessarily the right way. The reduction of objectives to one, *i.e.* support the most vulnerable households, is preferable in the sense that it gives the right priority and that it creates more clarity than there is at present. The present system of food distribution has several objectives that, moreover, sometimes conflict with each other. The result increasingly expensive system that fails to realize its objectives. On the other hand, the advantages of such a multi-purpose policy is that it can count on broad support. Recommended to frame a food policy that is effective and viable so as to increase food security with sufficient social and political support. The more expensive the PDS, the more necessary that it is popular among, and regarded as important by, large parts of the population.

Venugopal [47]felt that in its essence, the concept of food security must mean that all members of every household, particularly those living in rural areas, should have adequate access to food grains. Unfortunately, policy makers in India have tended to ignore this fundamental postulates with the result that the poor in India often do not have enough to eat. And this despite the fact that the country is producing enough food grains to sustain its entire population.

The reasons for this iniquitous situation has been investigated and suggests ways to remedy it. Identified that some states which did not produce enough food grains had a far better record of providing food for the poor than states which had a surplus. In addition, even though the Union Government spends a large sum of money to subsidize the PDS, the rural poor have not benefited to any significant extent.

The intensity of hunger in rural poor household, how hunger at the rural household level defeats self-employment strategies, financial constraints involved in the rational use of food grains in rural wage employment programmes, how the PDS can be reoriented to serve only the poor, and the

---

[47] Venugopal.K.R. (1992). Deliverance from hunger, The Public Distribution System in India, New Delhi: Sage Publications India Pvt. Ltd.

need for involving the community in food management were the most important issues discussed.

Unless the chronic and widely prevalent problem of endemic hunger is tackled, other dimensions of poverty- including education and health-cannot be effectively addressed. Argued that the lead role in this strategy should be that of the Central Government, with support from the State Governments, so that freedom from hunger becomes an attainable basic right.

Concluded that procurement in a projected cycle of five years should form the basis for determining the allocations for the PDS, rural development and employment programmes, nutritional programmes, and the non-poor, so that specters of droughts and imports do not deter a policy in favour of the poor.

Affordability for the poor and availability for the non-poor should govern Indian food management.

Kabra [48]has dealt with various aspects of the PDS in the context on India's political economy in general and of her food system in particular. Gone in to the question of mercantile capital and its relationship with the state processes and character in the context of the ongoing processes of agrarian change and the evolution and working of India's food policy in its varied aspects, including those arising from inter-state diversities. It shows how the circuit linking food and development remains incomplete despite large scale state interventions leading to notable gains in production. Evolved an unexplored approach to its understanding by working out the implications of the macro-level constraints and possibilities highlighting the factors determining access indigent sections have to this component of this food system. They explicate the mechanics of the conflict between the objective of protecting the nutritional levels on the one hand, and making contribution to overall price stability on the other. Current policy concerns like closer targeting for the poor, particularly in rural India, and viability of the Fair Price Shops, and the question of subsidies have been analyzed in depth. Organizational and administrative issues in their rich regional diversity have been highlighted by a detailed case study based on hitherto untapped primary and secondary sources.

---

[48] Kabra, Kamal Nayan. (1990). Political economy of Public Distribution of Food in India, New Delhi: Ajanta Publications.

Based on a careful analysis of facts, theories, operational problems and policy and administrative alternatives, the interplay of various aspects of socio-economic reality in the sphere of an important and ongoing form of state intervention in the food economy of India has been brought out.

Jetro[49] emphasized that in Japan, with rapid increase in per capita income, consumption of food stuffs has gradually decreased as a percentage of the total household budget as in other countries. But despite a decrease in the percentage of the budget devoted to food stuffs, consumption expenditure in absolute terms has increased about 7 to 8 percent each year. The total consumption of calories per year was estimated in 1970 by the Ministry of Agriculture and Forestry at 2500 per person per day. This compares to 3200 per person per day in the U.S., 3150 in the U.K., 3100 in France and 2960 in West Germany. It is expected that there will be a shift from rice/starch to meats, vegetables and fruits in the near future.

Taimni[50] felt that the process of distribution of goods and services evidently assumes singular importance, to improve the standard of living of the people. The role of the Retail trade and the PDS are significant, which can be overlooked only at the peril to the weal of the community.

The present PDS is not characterized by any of the essential features – effectiveness, coverage and its capacity to meet the requirements of the Public at fair prices for all times.

Kabra[51] conducted the study based on the one hand, on primary data obtained through a sample survey covering the whole country, and on the other, an analysis of secondary data about different aspects of the PDS. It examined the evolution and operation of its overall design as a policy and a programme as an integral part of the food economy of India, taking in to account its regional specificities. Its emphasis is on both various socio-economic variables and the administrative arrangements for regularly

---

[49] Japan External Trade Organization (JETRO). (1982). Planning for Distribution in Japan- Marketing Series-4.

[50] Taimni.K.K. (1975). Studies in retailing, Consumers' Co-operative & Public Distribution System, Poona: Hashad Prakashan.

[51] Kabra, Kamal Nayan and Ittiyera, Anil Chandy. (1992). The Public Distribution System in India, New Delhi: Eastern Books.

delivering fixed quantities of certain essential commodities at inflation-insulted prices. Through an analysis of the interaction of these factors in their macro and micro aspects, it attempts to bring out the dynamics of the PDS and place it against the background of the varying objectives sought to be achieved through this state intervention in the market processes. In the context of the twin questions of target-group orientation and viability of Fair Price Shops, the study evolves an integral package of policy and administrative measures for increasing the effectiveness of the PDS as a component of the minimum needs programme for the poor.

In the present circumstances, it is very clear that the dual market for essential commodities is dominated by its open and uncontrolled market segment. The dangers of increasing poverty and rising prices which are constantly present in the economy cannot be effectively dealt with without strengthening the PDS. There is thus an urgent need to introduce special measures for radically improving the level of access to essential commodities specially for the poor. First and foremost condition for improving access is to increase the quantity of the cereals and pulses channelised through PDS.

Gopalan[52] reviewed the experience of the PDS in India in its historical perspective. Review of the structure and operation of the PDS in Kerala against the background of the demographic, social and economic factors affecting the system, evaluation of the working of the Kerala State Civil Supplies Corporation, estimation of the impact of the Corporation on the internal availability of food and the prices of essential articles in Kerala; and suggestion of measures to improve the working of the State PDS based on the findings of the study were the objectives of the study.

Concluded that the PDS network expanded in size over the years (1971-1980) by 2.8 per cent, whereas the PDS off take declined from 15.62 per cent of the net production of Cereals in 1980 to 13.24 per cent by 1990. Increasing population and decreasing rice production is the reason for food deficiency in

---

[52] Gopalan, Puthusseri (1991). A Syudy on the Public Distribution System with special reference to the Kerala State Civil Supplies Corporation, Calicut: University of Calicut.

Kerala. Impact of the Supplyco on the availability of food and the price level were very negligible, *i.e.* 1 to 4 per cent. (After 1981 it rose to 10 per cent per capita food availability in the state). Majority of consumers prefer PDS in comparison to Open market.

Suggested that targeting is a necessity; only for Poor and Middle class. Consumer education programme to be launched. Watch dog committee to be formulated. Consumer representatives, local bodies and Govt. officials to be members of the committee. Regular supply of food grains to be ensured under PDS. Quality to be improved. Correct weights and measures to be ensured. Black-marketing to be stopped. Viability of the Ration shops to be ensured.

George[53] analyzed the impact of the supplies through the PDS on consumption level of the poor and redistribution of income among different income groups in Kerala and came out the positive findings.

Mooij[54] stated that the Case Study on Pattambi, Kerala give no reason to think that food subsidy reaches the poorest people particularly, but it indicates that the poorest households were interested, and purchased rationed commodities whenever they were in a position to do so. Their access to food was however, somewhat restricted, as a result of poverty (no money to buy rationed commodities, Ration Cards mortgaged etc.), the specific conditions under which food grains are distributed (no possibility to buy on credit, Ration shops open only for limited time etc.) and the fact that a substantial amount of subsidized food grains never reached the cardholders.

Dreze and Sen, et.al[55] pointed out that Kerala's achievements in the fields of health, nutrition and poverty alleviation are impressive. A crucial role is played by the PDS. The System has added substantially to food Security in the state.

---

[53] George. P.S. (1979). Public Distribution of Food Grains in Kerala, Income Distribution and Effectiveness, Research Report- 7, Washington: International Food Policy Research Institute.

[54] Mooij, Jos. (1999). Food Policy and the Indian States, The Public Distribution System in South India, New Delhi: Oxford University Press.

[55] Dreze and Sen. (1989)., Franke and Chasin. (1992)., Kannan.K.P. (1995). Kerala as a model of PDS, Thiruvananthapuram: Centre for Development Studies.

Poverty alleviation and increasing food security have occurred even while the economy was stagnant. Thus it is concluded that well designed and well implemented prorammes among which the PDS deserves a prominent place, can help to reduce hunger and deprivation.

Bora[56] inferred that although it is an in-depth study of a state (Maharashtra), its general applicability is nationwide. The food problem in India still continues, in spite of the PDS. Serious attention has to be paid to the administrative aspect of this gigantic problem in the country. Three major activities of food administration, namely, procurement, storage and distribution of food grains have been studied. Found that majority of consumers do not purchase all their requirements from fair price shops, however, felt that the PDS must be continued even if the food grain situation improves substantially. So long as problems like poverty, unemployment and underemployment persist in our society, Government will have to continue to provide grains at cheap rates at least to the vulnerable sections of the community.

Indrakant[57] suggested that distribution of food coupons to be made once in two years, to avoid the effects of the inefficiencies of the present PDS.

In the article,[58] it was highlighted that the Government supplies One Million tonnes of heavily subsidized rice and wheat to states for sale to the people living above poverty lines (APL), since most of these people (APL) don't buy from PDS shops, these stocks are diverted to the open market. Subsidy works out to Rupees seven a kg for wheat and Rs.6.15 a kg for rice, the average being Rs.6.65 per kg.

It is to be noted that the APL Ration Cards number around 129.2 million, whereas the APL households are only 115.2 million in India.

Food Ministry's latest stated economic cost of wheat (including procurement, storage and other miscellaneous expenses) comes to Rs.13.07 a kg. It is issued

---

[56] Bora.P.M. (1982). Food Administration in India, Delhi: Ajantha Publications.

[57] Indrakant.S. and Rao, Nageswara. R. (2003). Working of Food Coupon Scheme in Andhra Pradesh, Hyderabad: Osmania University.

[58] Government 'Subsidizes' Open market sale of food grains, Article in 'Business Standard', 26th November, 2007.

to the states for sale to non-poor families at Rs. 6.10 a kg, about Rs. 6.97 a kg lower than the cost.

Similarly, in the case of rice, the economic cost comes to Rs.14.45 a kg, against the issue price of only Rs.8.30 a kg, thus, involving a subsidy of Rs.6.15 a kg.

In percentage terms, the subsidy element comes to 53 per cent for wheat and 42.5 per cent for rice.

The monthly entitlement of PDS food grains for APL families is 35 kg; the same as for BPL families or the poorest of the poor households covered under the Antyodaya Anna Yojana (AAY).

The present computation of economic cost and subsidy on wheat and rice does not take in to account the hefty increase of Rs. 150 a quintal in the procurement price of wheat for the crop that is now being planted.

The issue prices at which the Centre supplies the food grains to the states for the PDS were fixed in July, 2002 and have not been revised in past 5 years though the procurement prices and hence, the economic cost of grains, have been rising steadily every year.

Few state governments openly concede the fact that much of the stocks allocated for the non-poor find their way to the Open market. But last week, Delhi Chief Minister Sheila Dikshit publicly stated that the non-poor people do not buy food grain from the fair price shops and the grains allotted to these shops for them were casually diverted to other destinations. She also proposed to take about 40 per cent of households falling in the APL category out of the PDS network.

The Centre allocates about 8,93,000 tonnes of wheat and rice to the states every month for the APL families. Since September 2006, an additional 100000 tonnes of wheat is being given to the states every month to keep open market prices stable.

Where people living in the poverty bracket are concerned, the central issue prices are pegged at Rs.4.15 a kg for wheat and Rs.5.65 a kg for rice, since 2002. This entails a subsidy of Rs.8.92 a kg for wheat and Rs.8.80 a kg for rice.

For the AAY Scheme, meant for the ultra poor households, issue prices have been kept at Rs. 2 a kg for wheat and Rs. 3 a kg for rice, involving a subsidy of over Rs.11 a kg in both cases.

Majumder[59] examined to what extent, the food distribution mechanism ensure the interests of the income-poor people in terms of their steady access to essential commodities from the Public Distribution System. Study aimed at covering food security of those people who have less access to food for their survival. It considers food-poverty as a basis for searching whether Public Distribution System works to ensure food security of people targeted. The Public Distribution System as a social safety net can be appreciated by the fact that aggregate availability of food grains per se is not enough to ensure the ability to acquire food grains. Production does not automatically guarantee consumption. The mere presence of food in the economy or in the market, does not entitle a person to consume it. Even the ability to buy may not guarantee food security, unless there is an efficient distribution system. Colonial history of India also confirms that "the major famines and scarcities occurred during a period when India was a food surplus country and was in fact exporting large quantities of food grains". At the national level at least, famines in British India "were not precipitated by absolute shortages of food caused by uncontrollable vagaries of nature". Historically, we find no one-to-one correspondence between per capita supply of food and deprivation of a section of population in terms of food consumption. At the all India level, between 1972-73 and 1993-94, according to National Sample Survey Organization (NSSO) data, per capita consumption of cereals declined from 15.3 to 13.4 kg per month over two decades. During these two decades ending 1993-94, there occurred a steady decline in the food share from about 73 per cent to 55 per cent at the all-India level. This decrease occurred in all regions of the country. As informed by the NSSO, food shares declined for all income groups, including the first (poorest) quartile. This is in spite of the fact that the

---

[59] Majumder, Bhaskar. (2004). Poverty, Food Security and Sustainability, Public Distribution System in India. Jaipur: Rawat Publications.

poor continue to spend most of their budget on food and much higher than the percentage spent by the non-poor on food. This seems to confirm Engel's law, which says that economic development is accompanied by declining food shares. There is a realization that the PDS, as it has evolved by now, may actually be serving only a limited proportion of the poor and thus, the target setting and subsidy question should receive attention for solution. It has been pointed out that in view of the GoI, two major aspects of PDS that need a national consensus are:

(i) the norms of excluding the non-poor, and (ii) limiting the open-ended subsidy because of FCI operations.

The rationale behind the TPDS has been explained as "The need for reducing government expenditure under the stabilization programme calls for a discriminatory approach in providing PDS benefits and hence should be targeted only to the vulnerable groups, since malnutrition is caused by an unequal distribution of food and misplaced consumer choices rather than inadequate supply. So comes the targeted system. "When there is a limited amount of food, with the market dividing it among the population according to their respective purchasing power and market pulls, a worsening of the relative position of some groups in the scale of money incomes can lead to an absolute decline in their ability to command food. Observed that many income poor (BPL) households have remained cardless. And many BPL households have the yellow cards, which are meant for non-poor (APL).

Birla Institute of Scientific Research[60] observed that the costs of PDS managed by FCI and other agencies have become inordinately expensive and uneconomic.

Pathania[61] found that amount spent on Subsidy on food under the Public Distribution System in the country during 1990-91 to 2002-03 as given in the Table 2.1.

---

[60] Birla Institute of Scientific Research. (1980). State in Food Grain Trade in India – A Study of Policies and Practices of Public Distribution System, New Delhi: Vision Books.

Table 2.1. Subsidy spent by Government

Year	Amount in (Rs. Crores)	Percentage of total Govt. of India Expenditure
1990-91	2450	2.33
1991-92	2850	2.56
1992-93	2785	2.27
1993-94	5537	3.90
1994-95	4509	2.80
1995-96	4960	2.78
1996-97	5166	2.46
1997-98	7500	3.23
1998-99	8700	3.11
1999-2000	9200	3.03
2000-01	12125	3.61
2001-02	17612	4.83
2002-03	21200	5.17

Suggested that Mobile Fair Price Shops may be operated on holidays including Sundays till late evening so as to cater to the needs of the people residing in far flung areas.

Gupta[62] observed that the Public Distribution System has two assumptions as follows:

i. Main bottlenecks in relation to economically vulnerable sections is lack of assured supply, and not purchasing power.

ii. By acting as an intervening system, the Public Distribution System can have significant regulatory impact in the prices so that the overall price level could be brought down to desirable levels.

---

[61] Pathania, Kulwant Singh. (2005). Public Distribution System, Status, Challenges and Remedial strategies, New Delhi: Kanishka Publishers.

[62] Gupta, Aravind. (1977). Public Distribution of Food Grains in India, Ahmedabad: Indian Institute of Management.

Revealed that:

i. Much heavier erosion in the case of lower expenditure classes than in the higher expenditure classes. No cheaper food grains can be substituted since they are already consuming cheapest food grains.

ii. Analysis confirmed that the PDS in India had not been able to give any protection to the vulnerable population. There was no evidence found to suggest that PDS has been effective in containing the food grain prices.

Chopra[63] observed that although many operational problems creep in to the day-to-day working of FCI, yet with greater efficiency it is supplying food grains to the PDS at the right time, at right place and in required quantities, whereas quality aspect has to be taken care of.

Hinton[64] observed that Tribute in the form of husked grain was required by Law from eight provinces in China even during 1827.

Evaluation Report on Revamped Public Distribution System[65] observed that:

i. Sub standard quality of food grain issued and deficiency in quantity.

ii. Major lacunae relating to Vigilance Committees.

iii. Strong need to consider local situations (socio-economic and cultural) regarding preferences of commodities. Area specific approach needs to get due weightage in the scheme for addition and alteration of items under distribution.

Hubbard[66] pointed out that according to the Bolshevik view, though the capitalist retailer may study the consumer demand, it is not because he wants to place his customers as an end in itself, but rather to attract customers,

---

[63] Copra. R.N. (1976). Operational problems of the FCI as a Supplier to the PDS (paper) Ahmedabad: Indian Institute of Management.

[64] Hinton, Harold.C. (1956). The Grain Tribute System of China (1845 - 1911). Peking: Chinese Economic and Political Studies.

[65] Programme Evaluation Organization Report on Revamped Public Distribution System, 1993-94. (1995). New Delhi: Planning Commission.

[66] Hubbard, Leonard. E. (1938). Soviet Trade and Distribution, London: Macmillan and Co.

increase his turn over and make increased profits. Hence the high class demand of the wealthier portion of the community plays a disproportionately greater part in determining production than the demand of the masses for standard consumption goods. In a socialist state, goods are produced for consumption and not for profit.

Manual on the Organization of Food Control and Rationing[67] publicized as follows:

"Rationing"

In a few days ration cards will be distributed to all householders. Keep them carefully. Without them you may go hungry. They are more valuable than money.

Why rationing

So that all whether poor or rich may share and share alike all the available food stuffs in the city. Rationing is neither a penalty nor a hardship. It only ensures to you what you need and prevents hoarding.

Who is afraid of rationing?

Only hoarders and profiteers. You who have ration card, will get what you need.

Jha[68] inferred in his study that the system of rationing introduced by the British is said to be the forerunner of the existing PDS. It is an anti-inflationary measure having significant bearing on stabilizing prices and in improving the nutritional standards of the poor. Thus the PDS can play an important role in poverty alleviation.

Koshy[69] revealed that a significant portion of important commodities like rice supplied for the PDS is siphoned off to the open market even in a state like

---

[67] Manual on the Organization of Food Control and Rationing. (1944). Government of India, New Delhi: Department of Food.

[68] Jha, Jai Prakash. (1992). Food Distribution in Tribal Areas: A Case Study, Quoted in: Yojana, May 15,1992, Vol.36, No.8, p.22.

[69] Koshy, Abraham. (1991). Malfunctioning of the PDS: An empirical analysis, Quoted in: Vikalpa, January-March, 1991, Vol.16, No.1,p.48.

Kerala, where the system is considered to be well developed is a matter of concern for policy makers and administrators. It would be beneficial to devise certain measures, which would reduce, if not eliminate, such tendencies. Improving and reinforcing the monitoring and control mechanism and processes of the PDS is one obvious solution to at least reduce the extent of malpractice.

Chattopadhya[70] revealed that essential commodities like grains and rice supplied through the PDS, in general, provide a contrast in different quality sold in the market. Most of the times, deterioration in quality occurred during the period in which the grains remains stored. Secondly deterioration in quality occurs due to infestation. Thirdly, careless handling, exposure and methods used in the course of distribution result into deterioration also takes place because of inadequate storage facilities, unscientific preservation techniques and reckless application of disinfestation agents against pests and rodents, which leads to extensive damage to the grains in various ways.

Bahl[71] advocated in his study that the operation of PDS itself , how-so-ever, efficiently managed to achieve a limited objective of assuring equitable distribution of available supplies to the economically vulnerable sections of the society. To expect the PDS to have any healthy effective way of stemming the ever-rising prices of goods covered by it. It will be only a too wishful thought in as much as the stabilization of prices of distributable goods will singularly depend upon relative stabilization of prices of various inputs and other factors including incidentals on account of rising freight cost, direct and indirect tax, etc. which go into the determination of ultimate cost of such finished goods.

Gupta[72] studied the effectiveness of PDS. He examined the price stability as achieved through the operation of PDS using econometric models. He discovered that the quantities required to meet the need was much higher than what could be generated internally through procurement only. The

---

[70] Chattopadhya, p. (1982). Public Distribution of food grains, Quoted in: Commerce Annual, November, 1982, p.20.

[71] Bahl, P.N. (1974). Co-operative Distribution of Controlled Cloth – A Study in Triumph, Quoted in: Indian Co-operative Review,January,1974, Vol.XI, No.2,P.45.

[72] Gupta, Arvind. (1974). Public Distribution of food grains in India, Ahmedabad: CMA, Indian Institute of Management.

additional requirements were several times of the total food grains distributed through the PDS.

Sud[73] pinpointed that several social economic as well as geographical features, besides the other local conditions, decide, the shape of the PDS system that is needed in a particular State. The conditions of hill states are entirely different from those in the plains, remote, interior and far flung areas, as the hilly tracts may need mobile rather than static outlets for the PDS. The stress now being laid on increasing the numbers of mobile vans engaged in these areas, therefore, well placed.

Sinha[74] stressed that the PDS did not satisfy needs of the poor for whom it was intended. PDS should take up the distribution of coarse grain and oils as it formed a major part of the poor man's diet.

Mooij[75] opined that impact of PDS as a check on open market food grain prices and as a safety net for the poorest sections of the population is minimal. If PDS is helpful, it is so for the wealthier groups, the private traders and the officials working within the system. If PDS functions as a safety net, it does so far the politicians and policy makers. It enables them to pretend that there is a solution available to overcome the "adverse side effects" of structural adjustment measures, meanwhile continuing these policies. In other words, the frequent reference to PDS hides the fact that in reality the position of the poor is not taken as a serious priority in policy making.

Suryanarayana[76] examined the incidence of food subsidy in India by estimating elasticity of PDS beneficiaries with respect to household total expenditure. The elasticity is similar to angel elasticity and can be used to measure the progressive/regressive nature of PDS. The estimated elasticity

---

[73] Sud, Surinder. (1992). Operating Revamped PDS Effectively, Quoted in: Kurukshetra, My, 1992, Vol.XI, No. 8, p.6.

[74] Sinha, Yashwant. (1991). Need to streamline PDS Stressed, Quoted in: The Sunday Tribune, January23, 1991, p.9.

[75] Mooij, Jos. E. (1994). PDS As Safety Net Who Is Saved, Quoted in: Economic and Political Weekly, January 15, 1994, Vol. XXXIX, No.3, p.124.

[76] Suryanarayana, M.H. (1997). Measuring Incidence of Food, Quoted in: Indian Journal of Economics, January, 1997, Vol. LXXVII, No. 306, p.303.

show that the PDS is progressive in its incidence across expenditure groups with respect to all commodities except pulses and coal in rural India and only coal in urban India. The degree of progressiveness differs between commodities. However, these results are subject to one limitation. They are based on the assumption that persons who depend only on the PDS for their purchases buy their total entitlements from it. One important problem with the PDS is that the commodity quotas for a given period should be brought at a single purchase. Sometimes it may so happen that the poor do not buy their entire quota for want of cash. In such an event, our estimates of elasticity may overstate the degree of progressiveness in the PDS. Similarly, sometimes the rich do not buy their quota because of the poor quality of items sold under the PDS. In such cases our elasticity would be understating the degree of progressiveness.

Ghosh[77] revealed that one very important difference in India as compared to the East Asian adjustment experience, is the decline in food security, which has been experienced by most workers. The Indian strategy has been characterized by attempts to cut consumer subsidy on food grain supply through Public Distribution System. This subsidy was already very low by East Asian standards. It has been shown that in most Indian States the value of the income subsidy via PDS was less than one or two persons per day of employment per family per month. He emphasized on the need of continuing subsidy on PDS for providing food security to vulnerable section.

Dev and Ranade[78] advocated that among the many antipoverty programmes in India, some of these programmes with some changes or effective implementation can be used as safety nets during the transition period. Food management including Public Distribution System (PDS) and rural public works programmes can be used for this purpose. The present PDS is highly centralized system and the delivery systems are poor in rural areas. Linking PDS to special feeding programmes are needed because the problem of malnutrition is acute and widespread.

---

[77] Ghosh, Jayoti. (1997). India's Structural Adjustment: An Assessment in Comparative Asian Context, Quoted in: Economic and Political Weekly, 17-24, May, 1997, Vol. XXXII, No. 20-21, p.1130.

[78] Dev, Mahendra. S. and Ranade, Ajit. (1998). Raising Food Prices and Rural Poverty: Going Beyond Correlation, Economic and Political Weekly. September, 1998, Vol. XXXIII, No. 39, p.2535.

Ravichandran and Padmanaban[79] explained in his study that in India the Public Distribution System (PDS) is being implemented through fair price shops or ration shops and consumer co-operatives. The consumer co-operatives are essential part of PDS, which has been assigned a significant role in the distribution of essential consumer goods and they are expected to bring down the prices of essential commodities. The main objectives of these societies are elimination of intermediaries, curbing the undesired malpractices like adulteration and maintenance of purity, quality and correct weighment. He further found that in Tamil Nadu, there are 3891 primary co-operatives undertaking PDS. These societies are primarily concerned with supply of food stuff and other daily needs in correct measures at reasonable prices.

Singh[80] observed that in India, urban areas which account for only 20 per cent of population covered 68 per cent of off take of food grains from PDS leaving only 32 per cent for rural areas where 77 per cent of the population resides of which about half stated to be below the poverty line.

Sinha and Singh[81] observed in their study that poverty eradication is one of the major objectives of planned development. The magnitude of the problem is still staggering. Thirty-six per cent of Indian population was below poverty line (BPL) in 1993-94. The government recognizes that high growth of incomes is by itself not enough to improve the quality of life of the poor. Unless all the citizens of the country, and most particularly the poor, have certain basic minimum services, their living condition cannot improve. These minimum services are safe drinking water, primary health facilities, universal primary education, nutrition to school children, and shelter for poor, road connectivity for villages and habitations, and Public Distribution System (PDS) with a focus on the poor. The Ninth Plan also lays special emphasis on these seven basic

---

[79] Ravichandran, S.A. and Padmanabhan, N.R. (1998). Purchase Behaviour of Consumers in Consumer Co-operatives, Quoted in: Indian Co-operative Review, January, 1998, Vol. XXXV, No. 3, p.227.

[80] Singh, C.D. (1982). PDS in India, Quoted in: Indian Journal Commerce, November, 1982, Vol. XXXV, No.4, p.5.

[81] Sinha, Rajiv Kumar. Dr. and Singh, Bishnu Deo. Dr. (1998). Rural Development through Poverty Alleviation : Need for an Appropriate Strategy, Quoted in: Kurukshetra, September, 1998, Vol. 46, No. 12, p. 43-45.

minimum services. There would be schemes for income generation through supplementary employment, for the welfare of the poor in rural/urban areas and, for a targeted PDS system to ensure that the poor have access to food grains at prices they can afford.

Dass[82] inferred in his findings that citing the example of Assam can be emulated to lead the whole of India. They have taken over the rice trade, while dominating wholesale traders in rice and food grain trade. They are distributing rice and other essential commodities through co-operatives. Emphasized the need for co-operatives and strengthening the PDS to bring down the prices of essential commodities.

Batra[83] observed that the National Co-operative Development Corporation has played a vital role for the development of consumer co-operative activity, which is a major programme in co-operative sector in the context of Public Distribution System.

Gulati and Krishna[84] made an attempt in their study to outline a scheme to cover all the people under poverty, both from the rural and the urban areas, on a permanent basis with an assured supply of 100.80 kgs. of grains per person per annum. The quantity required to feed such a large number of people came to about 30 million tonnes in 1973. The estimates of food grains made in this study were found to be too large to the extent that they could not be mobilized either from internal production or from imports or both.

Bose[85] stressed for the expansion of PDS through fair price shops including mobile shops in far flung areas and shops to cater to industrial workers, students' hostels and availability of text books and exercise books to students on a priority basis for the promotion of a strong consumer protection movement.

---

[82] Dass, Dharinder. (1974). Procurement and Distribution of Essential Commodities should be through Co-operatives, Quoted in: The Co-operator, April 15, 1974, Vol. xi, No. 20, p.5.

[83] Batra, J.D. (1976). Rural Consumer Co-operatives, Quoted in Kurukshetra, November, 1976, Vol. 23, No. 3, p.16.

[84] Gulati, S.C. and Krishna. (1975). The Pattern of Income Distribution in India, Edited by Srinivasan, Calcutta: Statistical Publishing Society.

[85] Bose, K.C. (1983). Distribution of Consumers Articles in Rural India, Quoted in: Yojana, April, 1983, No. 7, p. 22.

Antony[86] is opposed to the continuance of a universal PDS and felt that the affluent sections need to be excluded from the scheme. He further advocated that government should allow sale of rice in the open market by Food Corporation of India as it would have a salutary effect on the price situation and observed the low off take of food grains through revamped PDS in many of the states. He attributed the low off take mainly to two facts – the low price difference between the PDS food grains than those in the open market and second, lack of purchasing power in tribal and poor areas.

Dev[87] revealed in his study that the improved food security to the household is important for a developing country like India where millions of poor suffer from persistent hunger and malnutrition and some of others are exposed to this risk in future. This study examined the poverty and food security problem with emphasis on PDS and Employment Guarantee Scheme (EGS) in two relatively large states of India namely Maharashtra and West Bengal. He further observed that at the outset, both the programmes differ in their approaches in helping the poor. The Employment Guarantee Scheme (EGS) is income-generating programme while PDS is a programme, which works only if the prices are affordable under given purchasing power. He further explained that in order to provide food security to all the poor, there is a need for effective implementation of the PDS and other anti-poverty programmes. We need to look at the problems and the ways in which PDS can restructure effectively. However, this type of PDS restructuring would help the poor only marginally because there are several problems associated with the present PDS. Unless these problems are tackled, the PDS objective of helping the poor and vulnerable sections will not be fulfilled.

Rao[88] revealed that since the food situation in India was critical on the eve of independence, PDS, focused on poor, should have received high priority in the development plans launched soon after independence. Actually, a substantive

---

[86] 'PDS to Stay', says Antony, Quoted in: Times of India, New Delhi, January 21, 1994.

[87] Dev, Mahendra. S. (1996). Food Security:'PDS Vs EGS, A Tale of Two States, Quoted in: Economic and Political Weekly, 6-13, July, 1996, Vol. XXXI, No. 27, p. 1752.

[88] Rao, V.M. (1998). Economic Reforms and the Poor, Quoted in: Economic and Political Weekly, 18-25, July, 1998, Vol. XXXIII, No. 29-30, p. 1951.

PDS for rural areas appeared on the scene after almost two decades as a byproduct of green revolution in the late 1960s. The green revolution is a milestone in Indian economy to get food security and sustainability. PDS expanded considerably in the rural areas during 1980s based on the surpluses of rice and wheat procured in the green revolution areas. While the present wheat-cum-rice based PDS serves admirably as support system for farmers in green revolution areas, it hardly provides credible food security to the poor. There are large areas in the country without PDS. Even in the areas covered by PDS, purchases from PDS appear to account for less than a fifth of the food grains consumption of the poor.

Hanumantha[89] said the issue prices of food grains from Public Distribution System (PDS) were almost doubled over a short period of four years in an effort to contain food subsidy. He derived that public policy has become important in the situations like South East Asia crisis for the prevention of the interest of poor people and state interference is immensely required to take out the economy in such situation.

Patel[90] observed in his study that the different agencies have been set up in tribal areas to uplift the agriculture and further found that the tribal get the goods at reasonable prices. He also studied that cardholders are satisfied with the prices at which essential commodities like rice, wheat, sugar, kerosene, etc sold through fair price shops under PDS.

Gupta[91] observed in his studies that the benefit schemes like PDS should be given to the people for whom these plans are meant. Proper care should be taken that these plans are not snatched away by the powerful sections and secondly, the beneficiaries such as the vulnerable section of the community

---

[89] Rao, Hanumantha. C.H. (1996). Economic Reforms, Agricultural Growth and Rural Poverty, Quoted in: The Indian Economic Journal, April- June, 1996, Vol. 43, No. 4, p.9.

[90] Patel, M.. L. (1983). Agricultural Financing by Co-operatives in Tribal Areas, Quoted in: Indian Co-operative Review, April, 1983, Vol. XII, No. 2, pp. 170-175.

[91] Gupta, S.R.. (1975). Reflections on Tribal Development , Quoted in: Indian Co-operative Review, Delhi, NCUI, 1975, Vol. XII, No. 2, pp. 180-188.

and the lowest income group including the agricultural labourers should not be ultimately deprived of their earnings.

Taimni[92] felt that there never appeared to be an ' approach', what to say of holistic approach; there was not even any thinking on the subject of food security, till jolted by the outsiders to remind the custodians of food security of their responsibility

It was only after the World Food Summit in 1996- the agenda was back but no initiative- no back up – still struggling to probe as to what to do? How to go about it? So much for the food security as we understand now.

The Government Policies on PDS were analyzed in detail by the author.

If PDS was perceived to be a method of income transfer, it helped but the cost of the transfer was more than the benefit transferred. The author has quoted a study done for the World Bank that for income transfer of One rupee, the cost of such transfer was something over Rupees Four.

One of the alternatives being suggested is decentralized procurement by the states, at least the surplus states, improvement in buffer management including the necessity to consider the need for such huge quantities to be maintained as 'buffer'.

The study revealed that the number of the Fair Price Shops have been going up considerably to ensure availability within easy reach of the consumer, but this expansion was not without its dark side.

From the figures of the off take, it was also clear that off take from the PDS/FPSs is quite inadequate to meet the needs of any family more so the poor. The policy of combining low off take/availability compounded with universal coverage leaves the determination of actual beneficiaries to a variety of market, administrative interpersonal and social factors thus adversely affecting the very objectives of PDS. Maximum quota available were much lower than the required. Worse was the level of awareness about their entitlements.

---

[92] Taimni, B.K. (2001). Food Security in 21st century, Perspective and vision. Delhi: Konark Publishers Pvt. Ltd.

The author quotes the NSSO survey result that shows an improving trend in percentage of families getting two square meals a day for the year as a whole. Figures for hunger ratios after the 50th round is 5 per cent rural and 2 per cent urban. Analysis show that all lower income groups are obviously the worst hit; for them worst period is monsoon period, *i.e.*, kharif crop season.

Another survey showed a hunger ratio of 11 per cent for rural and 3 per cent for urban.

The author has stated that these disturbing figures hit at the very root of our perceptions of food security vis-à-vis role our PDS plays in improving the food security.

Summarizing, it is said that at the evolution of PDS in 1960s the situation was marked by:

- High poverty ratios.
- Inadequate food grains production.
- Rising effective demand
- Bureaucratic set up.
- Host of controls.
- Universal application.

Changes having a bearing on PDS that took place in the intervening years say up to now could be identified as follows:

- Declining poverty ratios.
- Country's agriculture, growing faster than the effective demand.
- Democratic decentralization in the form of Panchayati Raj Institutions.
- Declining focus on PDS by the administrative system in large parts of the country especially in neediest and poorest areas
- Poor off take in poor but food surplus states.
- Continuation of controls, which are out of place including coercive procurement The impact of various PDS Programmes had been assessed by the study like miller's levy.
- No change in the 'mind set' of shortage-ridden economy.

Experience and several studies have shown that higher the difference between Central Issue Price(CIP) and the open market prices, greater is the probability of leakage. TPDS has just created that scenario.

The author suggests an alternative to PDS with four contours of the PDS to be seen in the perspective of:

Availability, Acceptability, Accessibility, and Affordability. Accountability also need to be looked in to.

As per the alternative system, entitlement could be considered to be given in the form of food stamps/Coupons- as it will help attain the twin objective of physical and financial access to food.

Author has identified the following major issues, which need to be addressed from the supply & demand sides.

Supply Side

- The commodity basket for the PDS need to include pulses and edible oil for the target group alone.
- Total quantity available for supply must meet at least 50 per cent of family's monthly requirement.
- Targeting the beneficiary to be left with the local bodies based on nutrition indicators and proxy means test.
- The price at which commodity is to be supplied at about 50 per cent of the market price.
- Distribution network to be left to the local bodies commodities to be delivered to local bodies 'outlet' (retail sale) level, to ensure uninterrupted supply as well as to reduce leakage in the 'up market'.

Demand side

- Financial access: assured employment for at least 100 if not 150 days in a year for at least one member of a family.
- Seasoned: variation of demand/requirement during lean/harvesting seasons. Higher allocations during months of June, July, August and September. Experience and data show higher off take as well as higher hunger ratio during the period.

Coondoo, Majumder, *et al.*[93] examined the interrelationship between consumption and employment levels of households which may help identify groups of households which are employment-deficient and consequently likely to suffer from food insecurity and nutritional deficiencies.

The first part analyses information on household employment in an attempt to identify the factors/household characteristics which are strong correlates of the level of household employment and or its fluctuation (*i.e.*, the degree of uncertainty associated with employment). The next part examines the relationship between levels of consumption and employment of households in order to ascertain whether employment- deficient households are also poor from the point of view of consumption. This is all about the demand-side picture with the aspect of food security of households. The final part of the study then matches the demand-side picture with the actual distribution pattern of food support provided through the PDS in rural Maharashtra, essentially to see whether food security offered through the PDS could reach target groups of population in the state. Coming to the Findings, first, the study of employment and under-employment revealed that these vary significantly across categories of households. Access to land and other productive assets appeared to be an important determinant of employment levels as the agricultural and other labour households showed greater under-employment compared to the categories of self-employed households. The analysis of PDS data revealed that for most items, the PDS had a moderate equalizing effect on the intra-group consumption inequality.

Indrakant[94] examined the extent of food security provided by the PDS and the variations in its actual coverage across regions (economically developed and backward) and socioeconomic classes, with special reference to Andhra Pradesh. The trends in the production of rice and other cereals, and in the procurement and distribution of rice are examined. Since Andhra Pradesh being a net surplus state in rice and, in fact, exports rice to neighbouring

---

[93] Coondoo, Dipankar, Majumder,Amita and Bhattacharya, Kaushik. (1998). Employment, Level of living and Utilisation of PDS, Delhi: Oxford University Press.

[94] Indrakant.S. (1995). Food Security and Public Distribution System in Andhra Pradesh, Workshop on Food Security and Public Distribution System in India, New Delhi: Planning Commission.

states, the extent to which regional inequalities in production are mitigated through the PDS is studied. How well the PDS is targeted towards the deserving poor has been assessed. The networking and the utilization pattern of the PDS in Andhra Pradesh has also been studied.

The analysis revealed that in Andhra Pradesh, nearly 30 per cent of rice purchases are made from FPSs and form over 22 per cent in total rice consumption. The corresponding percentages are 32 and 23 in rural areas. Thus, the extent of food security provided by PDS appears to be higher in rural areas.

Survey in five villages of Andhra Pradesh had been conducted which proved that the levels of living vary widely in the five villages. More than 50 per cent of the household budget, in all the five villages, is devoted to food items. The extent of PDS support to the vulnerable sections varies from one village to another. The percentage of PDS purchase in total rice consumption for the landless class varies in the range of 26 per cent to 63 per cent. The extent of PDS support declines, in general, with landholdings. The extent of PDS support declines also with expenditure levels of the household. The author has concluded that there is need to improve the targeting of PDS. To improve food security in the state and to reduce subsidy burden, the author has recommended that the government might consider alternative policy option, such as:

Providing higher quantity per capita ration at a slightly higher price; and that also to a smaller group.

Vidyasagar[95] analyzed the role and limitations of the PDS in ensuring food security in Rajasthan. Its spread, efficacy and effectiveness in reaching rural poor were examined. Household survey of four districts representing different typologies of the PDS- agro climatic environment interface was conducted.

The study revealed that the nature of food security provided in the state is one of conferring price advantage, by strengthening the market infrastructure.

---

[95] Vidyasagar. (1996). The Public Distribution System and Food Security in a region of large agricultural instability: Rajasthan, Delhi: Mittal Publications.

Very high rural bias is evidenced in Rajasthan. It supports the weaker sections of the rural population. Malpractices in distribution and inclusion of food grain surplus districts in the RPDS are the drawbacks seen in the study.

Nair[96] studied the effect of reduction in food subsidy and the enhancement of the issue price of food grains as part of the ongoing reform process in the country on food security of Kerala. Survey has been conducted in four villages, viz.Anad in Trivandrum district, Anjengo in Kollam district, Paruthoor in Palakkad district and Edavaka in Wayanad district.

The per capita consumption of food grains did not show systematic variations across landholding categories. However, across expenditure groups, it tends to increase with an increase in per capita expenditure. In the villages where there is no production of rice, there is high degree of dependency on the open market for purchase of rice. PDS purchase as a ratio of total purchase increased with the level of expenditure. The net distribution of gains from PDS in financial terms is more in favour of the better off sections than of the poorest strata.

Important recommendations were improvement of quality of PDS food grains to augment off take by households, revision of the retailers' commission to check malpractices and targeting the needy by identifying them through Grama Sabhas; and excluding those who are not dependent on PDS-subsidized commodities.

Swaminathan[97] revealed that in striving for "efficiency" by means of narrow targeting, households that should be entitled to basic food security through the PDS have been left out. In the present situation, a person who belongs to a household that has neither a BPL nor an Antyodaya card is effectively excluded from the PDS. In Kerala, the State where the universal PDS was most effective, 70 percent of the households now have been excluded from the PDS.

---

[96] Nair K.N. (2000). Food Security and the 'Public Distribution System in Kerala, Thiruvananthapuram: Centre for Development Studies.

[97] Swaminathan, Madhura. (2008). Public Distribution System and Social Exclusion, Article in 'The Hindu' , 7th May, 2008

Turning to households belonging to the Scheduled Tribes, large numbers of households do not have access to the PDS; to illustrate, 90 percent of rural Scheduled Tribe households in Assam, 79 percent in Arunachal Pradesh and 68 percent in Chattisgarh were excluded from the PDS. Surprisingly, the North Eastern States did not perform too well on this count. There were only four States – Andhra Pradesh, Orissa, Gujarat and Maharashtra – where more than 50 percent of rural Scheduled Tribe households had received a BPL or Antyodaya card. The data from the 61st round of the National Sample Survey make it quite clear that a high proportion of agricultural labour and other labour households, of households belonging to the Scheduled Castes and the Scheduled Tribes, of households with little or no land and households in the lowest expenditure classes, are effectively excluded from the PDS today.

Going through the literature on PDS and related areas, it was noted that even though many of the studies focused on the utilization of the benefits provided by the PDS, only few studies concentrated on the utilization of TPDS in food grains among the tribal population in Kerala.

Chapter 3
Research Methodology

3. RESEARCH METHODOLOGY

The research methodology adopted to carry out the study is explained below:

3.1 Type of Research

The Research Design used in this study is descriptive in nature, but exploratory in some aspects. The socio-economic characteristics and the basic food grain needs of people selected as sample, their consumption behavior and the impact of the policies and programs of the Government being implemented through the Targeted Public Distribution System have been analyzed with the following goals in mind:

1. To assess the effectiveness of the programme, *i.e.* Targeted Public Distribution System.
2. To identify the limitations of the programme in reaching the target group.
3. To identify ways for improving the effectiveness of the existing program.

3.2 Data Collection

The Study relied mostly on primary data, but secondary data were also utilized where ever needed.

Primary Data

Primary data were collected by conducting personal interview with the senior member of each tribal household using a designed Household Survey Schedule, details of which are given in 3.2.1. Data from 1231 tribal families residing in 95 tribal colonies spread over 14 villages in the three districts in Kerala, viz. Idukki, Palakkad and Wayanad were collected, using the Household Survey Schedule. The list of the 95 tribal colonies selected for the study contained in 14 villages spread over three districts, is attached as Annexure - I.

Secondary Data

Secondary data were collected from the published reports as well as the web sites of Food Corporation of India, Food and Civil Supplies Ministry,

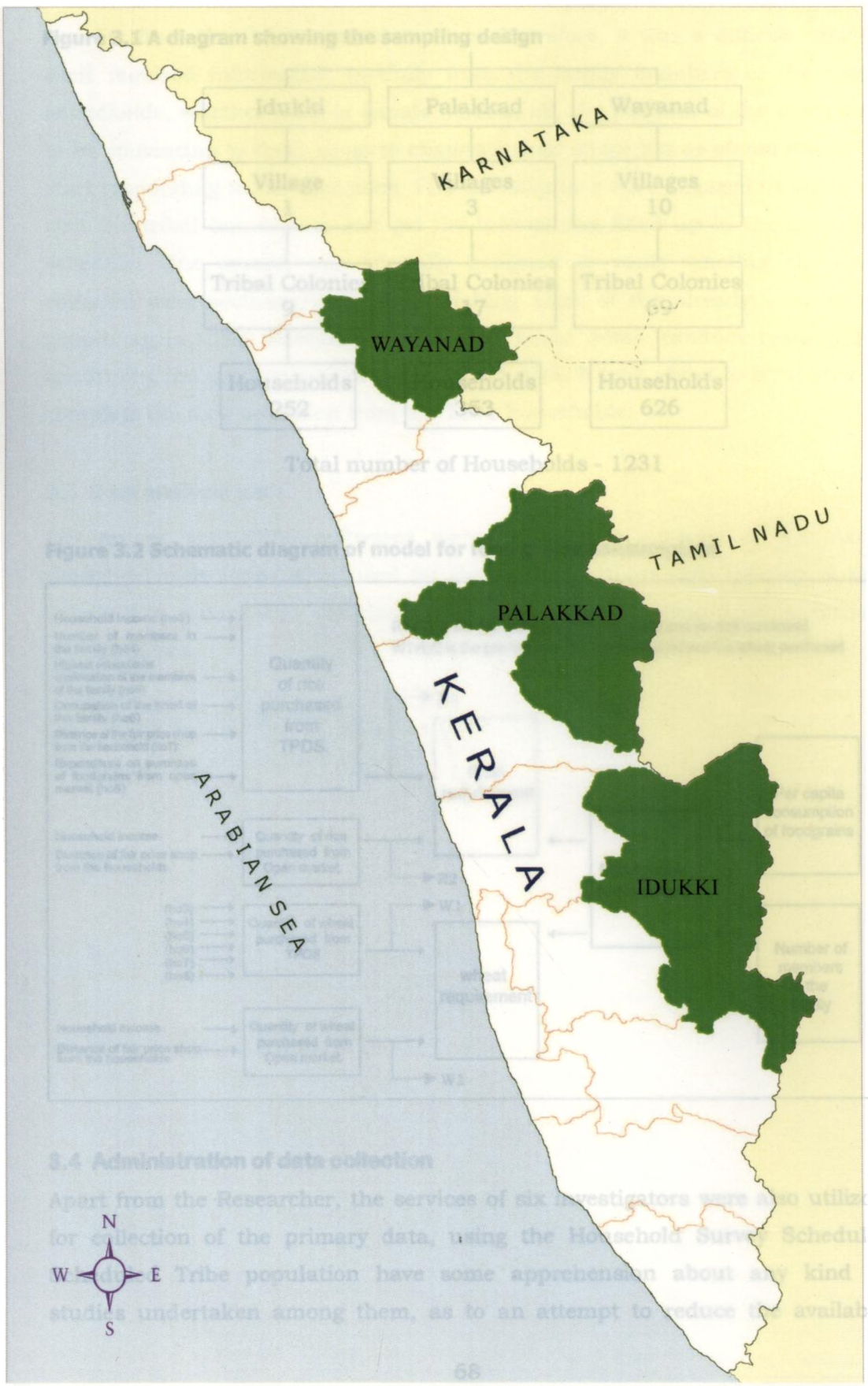
Government of India, Civil Supplies Department, Kerala, State Planning Board, Kerala, etc.

3.2.1 Instrument used for collection of Primary data

Household Survey Schedule: A preliminary interview schedule was prepared for conducting a pilot study in two tribal settlements viz. Chemmankala and Podiyakala in Thiruvananthapuram district. Based on the experience, while conducting the personal interview for the pilot study, necessary modifications, additions, deletions etc. were made in the interview schedule. The modified Household Survey Schedule was used for collecting the primary data from the tribal households in the three districts selected for the study, which is attached as Annexure - II.

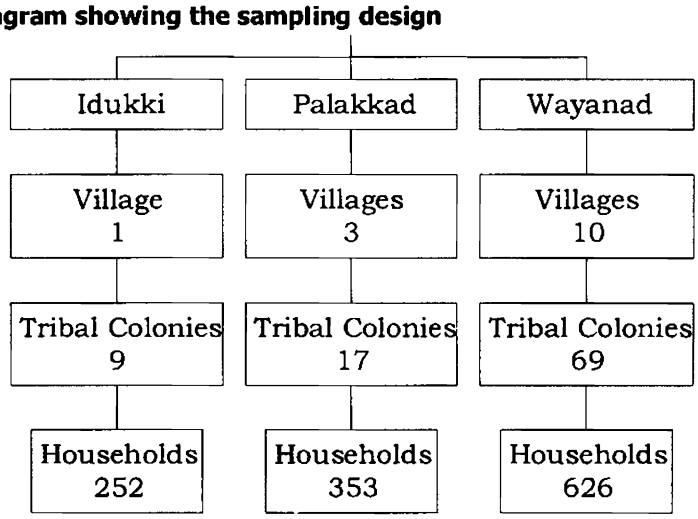
3.3 Sampling Design

A diagram showing the sampling design is shown as Figure 3.1. The tribal households in the State numbering around 95000 were the population for the study. The total strength of tribals in Kerala during the study period was 445740, where as the three districts, viz. Idukki, Palakkad and Wayanad have more than 60 per cent of the population of the tribals. Considering the district-wise distribution of scheduled tribe population in Kerala, Wayanad has the highest percentage of 37.36, Idukki coming next at 14 per cent and the third one Palakkad at 10.89 per cent, the total coming to 62.25 per cent. Therefore, the three districts as above were selected for the study (Map 1). Within the three districts as above, 14 villages with scheduled tribe concentration were selected for the study. Ninety-five tribal colonies were selected from among the various tribal settlements. Collection of primary data was made from 1231 households with in the above tribal colonies as part of this study. The total strength of family members in the 1231 households subjected to this study is 5032, which is 1.13 per cent of the total population of tribals in the state, *i.e.* 445740. Considering the number of households selected for the study, *i.e.*1231 out of 95000 works out to 1.3 per cent. If we consider the sample size as a percentage of the total tribal population in the three districts selected for the study, it works out to 1.81 per cent.



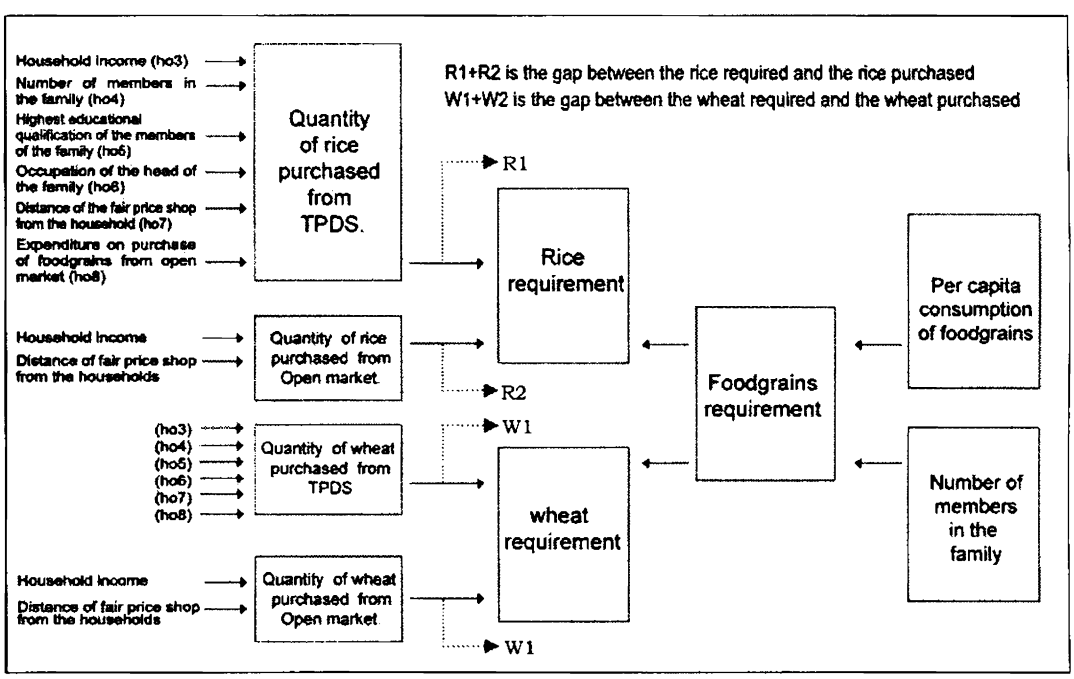
Map 1. Study area: Idukki, Palakkad and Wayanad Districts

Figure 3.1 A diagram showing the sampling design



Total number of Households - 1231

Figure 3.2 Schematic diagram of model for food grains consumption



3.4 Administration of data collection

Apart from the Researcher, the services of six investigators were also utilized for collection of the primary data, using the Household Survey Schedule. Scheduled Tribe population have some apprehension about any kind of studies undertaken among them, as to an attempt to reduce the available

benefits from the Governmental sources. Therefore, it was a difficult task to elicit required information tactfully from the family members of the tribal households, whether male or female. First of all, the purpose of the study had to be convincing to them so as to eliminate their suspicion as stated above, to start responding to the questions. Five investigators were engaged to regularly visit the tribal households and get the information filled up in the interview schedule. One person was specially assigned to verify whether the data collected were accurate/genuine by visiting some of the already interviewed people again. The Researcher had also made some random reviews for confirming the genuineness of the collected data. It took about four months to complete the data collection from the 1231 households.

3.5 Data analysis tools

MS Access and SPSS softwares were utilized for analysis of the data. Statistical techniques were used for the analysis of the data relating to the tribals. Chi square test, Correlation test, regression etc. were used for testing of hypotheses.

Chapter 4
Presentation of Data

4. PRESENTATION OF DATA

The data collected by the main field survey are presented below. All the tables and figures in this chapter are derived from the main field survey.

Sample size: 1231

The total number of households subjected to this study is shown in Table 4.1

Table 4.1 Number of Households

Districts	Number of Households
Idukki	252
Palakkad	353
Wayanad	626
Total	1231

4.1. Socio-economic features

Number of members in the tribal households

Total number of members in 1231 families is 5028, out of which 2504 males and 2524 females are there. Maximum number of members in a family is six, whereas the minimum is one. The average number of members in the 1231 tribal households is four. Table 4.2 provides the details of the family size of tribal population.

Table 4.2 Number of members in the tribal families

Particulars	Idukki	Palakkad	Wayanad	Average in percentage of total
Families with 1member	1	7	5	1.05
Families with 2 members	12	41	50	8.37
Families with 3 members	46	77	80	16.49
Families with 4 members	95	105	168	29.89
Families with 5 members	92	122	322	43.55
Families with 6 members	7	0	1	0.65
Minimum number of members in the family	1	1	1	1(average)
Maximum number of members in the family	6	5	6	6(average)
Average number of members in the families	4	4	4	4(average)

Education level classification

As per the collected data, 39.70 per cent members of the 1231 tribal households are illiterates and the rest of the people are literates as shown in Figure 4.1. 25.04 per cent among the surveyed people studied up to 4th standard only. 16.64 per cent are educated up to the level of 5th to 8th standard. 15.45 per cent are educated to the level of 9th to 10th standard. Only 3.17 per cent of the total people surveyed have passed their 10th standard and above.

Figure 4.1 Educational Classification

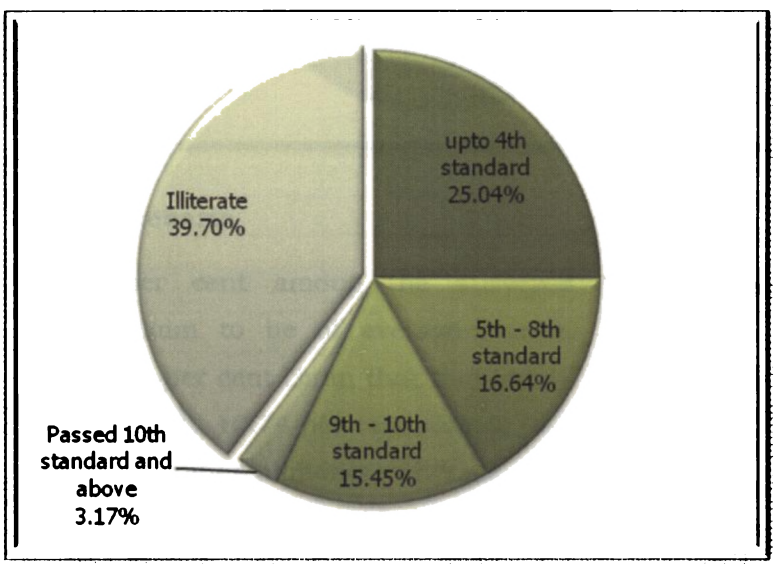


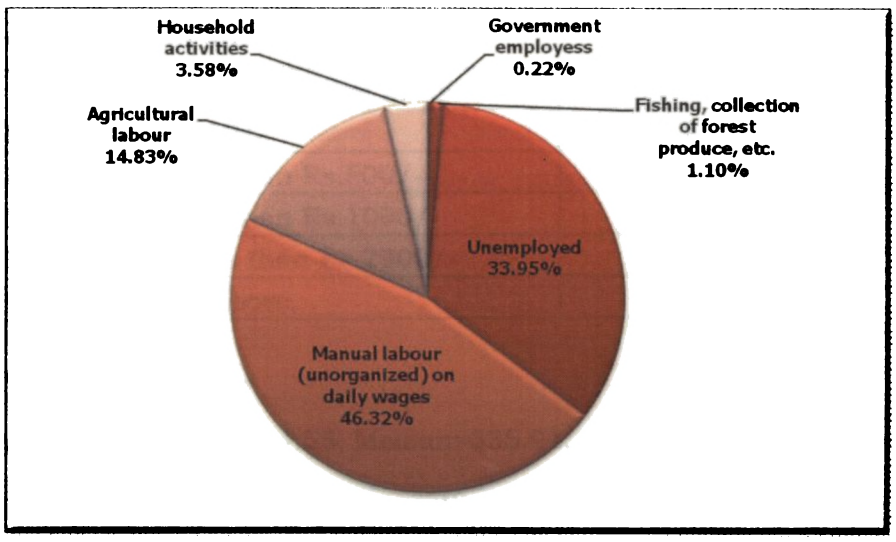
Table 4.3 Income level classification

District	Number of families		Percentage	
	BPL	APL	BPL	APL
Idukki	223	30	88.14	11.86
Palakkad	261	91	74.15	25.85
Wayanad	570	56	91.05	8.95
Total	1054	177	85.62	14.38

Occupation level classification

Among the surveyed people 33.95 per cent are unemployed. 46.32 per cent are employed in manual labour (unorganized) on daily wages. 14.83 per cent are engaged in agricultural labour. 3.58 per cent are engaged in household activities. 0.22 per cent are government employees. The rest 1.1 per cent are engaged in fishing, collection of forest produce, etc., as shown in Figure 4.2.

Figure 4.2 Occupation level Classification



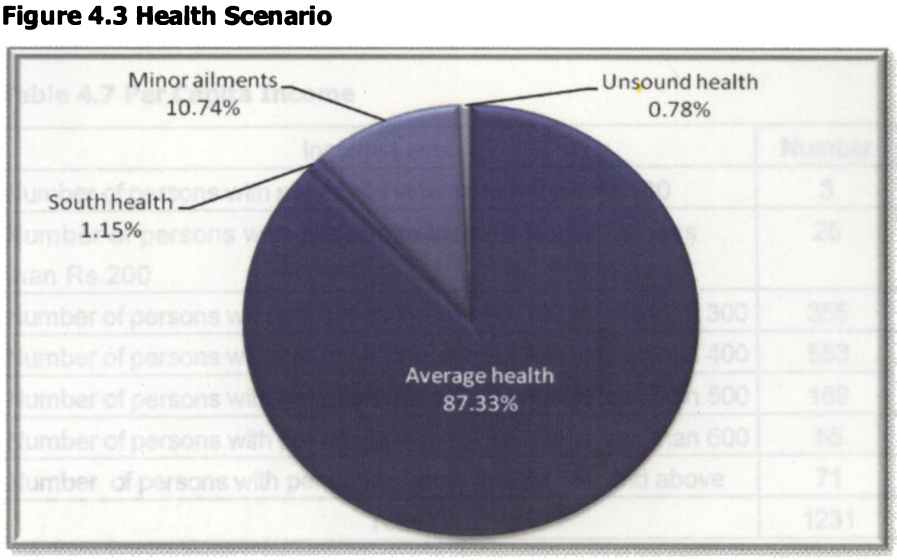
Health Scenario

87.33 per cent among the surveyed people claim to be of average health. Only 1.15 per cent claim that they are of sound health. 10.74 per cent reveals that they have minor ailments, whereas 0.78 per cent claim that they are of unsound health. Details are shown in Table 4.4 and as a pie diagram in Figure 4.3.

Table 4.4 Health Scenario

Health scenario	Percentage
Average health	87.33
South health	1.15
Minor ailments	10.74
Unsound health	0.78
Total	100.00

Figure 4.3 Health Scenario



Family Income

Table 4.5 Family income

Monthly income level in Rs.	Percentage
Less than Rs.100/-	7.8
Rs.100/- to less than Rs.500/-	19.58
Rs.500/- to less than Rs.1000/-	35.82
Rs.1000/- to less than Rs.2000/-	29.57
Rs.2000/- and above.	7.23

Per capita income

Arithmetic Mean =364.55, Median=335.94, Mode =320, S. D =146.27

Table 4.6 Per Capita Income percentiles

Percentile	Value
10th	253.50
20th	276.75
25th	287.81
30th	296.95
40th	316.25
50th	335.94
60th	355.95
70th	379.81
75th	395.25
80th	414.75
90th	502.50

Minimum per capita income =Rs.5.25

Maximum per capita income =Rs.2306.95

Table 4.7 Per Capita Income

Income Level	Number	Percentage
Number of persons with per capita income less than Rs.100	3	0.24
Number of persons with per capita income Rs.100 to less than Rs.200	25	2.03
Number of persons with per capita income Rs.200 to less than 300	355	28.84
Number of persons with per capita income Rs.300 to less than 400	553	44.92
Number of persons with per capita income Rs.400 to less than 500	169	13.73
Number of persons with per capita income Rs.500 to less than 600	55	4.47
Number of persons with per capita income of Rs.600 and above	71	5.77
Total	1231	100

Considering the poverty line fixed for Kerala for 2004-2005 as noted in 1.2, poverty line was updated for the period of study as Rs.457 per month as per Planning Commission norms. Four thousand five hundred and forty persons in 1054 households among 5028 persons in the sample of 1231 households are poor. Therefore, 1054 households are poor as per the data collected. Out of this 1054 families, only 737 are classified as BPL as per the ration cards under TPDS available with the tribals selected for the study as sample. Further, only 994 families among the 1054 poor households have ration cards. 60 families do not have ration cards.

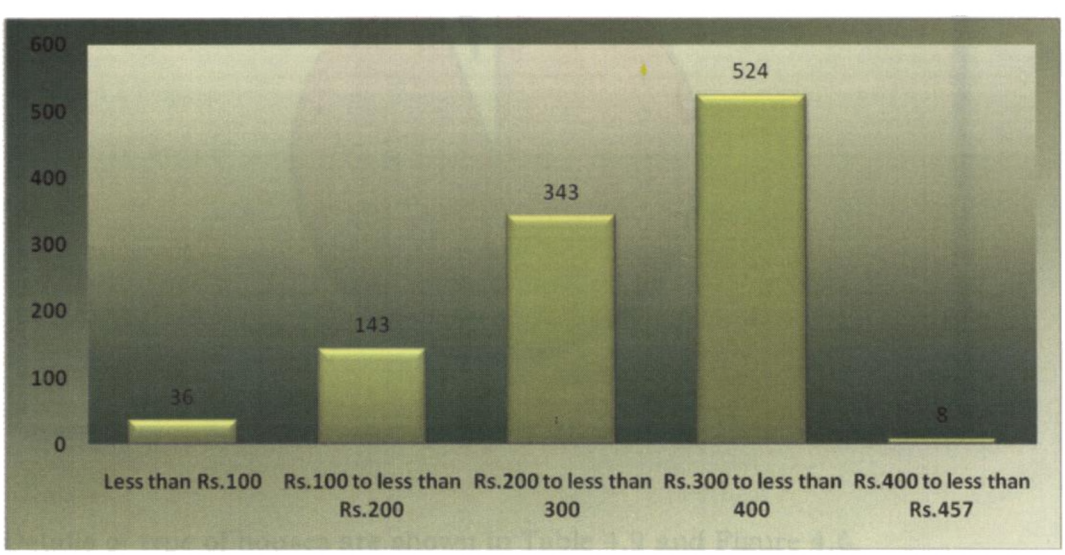
Distribution of sample poor households on the basis of income

Classification of BPL households on per capita income is shown in Table 4.8 and as bar diagram in Figure 4.4.

Table 4.8 Household Per Capita Income of BPL families

Income	Number of households	Percentage
Less than Rs.100	36	3.4
Rs.100 to less than Rs.200	143	13.6
Rs.200 to less than 300	343	32.5
Rs.300 to less than 400	524	49.7
Rs.400 to less than Rs.457	8	0.8

Figure 4.4 Household Per Capita Income of BPL families



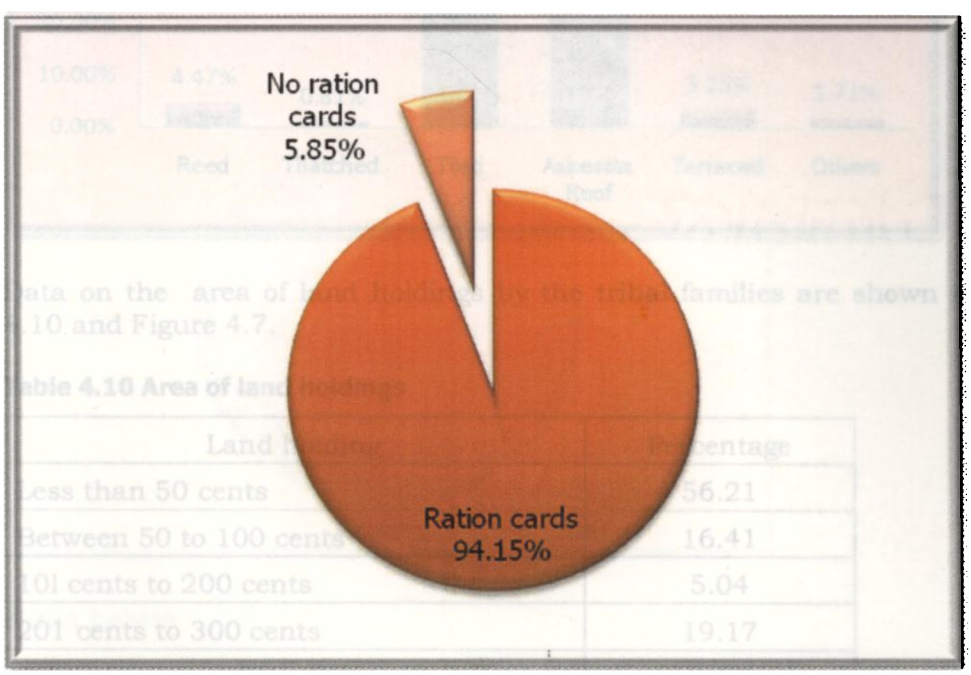
Families holding ration cards

Among the people subjected to survey 94.15 per cent are having their ration cards (Figure 4.4). 5.85 per cent do not have ration cards for reasons as follows:

5.44 per cent claim that they have not been issued with ration card irrespective of filing application before the authorities and the rest 0.41 per cent states that they are not interested in public distribution system and hence they have not applied for ration cards. However, these households who do not have ration cards were also considered for collection of data for the following reasons:

1. Majority among them claimed that they get food grains from FPS at the rate of APL.
2. Those who are not interested in PDS may depend on open market for food grains. Such data is also relevant for the study.

Figure 4.5 Availability of ration cards

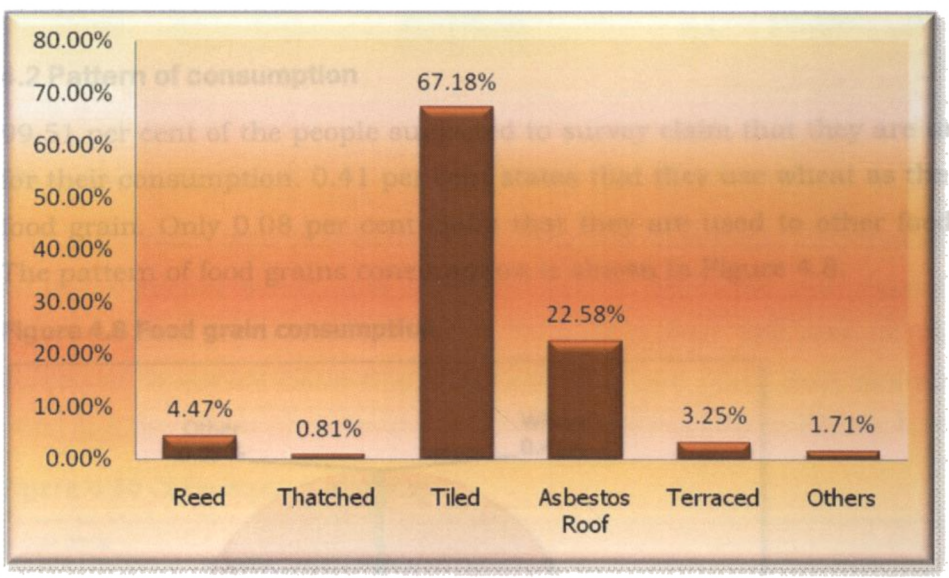


Details of type of houses are shown in Table 4.9 and Figure 4.6.

Table 4.9 Type of houses

Type of House	Percentage
Reed	4.47
Thatched	0.81
Tiled	67.18
Asbestos Roof	22.58
Terraced	3.25
Others	1.71
Total	100.00

Figure 4.6 Type of houses

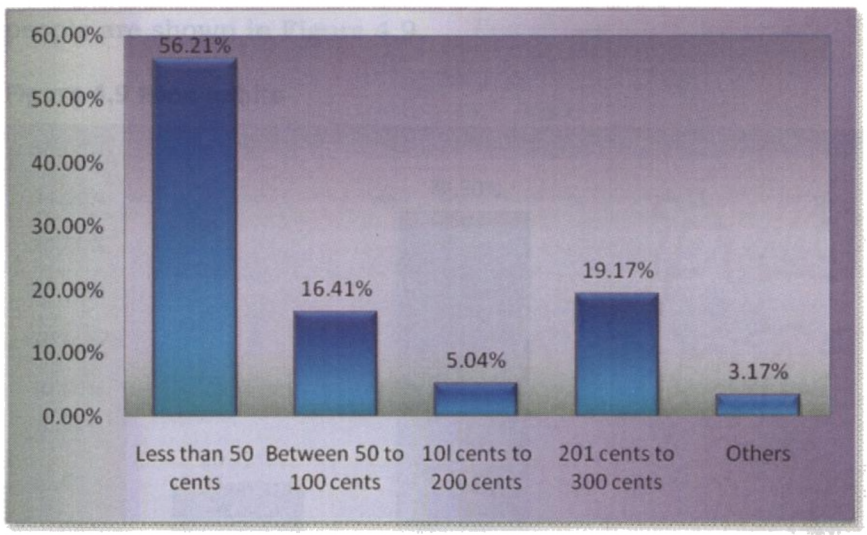


Data on the area of land holdings by the tribal families are shown in Table 4.10 and Figure 4.7.

Table 4.10 Area of land holdings

Land holding	Percentage
Less than 50 cents	56.21
Between 50 to 100 cents	16.41
101 cents to 200 cents	5.04
201 cents to 300 cents	19.17
Others	3.17
Total	100.00

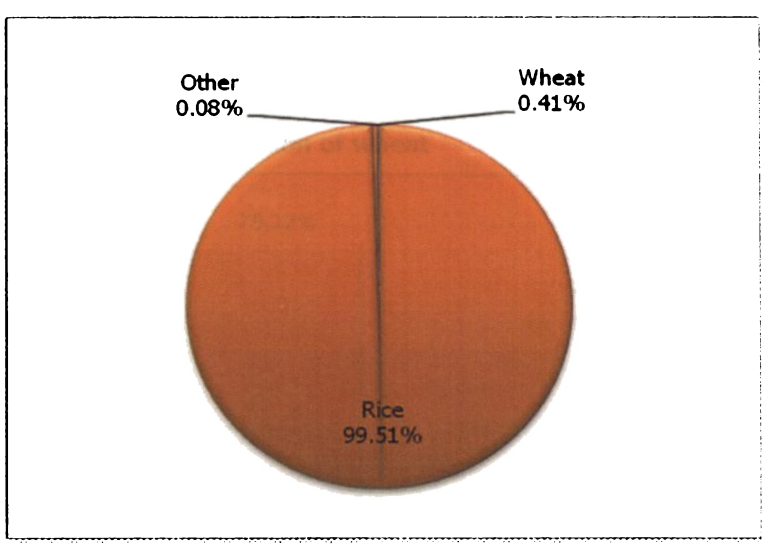
Figure 4.7 Area of Landholdings



4.2 Pattern of consumption

99.51 per cent of the people subjected to survey claim that they are using rice for their consumption. 0.41 per cent states that they use wheat as their staple food grain. Only 0.08 per cent claim that they are used to other food habits. The pattern of food grains consumption is shown in Figure 4.8.

Figure 4.8 Food grain consumption

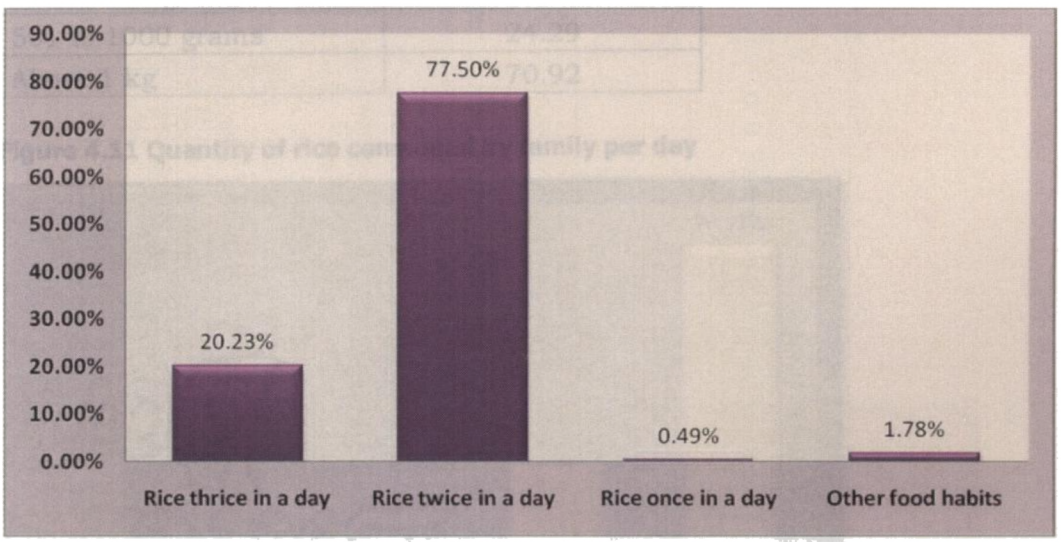


Food habits

20.23 per cent claim that they consume food prepared out of rice thrice in a day. 77.50 per cent claim that they consume food prepared out of rice twice in a day. Only 0.49 per cent claim that they consume rice only once in a day.

1.78 per cent claim that they are of other food habits. Food habits of the tribal people are shown in Figure 4.9.

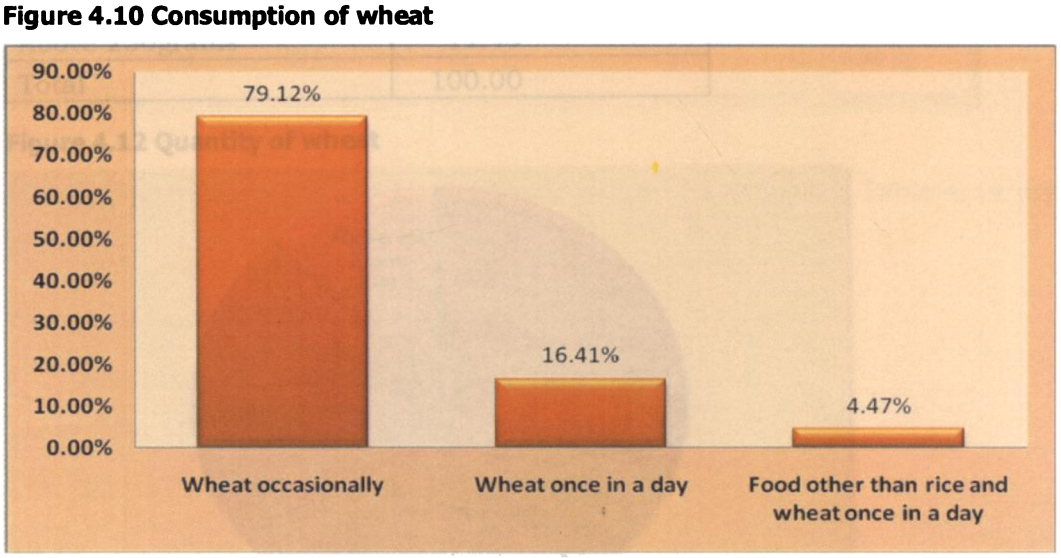
Figure 4.9 Food habits



Wheat consumption

79.12 per cent claim that they do not consume food made of wheat daily. If at all they consume wheat, it is only occasionally. 16.41 per cent claim that they consume food made of wheat once in a day. 4.47 per cent of the people subjected to survey claim that they consume food other than rice and wheat once in a day. Data on consumption of wheat are shown in Figure 4.10.

Figure 4.10 Consumption of wheat

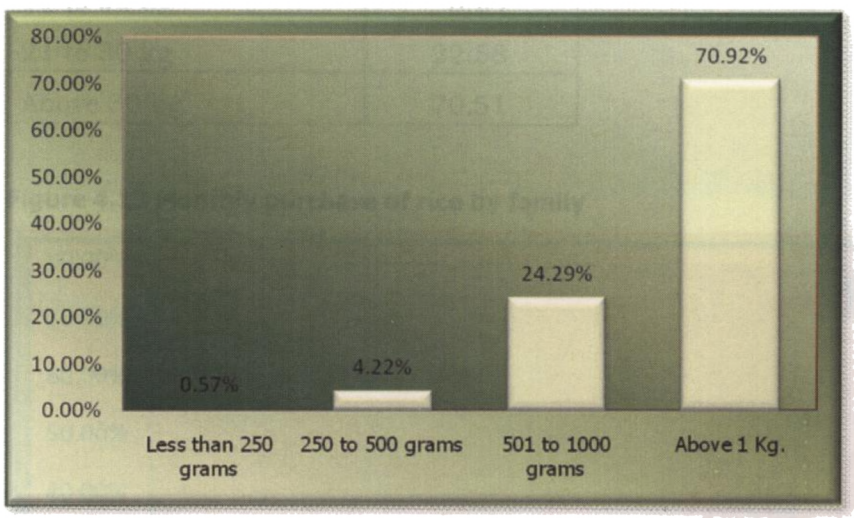


Quantity of rice consumed by the tribal people is shown in Table 4.11 and Figure 4.11.

Table 4.11 Quantity of rice consumed by family per day

Quantity of rice	Percentage
Less than 250 grams	0.57
250 to 500 grams	4.22
501 to 1000 grams	24.29
Above 1 kg	70.92

Figure 4.11 Quantity of rice consumed by family per day

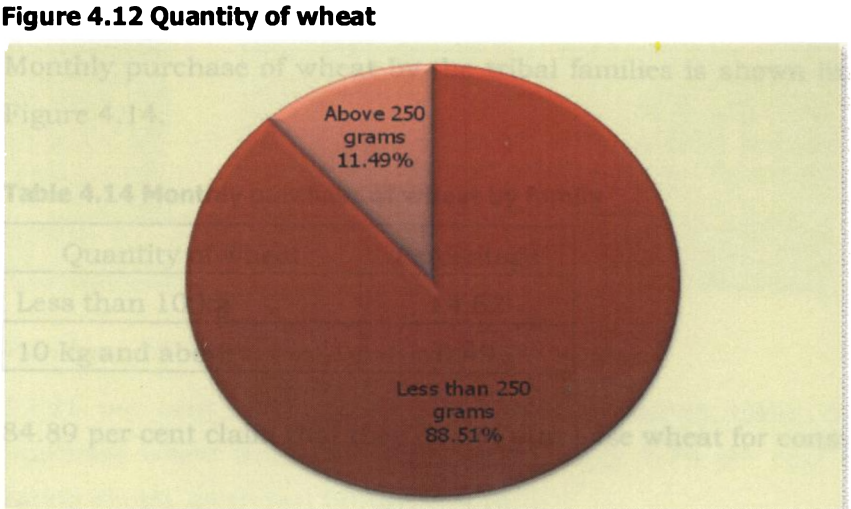


Quantity of wheat consumed is given in Table 4.12 and Figure 4.12.

Table 4.12 Quantity of Wheat

Quantity of wheat	Percentage
Less than 250 grams	88.51
Above 250grams	11.49
Total	100.00

Figure 4.12 Quantity of wheat

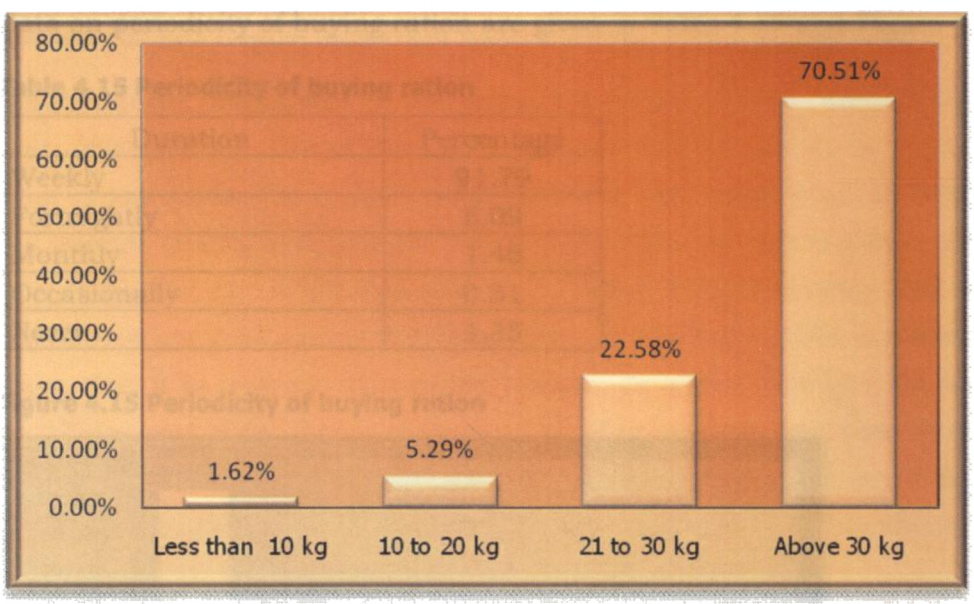


Details of monthly purchase of rice by the tribal families are given in Table 4.13 and Figure 4.13.

Table 4.13 Monthly purchase of rice by family

Quantity of rice	Percentage
Less than 10 kg	1.62
10 to 20 kg	5.29
21 to 30 kg	22.58
Above 30 kg	70.51

Figure 4.13 Monthly purchase of rice by family



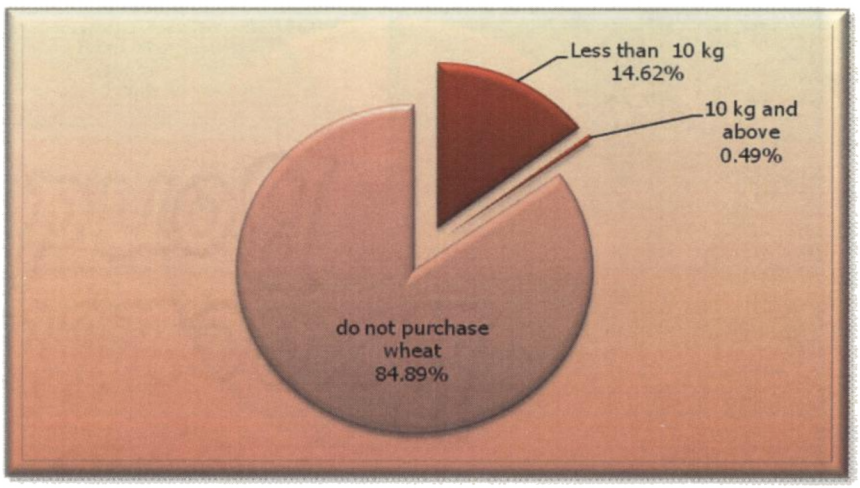
Monthly purchase of wheat by the tribal families is shown in Table 4.14 and Figure 4.14.

Table 4.14 Monthly purchase of wheat by family

Quantity of wheat	Percentage
Less than 10 kg	14.62
10 kg and above	0.49

84.89 per cent claim that they do not purchase wheat for consumption.

Figure 4.14 Monthly purchase of wheat by family

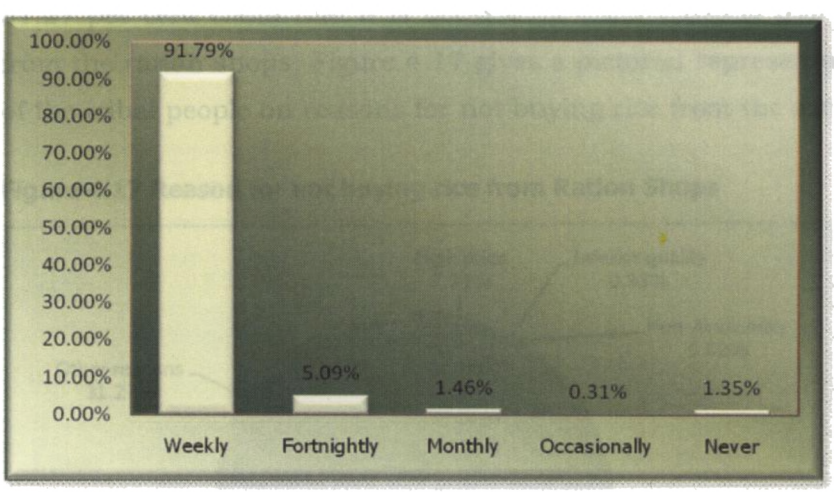


Data on periodicity of buying ration are given in Table 4.15 and Figure 4.15.

Table 4.15 Periodicity of buying ration

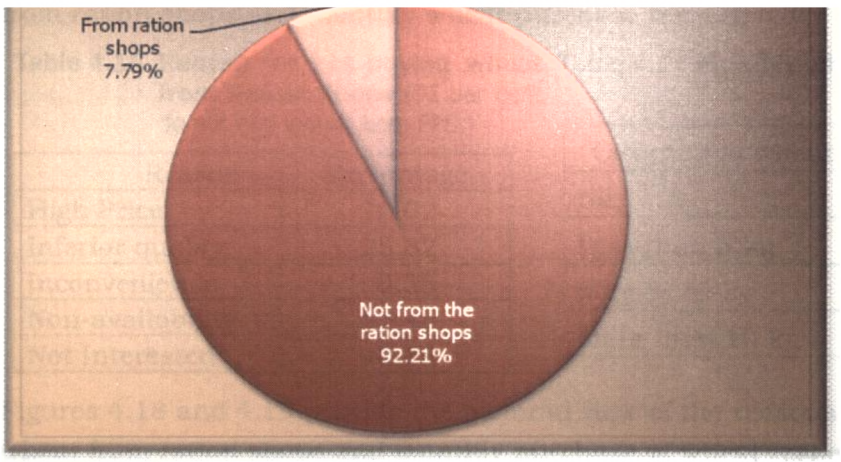
Duration	Percentage
Weekly	91.79
Fortnightly	5.09
Monthly	1.46
Occasionally	0.31
Never	1.35

Figure 4.15 Periodicity of buying ration



Purchase of wheat from ration shops

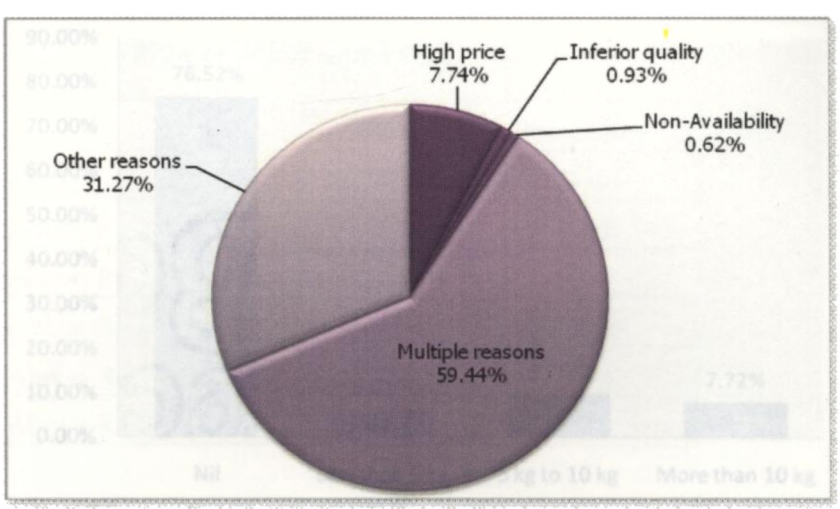
92.21 per cent of the people subjected to survey claim that they do not purchase wheat from the ration shops. Only 7.79 per cent buy wheat from ration shops, as shown in Figure 4.16.



Reason for not buying rice from Ration Shops

Opinion of the people who do not buy rice from the FPS, *ie.*, around three per cent, was collected. Out of this, 7.74 per cent claim that they do not buy rice from ration shops due to high price. 0.93 per cent says that it is because of the inferior quality that they do not buy rice from the ration shops. 0.62 per cent claim that rice is not available in the ration shops whenever they want to buy. 59.44 per cent among the people who do not buy rice from ration shops claim that it is because of multiple reasons as above that they do not buy. 31.27 per cent claim that it is because of other reasons that they do not buy from the ration shops. Figure 4.17 gives a pictorial representation of the views of the tribal people on reasons for not buying rice from the ration shops.

Figure 4.17 Reason for not buying rice from Ration Shops



Tables 4.16 and 4.17 provide the data on the reasons for not buying wheat from ration shops and monthly wheat purchase respectively.

Table 4.16 Reason for not buying wheat from Ration Shops (92 per cent do not buy wheat from FPS.)

Reason	Percentage
High Price	10.02
Inferior quality	25.82
Inconvenience	0.35
Non-availability	63.46
Not Interested	0.35

Table 4.17 Monthly wheat purchase

Quantity of wheat	Percentage
Nil	76.52
Less than 5 kg	6.01
5 kg to 10 kg	9.75
More than 10 kg	7.72

Figures 4.18 and 4.19 provide the pictorial view of the reasons for not buying wheat from ration shops and monthly purchase of wheat respectively.

Figure 4.18 Reason for not buying wheat from Ration Shops

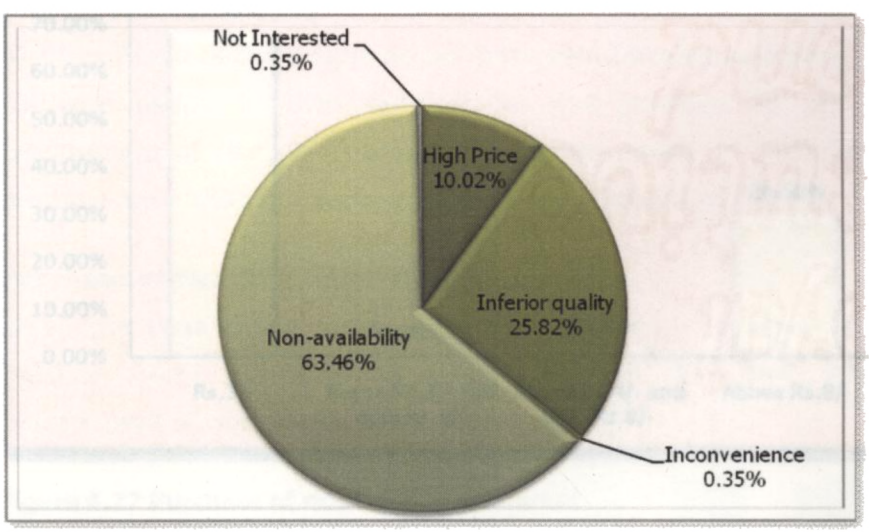
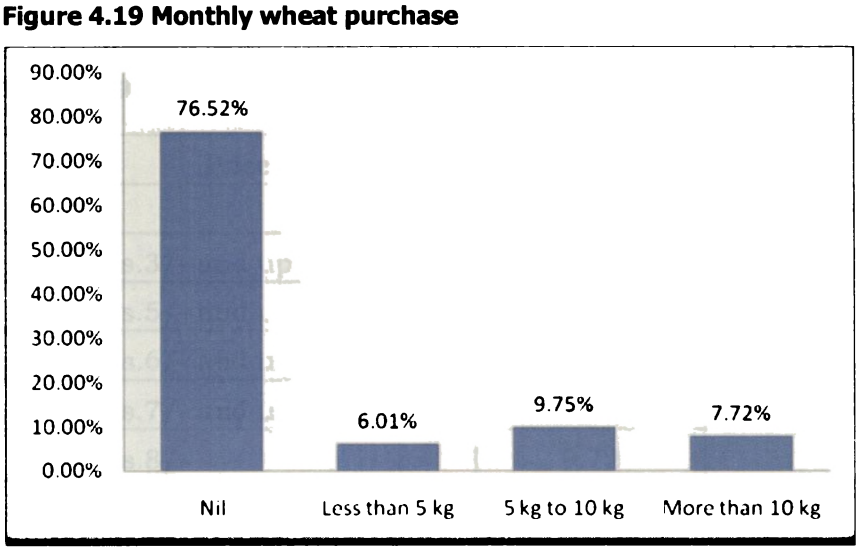


Figure 4.19 Monthly wheat purchase



Statement of the tribal people on price at which they get rice from ratio shop is shown in Table 4.18 and Figure 4.20.

Table 4.18 Price of rice under PDS

Price	Percentage
Rs.3/-	67.99
Above Rs.3/- and up to Rs.4/-	0.09
Above Rs.4/- and up to Rs.8/-	2.24
Above Rs.8/-	29.68

Figure 4.20 Price of rice under PDS

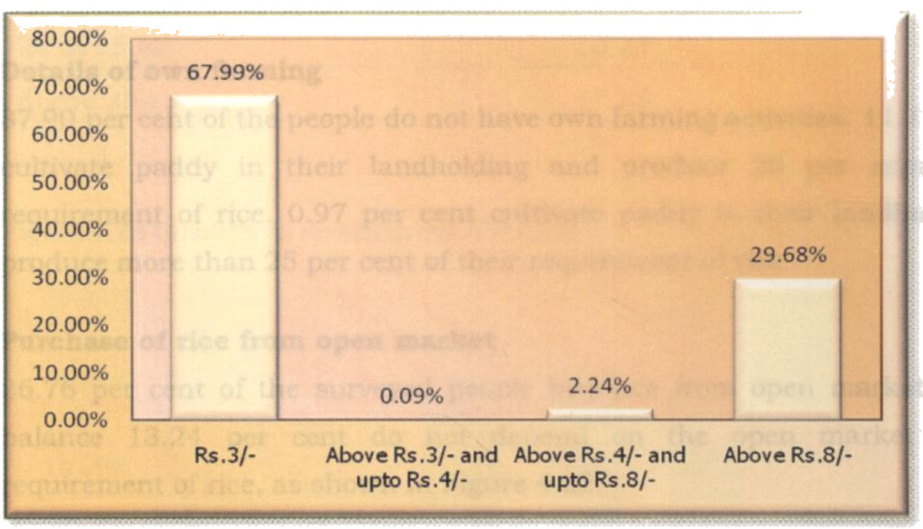
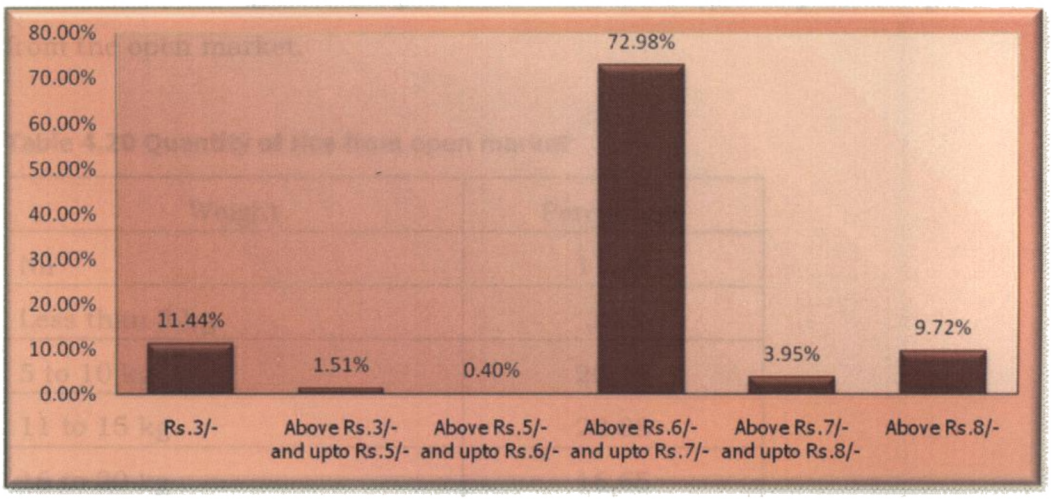


Table 4.19 and Figure 4.21 provide the data on price of wheat under PDS

Table 4.19 Price of wheat under PDS

Price	Percentage
Rs.3/-	11.44
Above Rs.3/- and up to Rs.5/-	1.51
Above Rs.5/- and up to Rs.6/-	0.40
Above Rs.6/- and up to Rs.7/-	72.98
Above Rs.7/- and up to Rs.8/-	3.95
Above Rs.8/-	9.72

Figure 4.21 Price of wheat under PDS



Details of own farming

87.90 per cent of the people do not have own farming activities. 11.13 per cent cultivate paddy in their landholding and produce 25 per cent of their requirement of rice. 0.97 per cent cultivate paddy in their landholding and produce more than 25 per cent of their requirement of rice.

Purchase of rice from open market

86.76 per cent of the surveyed people buy rice from open market also and balance 13.24 per cent do not depend on the open market for their requirement of rice, as shown in Figure 4.22.

Figure 4.22 Purchase of rice from open market

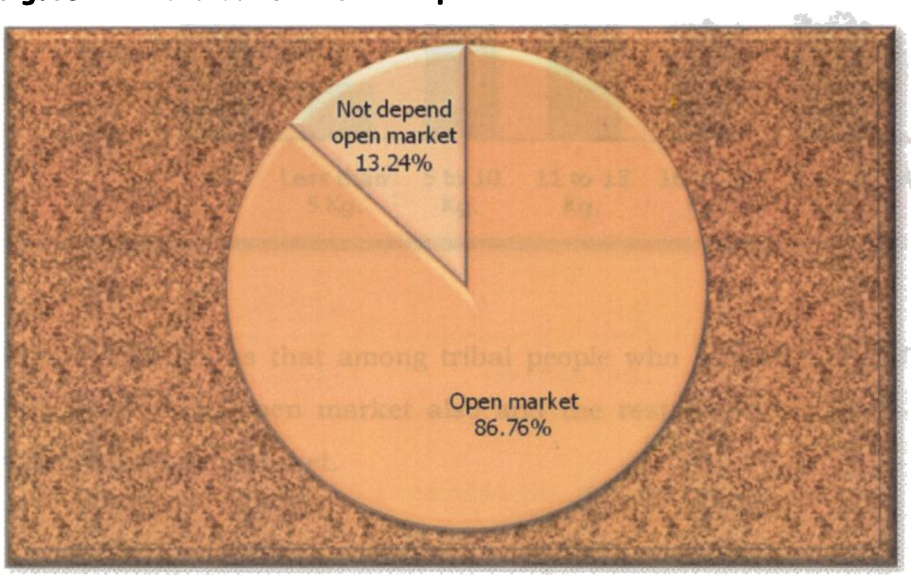


Table 4.20 and Figure 4.23 provide the details of quantity of rice purchased from the open market.

Table 4.20 Quantity of rice from open market

Weight	Percentage
Nil	11.29
Less than 5 kg	3.41
5 to 10 kg	20.15
11 to 15 kg	20.88
16 to 20 kg	16.65
21 to 25 kg	10.24
Above 25 kg	17.38

Figure 4.23 Quantity of rice from open market

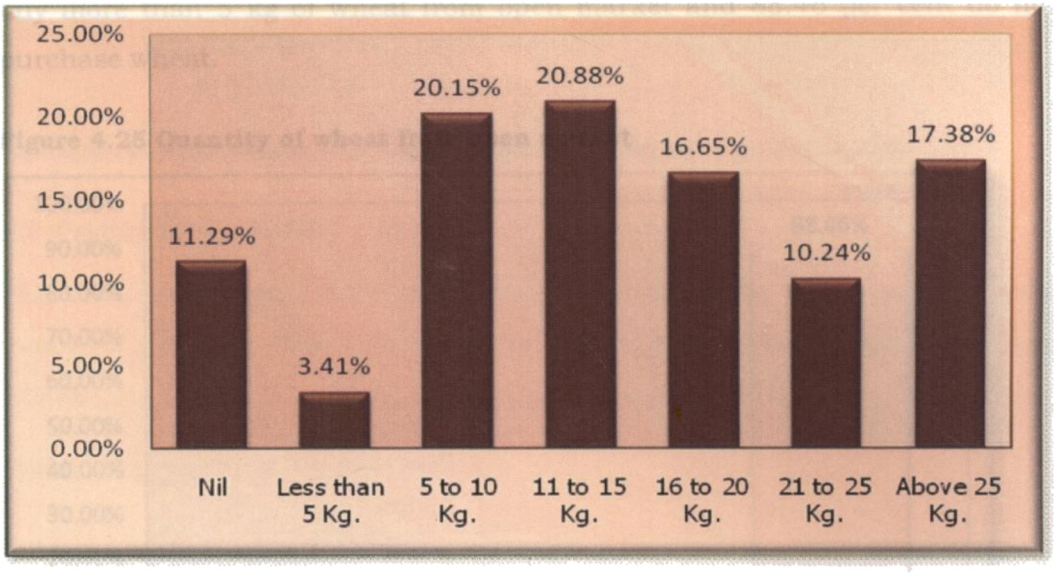
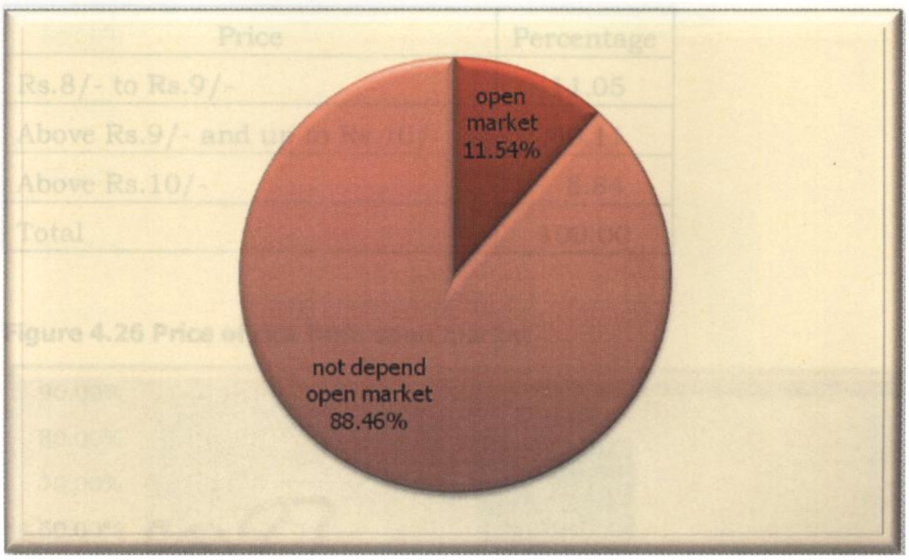


Figure 4.24 shows that among tribal people who buy wheat, 11.54 per cent buy wheat from open market also and the rest 88.46 per cent do not buy wheat from open market.

Figure 4.24 Purchase of wheat from open market



Quantity of wheat from open market

Figure 4.25 shows that 2.36 per cent buy only less than 5 kg. 9.18 per cent buy more than 5 kg of wheat from open market and 88.46 per cent do not purchase wheat.

Figure 4.25 Quantity of wheat from open market

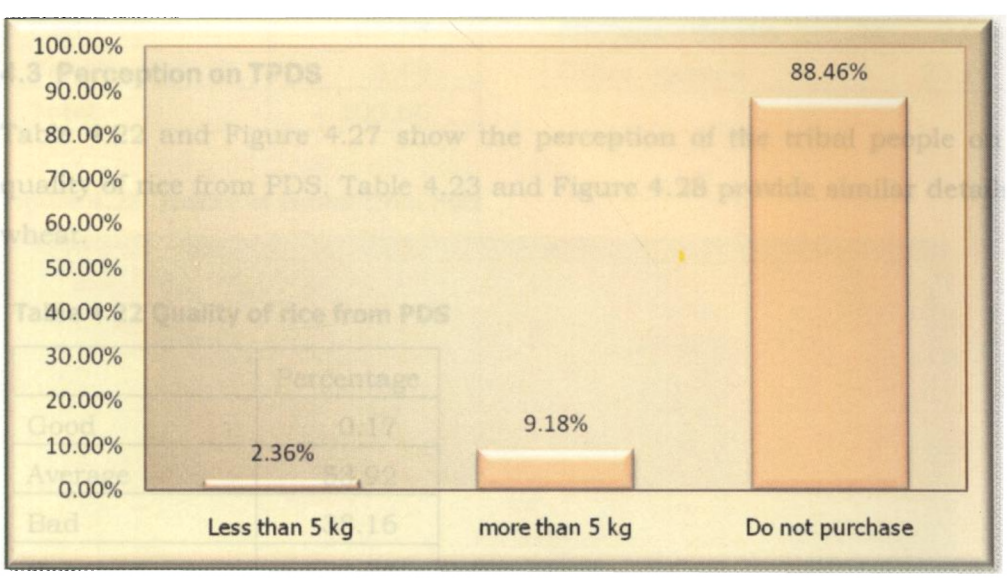
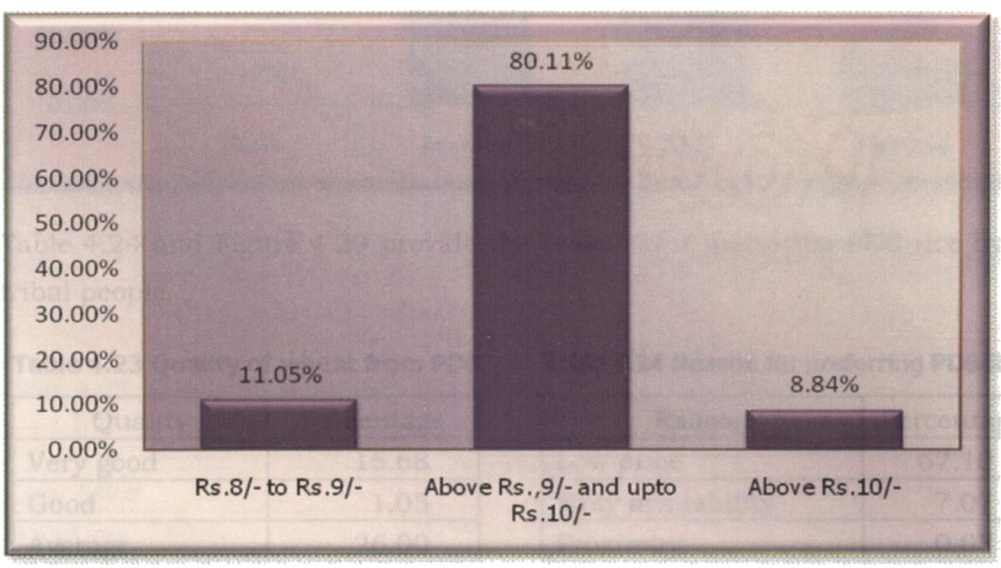


Table 4.21 and Figure 4.26 provide the data on price of rice from the open market.

Table 4.21 Price of rice from open market

Price	Percentage
Rs.8/- to Rs.9/-	11.05
Above Rs.9/- and up to Rs.10/-	80.11
Above Rs.10/-	8.84
Total	100.00

Figure 4.26 Price of rice from open market



4.3 Perception on TPDS

Table 4.22 and Figure 4.27 show the perception of the tribal people on the quality of rice from PDS. Table 4.23 and Figure 4.28 provide similar details on wheat.

Table 4.22 Quality of rice from PDS

	Percentage
Good	0.17
Average	53.92
Bad	38.16
Very bad	7.75
	100.00

Figure 4.27 Quality of rice from PDS

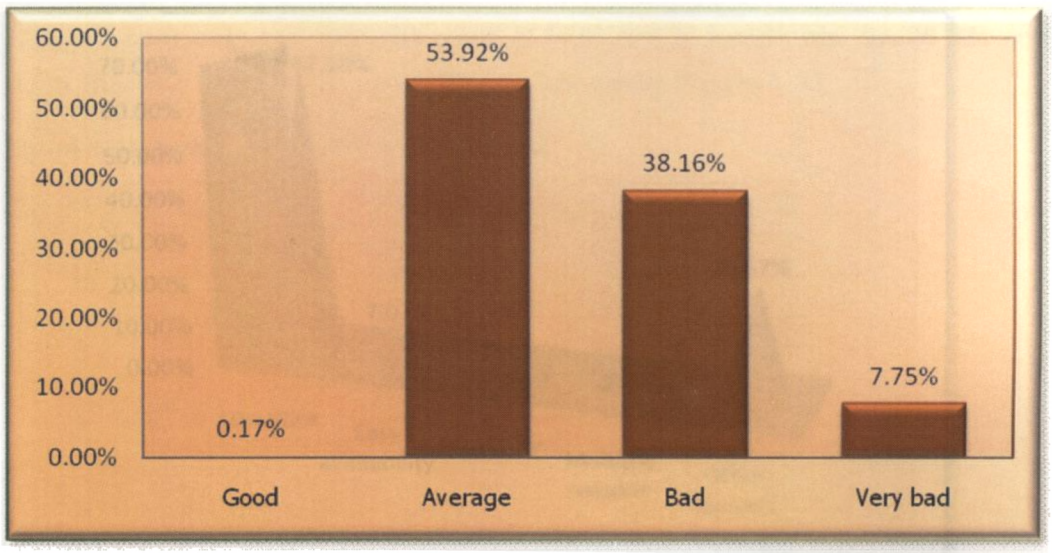


Table 4.24 and Figure 4.29 provide the reasons for preferring PDS rice by the tribal people.

Table 4.23 Quality of wheat from PDS

Quality	Percentage
Very good	15.68
Good	1.05
Average	26.00
Bad	48.78
Very bad	8.49
Total	100.00

Table 4.24 Reason for preferring PDS Rice

Reason	Percentage
Low price	67.10
Easy availability	7.07
Proximity	0.08
Multiple reasons	0.08
Other reasons	25.67

Figure 4.28 Quality of wheat from PDS

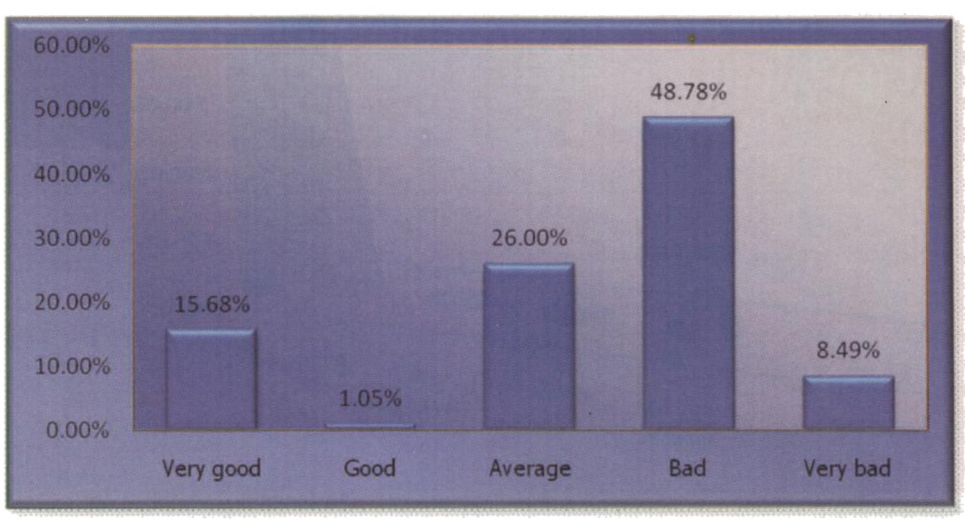


Figure 4.29 Reason for preferring PDS Rice

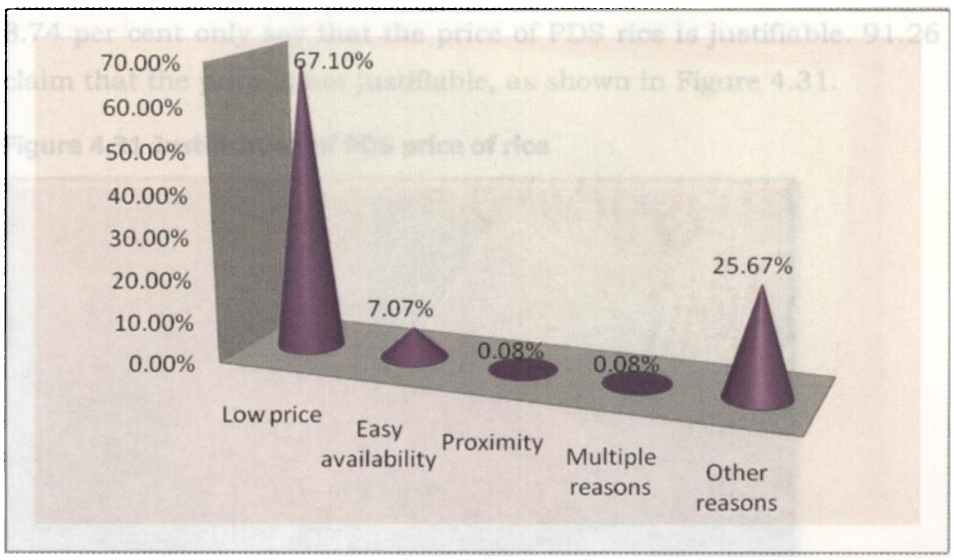
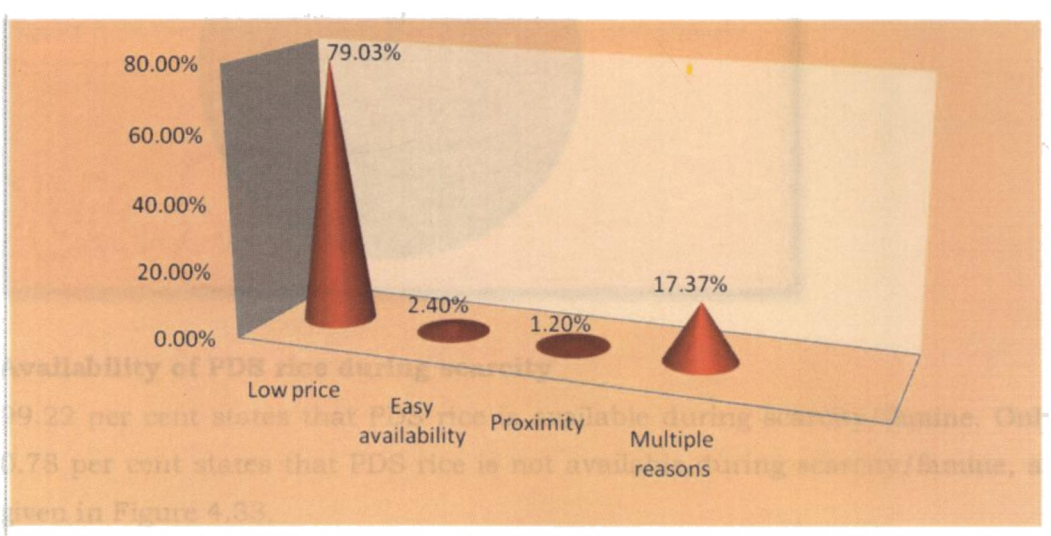


Table 4.25 and Figure 4.30 provide the reasons for preferring PDS wheat by tribal people those who buy wheat.

Table 4.25 Reason for preferring PDS Wheat

Reason	Percentage
Low price	79.03
Easy availability	2.40
Proximity	1.20
Multiple reasons	17.37
Total	100.00

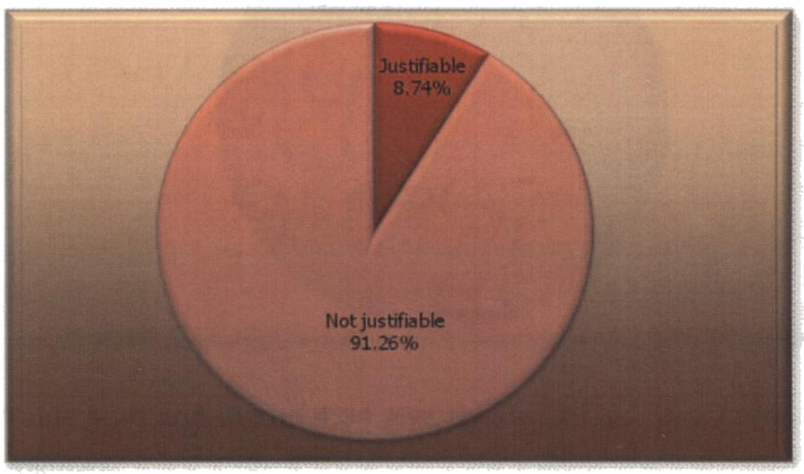
Figure 4.30 Reason for preferring PDS Wheat



Justification of PDS price of rice

8.74 per cent only say that the price of PDS rice is justifiable. 91.26 per cent claim that the price is not justifiable, as shown in Figure 4.31.

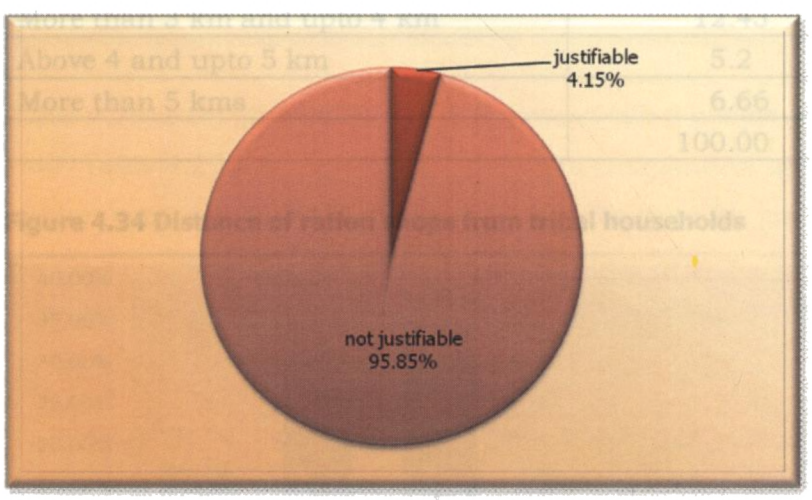
Figure 4.31 Justification of PDS price of rice



Justification of PDS wheat price

4.15 per cent says that the price of PDS wheat is justifiable. 95.85 per cent claim that the PDS price for wheat is not justifiable, as shown in Figure 4.32.

Figure 4.32 Justification of PDS wheat price



Availability of PDS rice during scarcity

99.22 per cent states that PDS rice is available during scarcity/famine. Only 0.78 per cent states that PDS rice is not available during scarcity/famine, as given in Figure 4.33.

Figure 4.33 Availability of PDS rice during scarcity

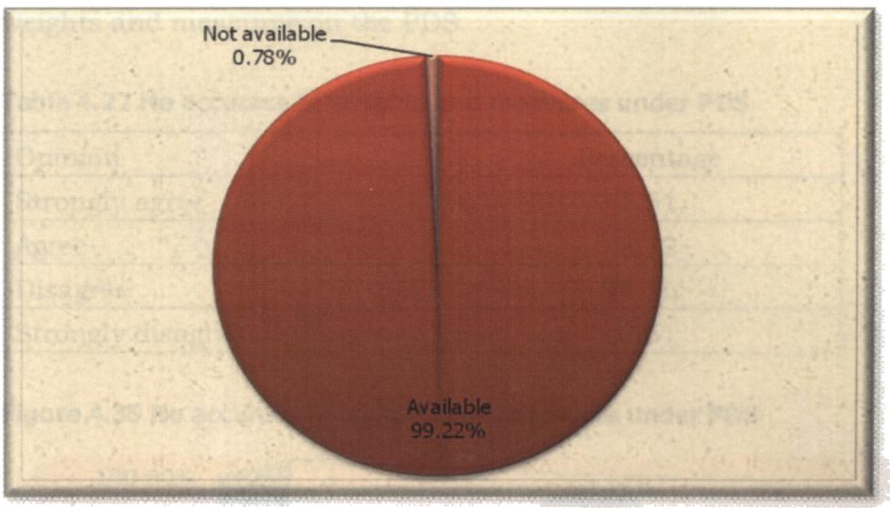


Table 4.26 and Figure 4.34 give the details on distance of FPS from the tribal colonies.

Table 4.26 Distance of ration shops from tribal households

Distance	Percentage
Less than 1 km	18.28
1 km to 2 km	22.58
More than 2 km upto 3 km	34.85
More than 3 km and upto 4 km	12.43
Above 4 and upto 5 km	5.2
More than 5 kms	6.66
	100.00

Figure 4.34 Distance of ration shops from tribal households

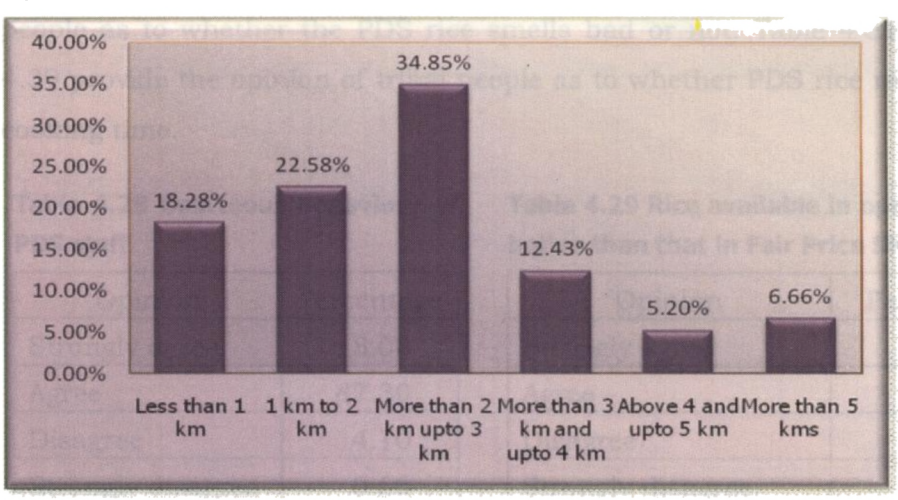


Table 4.27 and Figure 4.35 provide the views of tribal people on accuracy in weights and measures on the PDS.

Table 4.27 No accuracy in weights and measures under PDS

Opinion	Percentage
Strongly agree	1.51
Agree	3.72
Disagree	94.16
Strongly disagree	0.61

Figure 4.35 No accuracy in weights and measures under PDS

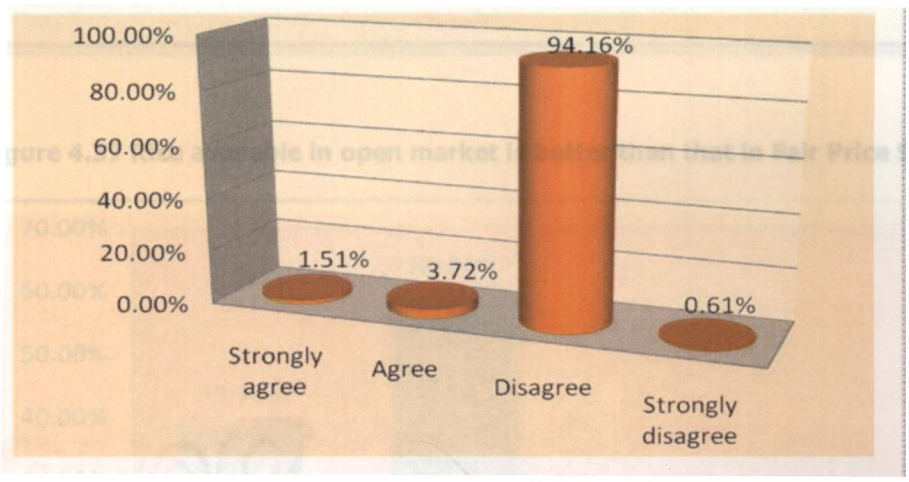


Table 4.28 and Figure 4.36 give the views of tribal people on behaviour of PDS staff. Table 4.29 and Figure 4.37 show the comparative quality of rice in open market with that in FPSs. Table 4.30 and Figure 4.38 give the views of tribal people as to whether the PDS rice smells bad or not. Table 4.31 and Figure 4.39 provide the opinion of tribal people as to whether PDS rice requires more cooking time.

Table 4.28 Courteous behaviour of PDS staff

Opinion	Percentage
Strongly agree	8.00
Agree	87.30
Disagree	4.10
Strongly disagree	0.60

Table 4.29 Rice available in open market is better than that in Fair Price Shops

Opinion	Percentage
Strongly agree	39.55
Agree	59.94
Disagree	0.34
Strongly disagree	0.17

Figure 4.36 Courteous behaviour of PDS staff

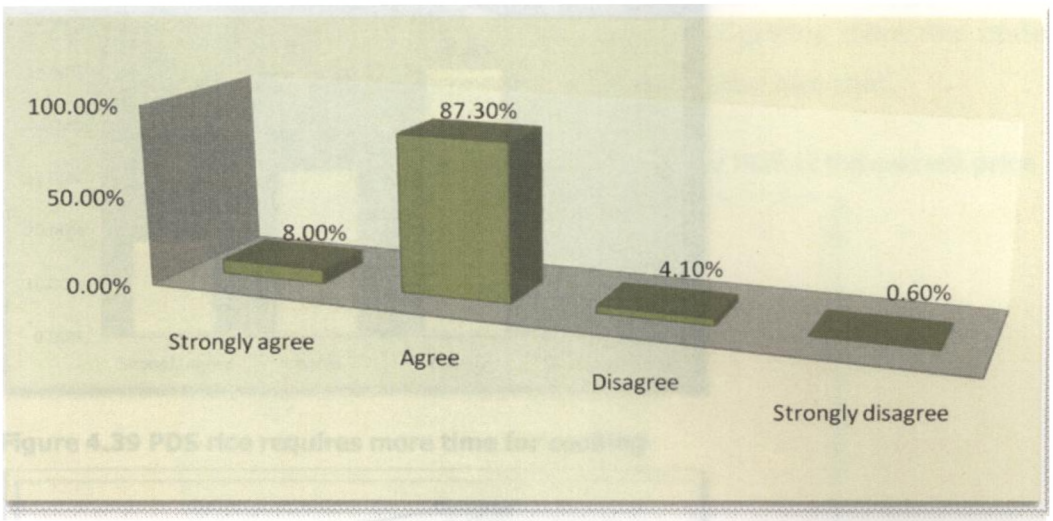


Figure 4.37 Rice available in open market is better than that in Fair Price Shops

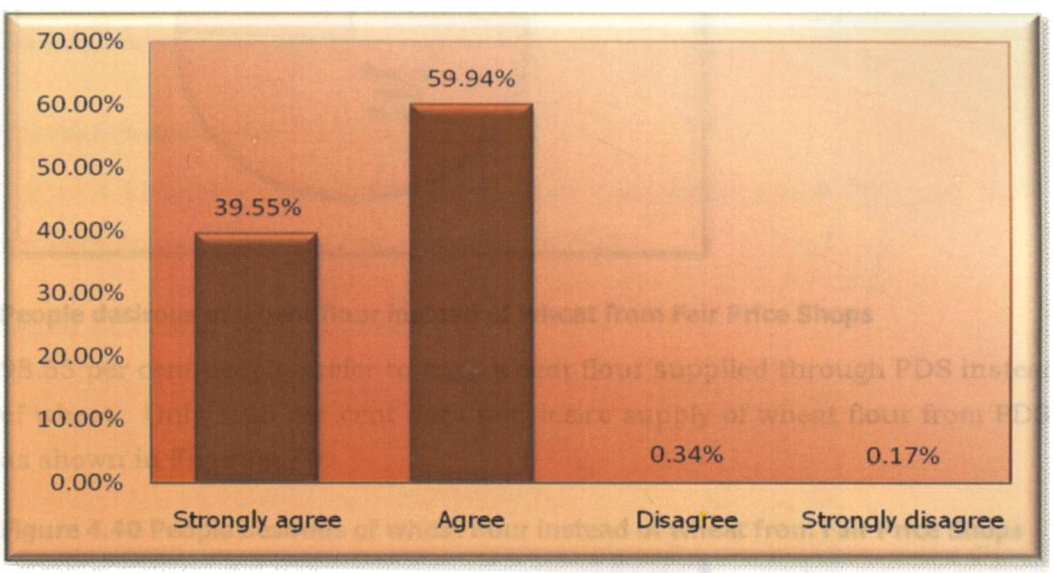


Table 4.30 PDS rice smells bad

Opinion	Percentage
Strongly agree	17.92
Agree	31.25
Disagree	50.48
Strongly disagree	0.35

Table 4.31 PDS rice requires more time for cooking

Opinion	Percentage
Strongly agree	75.72
Agree	23.76
Disagree	0.52

Figure 4.38 PDS rice smells bad

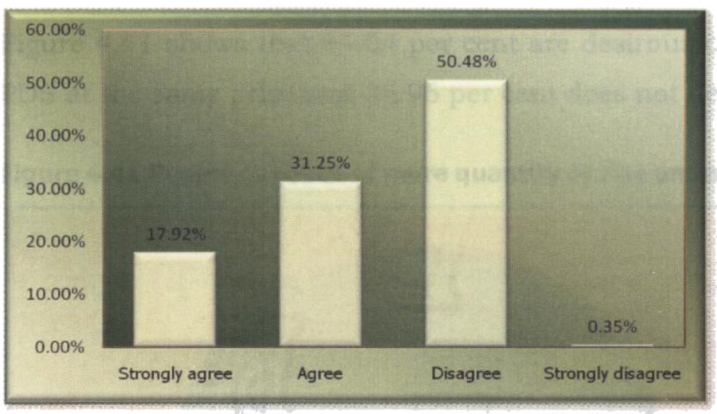
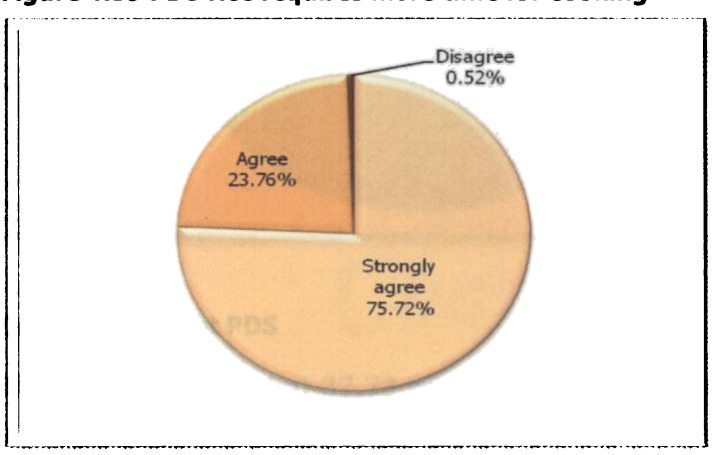


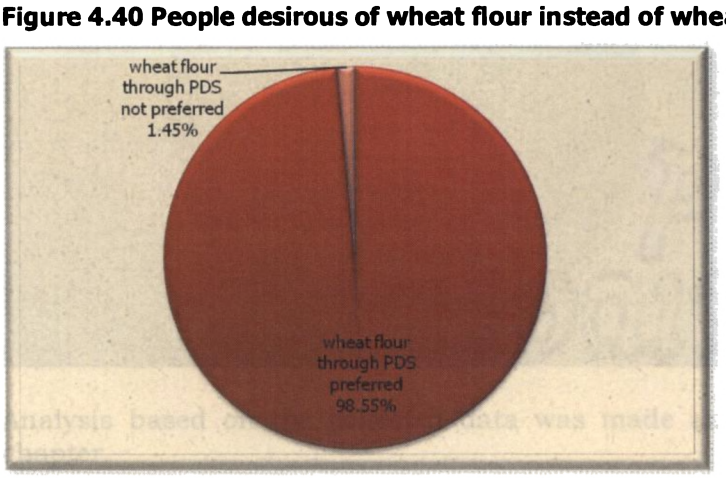
Figure 4.39 PDS rice requires more time for cooking



People desirous of wheat flour instead of wheat from Fair Price Shops

98.55 per cent people prefer to have wheat flour supplied through PDS instead of wheat. Only 1.45 per cent does not desire supply of wheat flour from PDS, as shown in Figure 4.40.

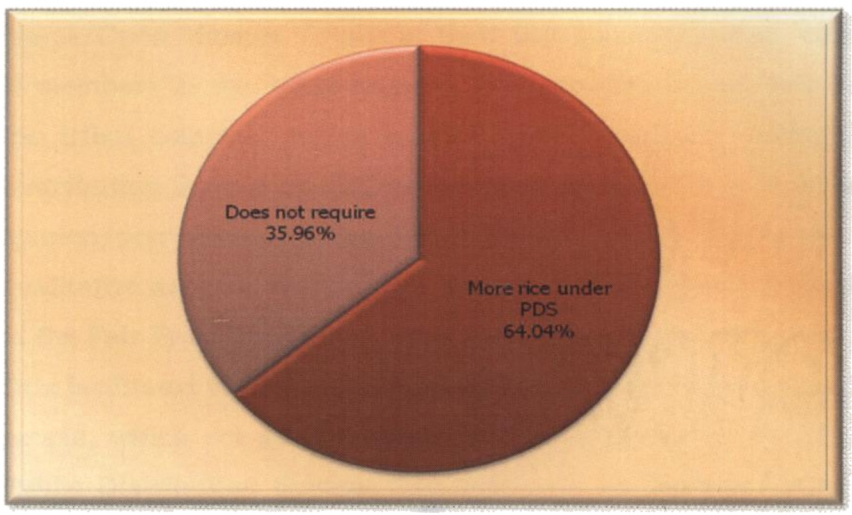
Figure 4.40 People desirous of wheat flour instead of wheat from Fair Price Shops



People desirous of more quantity of rice under PDS at the current price

Figure 4.41 shows that 64.04 per cent are desirous of getting more rice under PDS at the same price and 35.96 per cent does not desire like that.

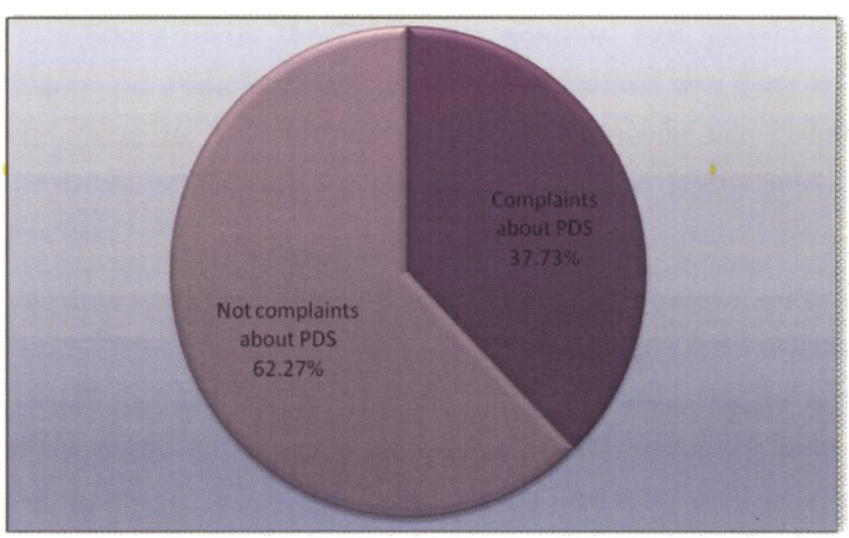
Figure 4.41 People desirous of more quantity of rice under PDS at the current price



Complaints about PDS

Figure 4.42 shows that 37.73 per cent have complaints about PDS and 62.27 per cent do not have any complaint about PDS.

Figure 4.42 Complaints about PDS



Analysis based on the collected data was made and presented in the next chapter.

Chapter 5
Analysis of Data

5. ANALYSIS OF DATA

The data collected have been analyzed and the results presented in this chapter to accomplish the objectives of the research study. The data relating to the household consumption, purchase of food grains from the Fair Price Shops/Open Market, details of their income, occupation, education, number of members in the tribal families, the proximity of the Fair Price Shops with the tribal colonies, prices of food grains available under Targeted Public Distribution System as well as the Open Market etc. have been analyzed. The opinion/perceptions of the tribal population on the price of food grains, qualitative aspects, accuracy in weights and measures, behaviour of the staff in the Fair Price Shops etc., were also analyzed and presented in this chapter. This facilitated to find out the attitudinal and behavioural aspects of the tribal people, which act as barriers to utilize the benefits offered by the Targeted Public Distribution System. The influence of TPDS in the reduction of food share among other expenditures of tribal households and the impact on the tribal people, if the TPDS is withdrawn etc, were also analyzed and presented in this chapter. The relation of various factors like household income, education, occupation, number of members in the family, proximity of the Fair Price Shops with the tribal colonies, expenditure on purchase of the food grains from the Open Market etc., with the quantity of food grains purchased from the Fair Price Shops under the TPDS were analyzed and presented in this chapter. Regression using Ordinary Least Square method was done to find out a model explaining the influence of the factors like income and distance of FPSs from the tribal settlements on the quantity of food grains purchased from open market.

The data have been analyzed with the help of advanced Software packages like MS ACCESS 2000, SPSS 11.0 and MS Excel 2000. All the data were entered in the MS ACCESS for the analysis purpose. Among the collected data, in some of the cases, data found either mismatching or missing were eliminated from the analysis. Since the size of the sample was reasonably sufficient, elimination of a few items of data would not affect the findings. The details of the analysis are given below:

The total number of data analyzed is 1231, as shown in Table 5.1.

Table 5.1 Details of number of households selected as sample

Sl. No.	District	No. of households
1	Idukki	253
2	Palakkad	352
3	Wayanad	626
	Total	1231

It has been found that in two Interview Schedules among 1233 schedules, data on some of the relevant items were missing or recorded by mistake. They were eliminated from analysis, leaving behind 1231 schedules for compilation and analysis.

While considering the consumption of food grains from the Fair Price Shops under the Targeted Public Distribution System, it is quite appropriate to classify the sample size in to two on the basis of their income, *i.e.* Below Poverty Line (BPL) and Above Poverty Line (APL). The details are shown below in Table 5.2.

Table 5.2 District wise BPL/APL Classification of households

Sl. No.	District	BPL	Percentage	APL	Percentage	Total
1	Idukki	223	88.14	30	11.86	253
2	Palakkad	261	74.15	91	25.85	352
3	Wayanad	570	91.05	56	8.95	626
	Total	1054	85.62	177	14.38	1231

Table 5.3 BPL/APL Classification of households having no ration cards

Availability of ration card	BPL	Percentage	APL	Percentage	Total	Percentage
Yes	994	85.76	165	14.24	1159	94.15
No	60	83.33	12	16.67	72	5.85
Total	1054		177		1231	100

As shown in Table 5.3, it is noted that among the tribal families who do not have Ration Cards, around 83 per cent belong to the Below Poverty Line (BPL) category. Majority of them have claimed that they were denied allotment of ration cards, even after filing application. Enquiry with authorities like Village Officer, Tahsildar and Taluk Supply Officer did not succeed.

5.1 Analysis on food grains consumption

Income wise analysis on the Consumption of food grains by the Tribal households

Analysis of the data regarding the consumption of food grains by the tribal households in relation to their income has been made and presented in Table 5.4.

Table 5.4 Food grain consumed by the tribal households per month

Income group	Number of households	Quantity of Rice in kg from TPDS	Quantity of wheat in kg from TPDS	Quantity of Rice in kg from open market	Quantity of wheat in kg from open market
Less than Rs.1000	143	3385	267.5	790	85
Rs.1000-2000	1025	26535	2475	16020	967.5
Above Rs.2000	63	1580	170	1035	100
Total	1231	31500	2912.5	17845	1152.5

Analysis for whole sample size

Total quantity of food grain purchased from the TPDS	31500+2912.5=	34412.5 kg
Total quantity of food grain purchased from open market	17845+1152.5=	18997.5 kg
Total quantity of rice purchased by the tribal families	31500+17845=	49345 kg
Total quantity of wheat purchased by the tribal families	2912.5+1152.5=	4065 kg
Total quantity of food grain purchased by the tribal families	34412.5+18997.5=	53410 kg
Average household consumption of food grains from TPDS		27.95 kg
Average household consumption of food grains from open market		15.43 kg
Average household consumption of food grains from both sources		43.38 kg
Average per capita consumption of food grains from TPDS		6.84 kg
Average per capita consumption of food grains from open market		3.78 kg
Average per capita consumption of food grains from both sources		10.62 kg

Therefore, in view of the established fact that the minimum requirement per person per day is 370 gms of food grains[98], *i.e.* 11.10 kg per month, as recommended by the Indian Council of Medical Research (ICMR), it has been found that the average per capita consumption by the tribal people from the Fair Price Shops under TPDS is only 62 per cent of the minimum requirement. Further, the per capita consumption including the purchase from the open market is only 96 per cent of the above stated minimum requirement.

The per capita consumption of food grains as per the 55th round National Sample Survey Organization data is as follows:

Rice

PDS	3.48 kg
Open Market	4.47 kg
Other Sources	0.04 kg
Total	7.99kg

Wheat

PDS	0.54 kg
Open Market	0.34 kg
Total	0.88 kg

Both food grains put together, national average per capita consumption of food grains comes to 8.87 kg per month. Since the per capita consumption of the tribal people per month is 10.62 kg, it is higher by 1.75 kg per month compared to the National average per capita consumption of food grains. It is 19.72 per cent higher than the National average.

Hypothesis H_1

Per capita food grains consumption of the tribal population in Kerala is lower than the national average per capita consumption of food grains.

It was found that the per capita consumption of the tribal population in Kerala is higher than the national average. Therefore, the hypothesis that the per capita food grains consumption of the tribal people is lower than the national average per capita consumption of food grains cannot be accepted.

---

[98] Venugopal.K.R. (1992). Deliverance from hunger, The Public Distribution System in India, New Delhi: Sage Publications India Pvt. Ltd.

Analysis on the consumption of food grains by the BPL and APL categories of Tribal households

Analysis of the data regarding the consumption of food grains by the tribal households belonging to the BPL as well as APL category has been made and presented in Table 5.5.

Table 5.5 Food grain consumed by the BPL/APL tribal households per month

BPL/APL	Number of households	Quantity of Rice in kg from TPDS	Quantity of wheat in kg from TPDS	Quantity of Rice in kg from open Market	Quantity of wheat in kg from open Market
BPL	1054	27215	2180	15460	965
APL	177	4285	732.5	2385	187.5
Total	1231	31500	2912.50	17845	1152.5

BPL Households

Total quantity of food grain purchased by the BPL families from the TPDS	27215+2180=	29395 kg
Total quantity of food grain purchased by the BPL families from open market	15460+965=	16425 kg
Total quantity of rice purchased by the BPL tribal families	27215+15460=	42675 kg
Total quantity of wheat purchased by the BPL tribal families	2180+965=	3145 kg
Total quantity of food grain purchased by the BPL tribal families	29395+16425=	45820 kg
Average household consumption of food grains by the BPL families from TPDS		27.89 kg
Average household consumption of food grains by the BPL families from open market		15.58 kg
Average household consumption of food grains by the BPL families from both sources per month		43.47 kg
Average per capita consumption of food grains by the BPL tribal people from TPDS		6.47 kg
Average per capita consumption of food grains by the BPL tribal people from open market		3.61 kg
Average per capita consumption of food grains by the BPL tribal people from both sources		10.08 kg

Therefore, in view of the established fact that the minimum requirement per person per day is 370 grams of food grains, *i.e.* 11.10 kg per month, as recommended by the Indian Council of Medical Research (ICMR), it has been found that the average per capita consumption by the tribal people belonging to the BPL category from the Fair Price Shops under TPDS is only 58 per cent of the minimum requirement. Further, the per capita consumption including the purchase from the open market is only 91 per cent of the above stated minimum requirement.

The per capita consumption of food grains as per the 55th round National Sample Survey Organization data is 8.87 kg per month. Since the per capita consumption of the BPL category of tribal people per month is 10.08 kg, it is higher by 1.21 kg per month compared to the National average per capita consumption of food grains. It is 13.64 per cent higher than the National average.

APL Households

Total quantity of food grain purchased by the APL families from the TPDS	4285+732.5=	5017.5 kg
Total quantity of food grain purchased by the APL families from open market	2385+187.5=	2572.5 kg
Total quantity of rice purchased by the APL tribal families	4285+2385=	6670 kg
Total quantity of wheat purchased by the APL tribal families	732.5+187.5=	920 kg
Total quantity of food grain purchased by the APL tribal families	5017.5+2572.5=	7590 kg
Average household consumption of food grains by the APL families from TPDS		28.35 kg
Average household consumption of food grains by the APL families from open market		14.53 kg
Average household consumption of food grains by the APL families from both sources per month		42.88 kg

Average per capita consumption of food grains by the APL tribal people from TPDS	10.27 kg
Average per capita consumption of food grains by the APL tribal people from open market	5.26 kg
Average per capita consumption of food grains by the APL tribal people from both sources	15.53 kg

Therefore, in view of the established fact that the minimum requirement per person per day is 370 grams of food grains, *i.e.* 11.10 kg per month, as recommended by the Indian Council of Medical Research (ICMR), it has been found that the average per capita consumption by the tribal people belonging to the APL category from the Fair Price Shops under TPDS is 93 per cent of the minimum requirement. Further, the per capita consumption including the purchase from the open market is 40 per cent higher than the above stated minimum requirement. The per capita consumption of food grains as per the 55th round National Sample Survey Organization data is 8.87 kg per month. Since the per capita consumption of the APL category of tribal people per month is 15.53 kg, it is higher by 6.66 kg per month compared to the National average per capita consumption of food grains. It is 75 per cent higher than the National average.

Analysis to find out the reasons why the Tribal families do not utilize the full allotment of food grains under the Targeted Public Distribution System

On analysis of the data on purchase of food grains by the tribal families from the Fair Price Shops, it is found that seven percent of the families do not buy more than 15 kg of food grains from the Fair Price Shops under the Targeted Public Distribution System. It means that they utilize only less than 60 per cent of their entitlement. Among the above said seven percent, 84 per cent are Below Poverty Line (BPL) and the rest of the families, *i.e.* 16 per cent only belong to the Above Poverty Line (APL) as per their income.

The data on the number of members in those families has been ascertained as follows:

Average number of members in the BPL families = 4

Average number of members in the APL families = 3

Per capita income was also analyzed:

Average monthly per capita income of the members of the BPL families = Rs.319.15

Average monthly per capita income of the members of the APL families = Rs.667.25

Here, the average per capita income of the members of the APL families, who do not buy more than 15 kgs of food grains (60 per cent of entitlement) from the Fair Price Shops, is more than double the average per capita income of the members of the BPL families.

Reasons for the non- utilization of the entitlement by both the BPL as well as the APL tribal people has also been probed further.

The monthly average quantity of rice purchased from the open market by the BPL families = 14.67 kg

Monthly average quantity of rice purchased from the open market by the APL families = 13.47 kg

From the above, it is found that the BPL families purchase slightly more quantity of rice from the open market than the APL families, on an average.

A pertinent reason for the tribal families, both APL and BPL, in purchasing a portion of their requirement of rice from the open market is the better quality of rice available in the open market, even though costlier. Almost 99 per cent of the tribal families emphasize that quality of rice available in the open market is better than that available in Fair Price Shops. In spite of this quality constraint, majority of the tribal people, *i.e.* around 67 per cent prefer to buy rice from Fair Price Shops mainly because of the low price.

One of the reasons for the BPL tribal families in purchasing rice from the open market is the credit facility provided by the private traders.

Considering the data on the distance of the Fair Price Shops from the tribal colonies, it is seen that 65 per cent of the BPL families reside within one kilometer radius of the Fair Price Shops and another 32 per cent of them are within one to two kilometer radius. In the case of the APL families, 73 per cent are within one kilometer radius and another 20 per cent are within one to two kilometer radius of the Fair Price Shops. Therefore, the distance of the Fair

Price Shops from the tribal colonies cannot be attributed as a very pertinent reason for either the BPL families or the APL families for their non-utilization of the allotment of food grains from the TPDS quota in full. However, the hypothesis on this aspect was tested and result noted in this chapter.

On analysis of the expenditure on food and non-food items of the BPL families who do not utilize more than 60 per cent of their TPDS entitlement, the food share comes to 54 per cent of the total expenditure, whereas the non-food expenditure is only 46 per cent of the total expenditure. In the case of the APL families, the food share is only 40 per cent of the total expenditure and the expenditure on non-food items is to the tune of 60 per cent of the total expenditure.

Percentage of food share in the household expenditure

The food share among the household expenditures is analysed income wise and shown in Table 5.6.

Table 5.6 Food share in household expenditure

Income	Minimum (%)	Maximum (%)	Average (%)
BPL	30.76	100.00	55.13
APL	6.97	87.96	51.86
Income group of less than Rs.1000/-	35.14	100.00	57.42
Income between Rs.1000- 2000/-	30.76	87.96	55.18
Income group above Rupees 2000/-	7.00	87.66	39.93

It has been noted that one family among the 1231 families spend only 7 per cent on food among other expenditures of the household. All the five members of the family aged between 23 years and 74 years are engaged in manual labour in the forest land. Therefore, they are able to limit their expenditure on food to 7 per cent and probably the rest is either spent on other non-food items of expenditure or being saved for future use. There are people who spend 100 per cent of their income on food requirements alone, since their income may be only just sufficient to meet their food requirements or even insufficient to meet their food requirements.

5.2 Impact of TPDS

Analysis on the impact of TPDS on tribal people was made. Table 5.7 shows the details of the total sample size. Table 5.8 gives the details about BPL tribal people and Table 5.9 provide the details of APL tribal people.

Table 5.7 Analysis to study the impact on the tribal people, if the TPDS is withdrawn

Sl. No.	Item	Quantity (kg)	Average price per kg (Rs.)	Value (Rs.)
1	TPDS Rice	31500	4.64	146006.25
2	Open market Rice	17845	9.74	173811.25
3	TPDS Wheat	2912.50	5.56	16193.75
4	Open market Wheat	1152.50	8.84	10190.00
5	Total Rice expenditure (1+2)	49345	6.48	319817.50
6	Total Wheat expenditure (3+4)	4065	6.49	26383.75
7	Foodgrains expenditure(5+6)	53410	6.48	346201.25
8	Other food expenditure			590916.00
9	Total food expenditure (7+8)			937117.25
10	Non-food exp.			816225.00
11	Total household expenditure (9+10)			1753342.25

Rice supplied free of cost under TPDS = 686 kg

Value of forest produce collected = Rs.98925.00

Average price of rice from open market = Rs.9.74

Quantity of rice that can be purchased from open market using the amount normally used to buy rice from Fair Price Shop under TPDS, if TPDS is withdrawn

=Rs.146006.25/Rs.9.74 = 14990.37 kg, *i.e.* only 47.59 per cent of the quantity will be available from open market with the amount normally utilized to buy rice from TPDS.

Average price of wheat from open market =Rs.8.84

Quantity of wheat that can be purchased from open market using the amount normally used to buy wheat from Fair Price Shop under TPDS, if TPDS is withdrawn

=Rs.16193.75/Rs.8.84 = 1831.87 kg, *i.e.* only 62.90 per cent of the quantity will be available from open market with the amount normally utilized to buy wheat from TPDS.

Total food grain available per person per month as above, *i.e.*, (14990.37+1831.87/5028) =3.35 kg

The per capita consumption of food grains as per the 55th round National Sample Survey Organization data is 8.87 kg per month. Since the availability of food grains is only 3.35 kg per person per month against the minimum per capita consumption standard, the deficit quantity per person per month will be 5.54 kg, *i.e.*, the availability is only 37.77 per cent of the national standard consumption and the deficit is 62.23 per cent.

Further, in view of the established fact that the minimum requirement per person per day is 370 grams of food grains, *i.e.* 11.10 kg per month, as recommended by the Indian Council of Medical Research (ICMR), and the availability of food grains being only 3.35 kg per person per month, the deficit will be 7.75 kg, *i.e.* a deficit of 70 per cent.

Table 5.8 Analysis to study the impact on the BPL tribal people, if the TPDS is withdrawn

Sl. No.	Item	Quantity (kg)	Average price per kg (Rs.)	Value (Rs.)
1	TPDS Rice	27215	3.00	81645.00
2	Open market Rice	15460	9.74	150580.40
3	TPDS Wheat	2180	3.00	6540.00
4	Open market Wheat	965	8.84	8530.60
5	Total Rice expenditure (1+2)	42675	5.44	232225.40
6	Total Wheat expenditure (3+4)	3145	4.79	15070.60
7	Foodgrains expenditure(5+6)	45820	5.40	247296.00
8	Other food expenditure			545628.75
9	Total food expenditure (7+8)			792924.75
10	Non-food exp.			655019.00
11	Total household expenditure (9+10)			1447943.75

Rice supplied free of cost under TPDS = 686 kg

Value of forest produce collected = Rs.98925.00

Average price of rice from open market = Rs.9.74

Quantity of rice that can be purchased from open market using the amount normally used to buy rice from Fair Price Shop under TPDS, if TPDS is withdrawn

=Rs.81645/Rs.9.74 = 8382.44 kg, *i.e.* only 30.80 per cent of the quantity will be available from open market with the amount normally utilized to buy rice from TPDS.

Average price of wheat from open market =Rs.8.84

Quantity of wheat that can be purchased from open market using the amount normally used to buy wheat from Fair Price Shop under TPDS, if TPDS is withdrawn

=Rs.6540/Rs.8.84 = 739.82 kg, *i.e.* only 33.94 per cent of the quantity will be available from open market with the amount normally utilized to buy wheat from TPDS.

Total food grain available per person per month as above, *i.e.*, (8382.44+739.82/4540) =2 kg

The per capita consumption of food grains as per the 55th round National Sample Survey Organization data is 8.87 kg per month. Since the availability of food grains is only 2 kg per person per month against the minimum per capita consumption standard, the deficit quantity per person per month will be 6.87 kg, *i.e.*, the availability is only 22.65 per cent of the national standard consumption and the deficit is 77.35 per cent.

Further, in view of the established fact that the minimum requirement per person per day is 370 grams of food grains, *i.e.* 11.10 kg per month, as recommended by the Indian Council of Medical Research (ICMR), and the availability of food grains being only 2 kg per person per month, the deficit will be 9.10 kg, *i.e.* a deficit of 82 per cent.

Table 5.9 Analysis to study the impact on the APL tribal people, if the TPDS is withdrawn

Sl. No.	Item	Quantity (kg)	Average price per kg (Rs.)	Value (Rs.)
1	TPDS Rice	4285	8.90	38136.50
2	Open market Rice	2385	9.74	23229.90
3	TPDS Wheat	732.50	6.70	4907.75
4	Open market Wheat	187.50	8.84	1657.50
5	Total Rice expenditure (1+2)	6670	9.20	61366.40
6	Total Wheat expenditure (3+4)	920	7.14	6565.25
7	Foodgrains expenditure(5+6)	7590	8.95	67931.65
8	Other food expenditure			76260.85
9	Total food expenditure (7+8)			144192.50
10	Non-food exp.			161206.00
11	Total household expenditure (9+10)			305398.50

Rice supplied free of cost under TPDS = 686 kg

Value of forest produce collected = Rs.98925.00

Average price of rice from open market = Rs.9.74

Quantity of rice that can be purchased from open market using the amount normally used to buy rice from Fair Price Shop under TPDS, if TPDS is withdrawn

=Rs.38136.50/Rs.9.74 = 3915.45 kg, *i.e.* 91.38 per cent of the quantity will be available from open market with the amount normally utilized to buy rice from TPDS.

Average price of wheat from open market =Rs.8.84

Quantity of wheat that can be purchased from open market using the amount normally used to buy wheat from Fair Price Shop under TPDS, if TPDS is withdrawn

=Rs.4907.75/Rs.8.84 = 555.18 kg, *i.e.* 75.79 per cent of the quantity will be available from open market with the amount normally utilized to buy wheat from TPDS.

Total food grain available per person per month as above, *i.e.*, (3915.45+555.18/488) =9.16 kg

The per capita consumption of food grains as per the 55th round National Sample Survey Organization data is 8.87 kg per month. Since the availability of food grains is 9.16 kg per person per month, 0.26 kg or 260 grams of food grain will be in excess of the national average consumption, *i.e.*, the availability is three percent higher than the national standard consumption.

Further, in view of the established fact that the minimum requirement per person per day is 370 grams of food grains, *i.e.* 11.10 kg per month, as recommended by the Indian Council of Medical Research (ICMR), and the availability of food grains being only 9.16 kg per person per month, the deficit will be 1.94 kg, *i.e.* a deficit of 17.48 per cent.

Analysis to find out the extent of reduction in expenditure on food among the total household expenditure of the tribal people by the consumption of food grains under TPDS

Total household expenditure	Rs.1753342.25
Food expenditure	Rs.937117.25
Food expenditure, if food grains purchased from open market solely (49345 x Rs.9.74+4065 x Rs.8.84+ Rs.590916)	Rs.1107470.90
Share of food expenditure as per cent, If TPDS food grains provided and purchased	53.45 per cent
Share of food expenditure as per cent, If TPDS food grains not provided, and resorted to open market purchase, and every other condition remaining constant	63.16 per cent

Therefore, TPDS facilitates a reduction of around 9.71 per cent in the food expenditure among the total household expenditure of the tribal people.

Analysis to find out the extent of reduction in expenditure on food among the total household expenditure of the BPL tribal people by the consumption of food grains under TPDS

Total household expenditure	Rs.1447943.75
Food expenditure	Rs.792924.75
Food expenditure, if food grains purchased from open market solely (42675 x Rs.9.74+3145 x Rs.8.84+ Rs.545628.75)	Rs.989085.05
Share of food expenditure as per cent, If TPDS food grains provided and purchased	54.76 per cent
Share of food expenditure as per cent, If TPDS food grains not provided, and resorted to open market purchase, and every other condition remaining constant	68.31 per cent

Therefore, TPDS facilitates a reduction of around 13.55 per cent in the food expenditure among the total household expenditure of the BPL tribal people.

Analysis to find out the extent of reduction in expenditure on food among the total household expenditure of the APL tribal people by the consumption of food grains under TPDS

Total household expenditure	Rs.305398.50
Food expenditure	Rs.144192.50
Food expenditure, if food grains purchased from open market solely (6670 x Rs.9.74+920 x Rs.8.84+Rs.76260.85)	Rs.149359.45
Share of food expenditure as per cent, If TPDS food grains Provided and purchased	47.21 per cent
Share of food expenditure as per cent, If TPDS food grains not provided, and resorted to open market purchase, and every other condition remaining constant	48.91 per cent

Therefore, TPDS facilitates a reduction of around 1.70 per cent in the food expenditure among the total household expenditure of the APL tribal people.

Hypothesis H_2

TPDS in food grains has got direct influence on reduction of food share in household expenditure of tribal households in Kerala.

The hypothesis stands accepted.

Analysis of influencing factors on the quantity of food grains purchased from the Fair Price Shops under the Targeted Public Distribution System

The influence of each factor, *i.e.* the household income, number of members in the tribal families, highest educational qualification of the members in each tribal family, occupation of the head of the family, proximity of the Fair Price Shops with the tribal colonies and the expenditure on account of purchase of food grains from the Open Market etc., on the quantity of food grains purchased from the Fair Price Shops under the Targeted Public Distribution System were analyzed one by one. Analysis has been done for the sample size in total as well as after segregating the total sample size in to Below Poverty Line (BPL) and Above Poverty Line (APL).

5.3 Influence of Household Income

Total size of sample in respect of tribal families without BPL/APL segregation was 1231. Table 5.10 shows the classification of quantity of rice purchased by the tribal people in general from FPSs, which have been classified as four groups.

Table 5.10 Classification of Quantity of purchase of rice from the Fair Price Shops

Sl. No.	Range of quantity of rice purchased from FPSs	Group code
1	15 kg or lesser	3
2	Above 15 kg to 20 kg	4
3	Above 20 kg to 25 kg	5
4	Above 25 kg	6

The classification of quantity of wheat purchased from FPSs has been made as three groups as shown in Table 5.11.

Table 5.11 Classification of Quantity of purchase of wheat from the Fair Price Shops

Sl. No.	Range of quantity of wheat purchased from FPSs	Group code
1	< 5 kg	1
2	5 kg to 10 kg	2
3	> 11 kg	3

The total monthly household income of the tribal families have also been grouped in to three as shown in Table 5.12.

Table 5.12 Classification of household monthly income

Sl. No.	Range of monthly income in Rs.	Group code
1	Below Rs.1000/- per month	1
2	Rs.1000 to Rs.2000/-	2
3	Above Rs.2000/-	3

Table 5.13 shown below provides the cross tabulation of the data relating to the household income of the tribal families and the quantity of rice purchased by the households from the Fair Price Shops.

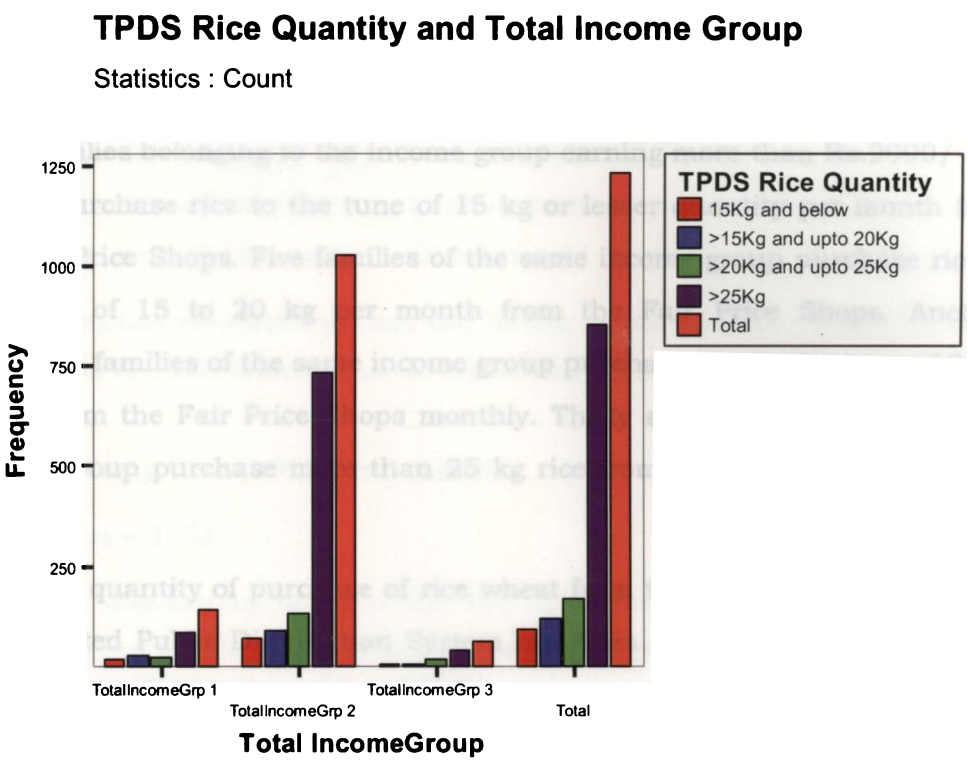
Table 5.13 Cross tabulation of quantity of rice purchased from Fair Price Shops vis-à-vis household monthly income

TPDS Rice Quantity and Total Income Group

		Total Income Group			Total
		1	2	3	
TPDS Rice	3	15	72	4	91
Quantity Group	4	25	88	5	118
	5	20	131	17	168
	6	83	734	37	854
Total		143	1025	63	1231

The cross tabulation is shown as a Bar Chart in Figure 5.1.

Figure 5.1



From the cross-tabulation shown in Table 5.13, it is found that fifteen families belonging to the income group earning below Rs.1000/-, purchase only 15 kg or lesser quantity of rice per month from the Fair Price Shop under the Targeted Public Distribution System. Twenty five families belonging to the same income group purchase rice to the tune of 15 to 20 kg per month from the Fair Price Shops. Another twenty families belonging to the same income group purchase rice to the tune of 20 to 25 kg per month from the Fair Price Shops. Eighty three families in the same income group purchase more than 25 kg rice per month from the Fair Price Shops.

Seventy two families belonging to the income group earning between Rs.1000/- to Rs.2000/- per month purchase 15 kg or lesser quantity of rice per month from the Fair Price Shops, whereas eighty eight families of the same income group purchase rice to the tune of 15 to 20 kg of rice from the Fair

Price Shops. 131 families of the same income group purchase rice to the tune of 20 to 25 kg per month from the Fair Price Shops. Another 734 families of the same income group purchase more than 25kg of rice from the Fair Price Shops.

Four families belonging to the income group earning more than Rs.2000/- per month purchase rice to the tune of 15 kg or lesser quantity per month from the Fair Price Shops. Five families of the same income group purchase rice to the tune of 15 to 20 kg per month from the Fair Price Shops. Another seventeen families of the same income group purchase rice to the tune of 20 to 25 kg from the Fair Price Shops monthly. Thirty seven families of the same income group purchase more than 25 kg rice from the Fair Price Shops per month.

Here, the quantity of purchase of rice wheat from the Fair Price Shops under the Targeted Public Distribution System has been grouped in to four, for the convenience of analysis as follows:

In the case of the data available in respect of the monthly household income of the tribal families and their purchase of rice from the Fair Price Shops, it is evident that there is some relation between these two factors, logically. Therefore, the hypothesis in this regard has been tested using Chi-square test as well as Correlation.

Hypothesis H_3

h_o

There is no relation between the income level of the tribal households and the quantity of food grains purchased by them from the Fair Price Shops under TPDS, for consumption by the members of the households.

h_1

There is relation between the income level of the tribal households and the quantity of food grains purchased by them from the Fair Price Shops under TPDS, for consumption by the members of the households.

The calculated value of Chi- square is 25.889, with Degrees of Freedom 6.

The table value at 5 per cent significance level is 12.592.

The calculated value of Chi-square *i.e.* 25.889 is greater than the table value, *i.e.* 12.592, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of rice purchased by the tribal households from TPDS and the total household income.

Correlation has also been worked out based on the data as above. Pearson's Correlation is 0.069 which is not so significant at the 0.01 level.

Below Poverty Line (BPL) tribal families

Sample size = 1054

Since the association between the two variables, *i.e.* the total household income of the tribals and the quantity of rice purchased by them from Fair Price Shops has been established as mentioned above, it appeared to be appropriate to find out the position if the classification of Below Poverty Line (BPL) and Above Poverty Line (APL) is applied.

Here, the total monthly household income of the tribal families have been grouped as Group code 1 and 2.

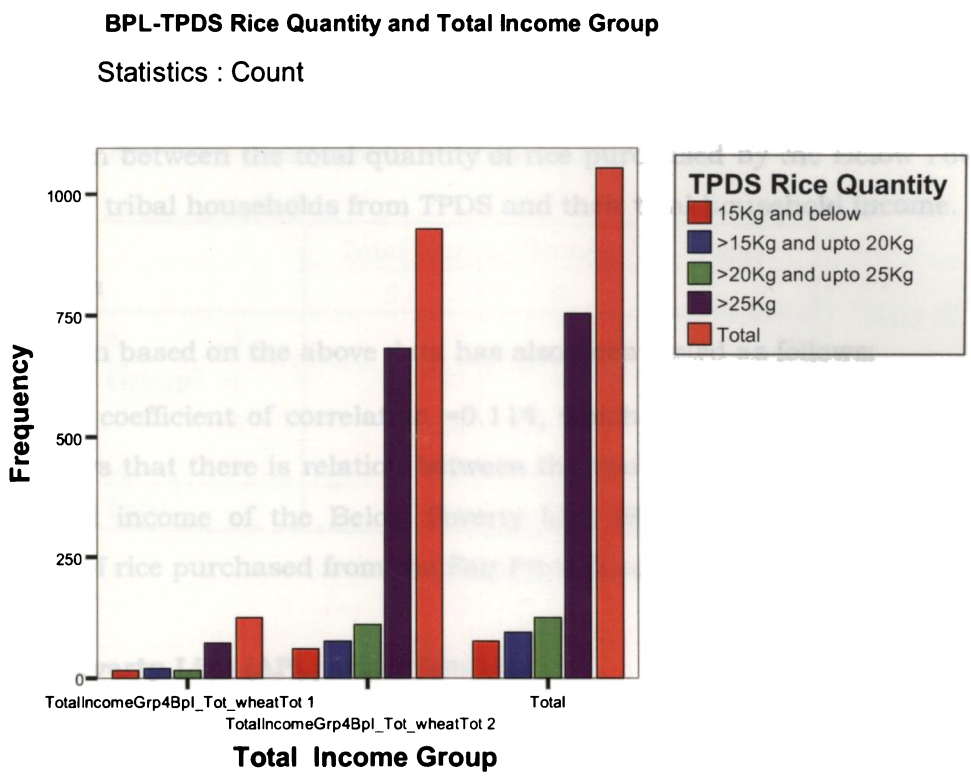
Considering the data on the purchase of rice from the Fair Price Shops grouped as in the above analysis, the cross tabulation is shown in Table 5.14.

Table 5.14 BPL-TPDS Rice Quantity and Total Income Group

		Total Income Group		Total
		1	2	
TPDS Rice	3	15	61	76
Quantity Group	4	20	76	96
	5	16	110	126
	6	74	682	756
Total		125	929	1054

The cross tabulation is shown as a Bar Chart in Figure 5.2.

Figure 5.2



The cross tabulation shows the relation between the two variables, *i.e.* total monthly household income of the BPL families and the quantity of rice purchased from the Fair Price Shops, and therefore, the hypothesis in this respect has been tested and results obtained as follows:

Hypothesis H_4

h_o

There is no relation between the income level of the BPL tribal households and the quantity of food grains purchased by them from the Fair Price Shops under TPDS, for consumption by the members of the households.

h_1

There is relation between the income level of the BPL tribal households and the quantity of food grains purchased by them from the Fair Price Shops under TPDS, for consumption by the members of the households.

The calculated value of Chi- square is 15.095, with Degrees of Freedom 3.

The table value at 5 per cent significance level is 7.815.

The calculated value of Chi-square *i.e.* 15.095 is greater than the table value, *i.e.* 7.815, indicating that the Null Hypothesis h_0 cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/ association between the total quantity of rice purchased by the Below Poverty Line (BPL) tribal households from TPDS and their total household income.

Correlation

Correlation based on the above data has also been tested as follows:

Pearson's coefficient of correlation =0.114, which is significant at 0.01 level. This shows that there is relation between the two variables, *i.e.* total monthly household income of the Below Poverty Line (BPL) tribal families and the quantity of rice purchased from the Fair Price Shops under TPDS.

Above Poverty Line (APL) tribal families

Sample size = 177.

Same analysis as above has been done in respect of the Above Poverty Line (APL) tribal families to find out the association of the variables ,*i.e.* total monthly household income of the tribals and the quantity of rice purchased by them from the Fair Price Shops under the Targeted Public Distribution System as follows.

Here, the classification of quantity of rice purchased from the Fair Price Shops has been done as in the previous case, *i.e.* grouped into four.

The total monthly household income of the tribals belonging to the Above Poverty Line (APL) families has been grouped in to two, *i.e.* Below Rs. 2000/- and above Rs.2000, as shown in Table 5.15.

Table 5.15 Classification of the household income of the APL families

Sl. No.	Range of household income in Rs.	Group code
1	Rs.2000/- and below	2
2	Above Rs.2000/-	3

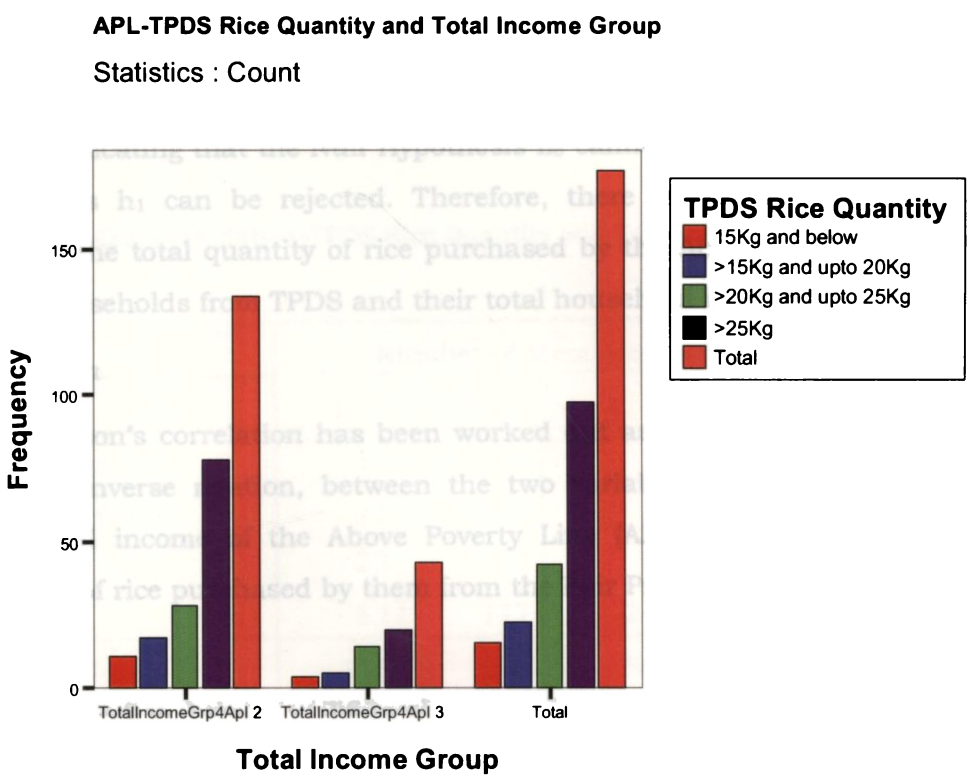
Considering the data on the quantity of rice purchased from the Fair Price Shops, grouped as in the previous case, the cross tabulation are shown in Table 5.16 and the Bar Chart in Figure 5.3.

Table 5.16 APL-TPDS Rice Quantity and Total Income Group

Count

		Total Income Group		Total
		2	3	
TPDS Rice Quantity Group	3	11	4	15
	4	17	5	22
	5	28	14	42
	6	78	20	98
Total		134	43	177

Figure 5.3



The cross tabulation shows the relation between the two variables, *i.e.* total monthly household income of the APL families and the quantity of rice purchased from the Fair Price Shops by them, and therefore, the hypothesis in this respect has been tested and results obtained as follows:

Hypothesis H_5

h_o

There is no relation between the income level of the APL tribal households and the quantity of food grains purchased by them from the Fair Price Shops under TPDS, for consumption by the members of the households.

h_1

There is relation between the income level of the APL tribal households and the quantity of food grains purchased by them from the Fair Price Shops under TPDS, for consumption by the members of the households.

The calculated value of Chi- square is 2.746, with Degrees of Freedom 3.

The table value at 5 per cent significance level is 7.815.

The calculated value of Chi-square *i.e.* 2.746 is lower than the table value, *i.e.* 7.815, indicating that the Null Hypothesis h_o cannot be rejected and alternate hypothesis h_1 can be rejected. Therefore, there is no relation/association between the total quantity of rice purchased by the Above Poverty Line (APL) tribal households from TPDS and their total household income.

Correlation

The Pearson's correlation has been worked out as -0.056, showing that it is only an inverse relation, between the two variables, *i.e.* the total monthly household income of the Above Poverty Line (APL) tribal families and the quantity of rice purchased by them from the Fair Price Shops.

5.4 Influence of number of members in the family

Total sample size = 1231

Normally, the quantity of rice purchased may depend on the number of members in the family. However, it is proper to analyze the influence of the

number of members in the family on the quantity of rice purchased from the Fair Price Shops under the Targeted Public Distribution System.

Here also, grouping is done as shown in Table 5.17.

Table 5.17 Classification of number of members in the family

Sl. No.	No. of members in the family	Group code
1	Less than three	1
2	Three	3
3	Four	4
4	Five and above	5

The quantity of rice purchased from the Fair Price Shops with respect to the number of members in each tribal family has been analysed on the basis of the cross tabulation shown in Table 5.18. Following The methodology already adopted, the quantity of rice purchased from the Fair Price Shops is categorized in to four groups which are taken for the analysis.

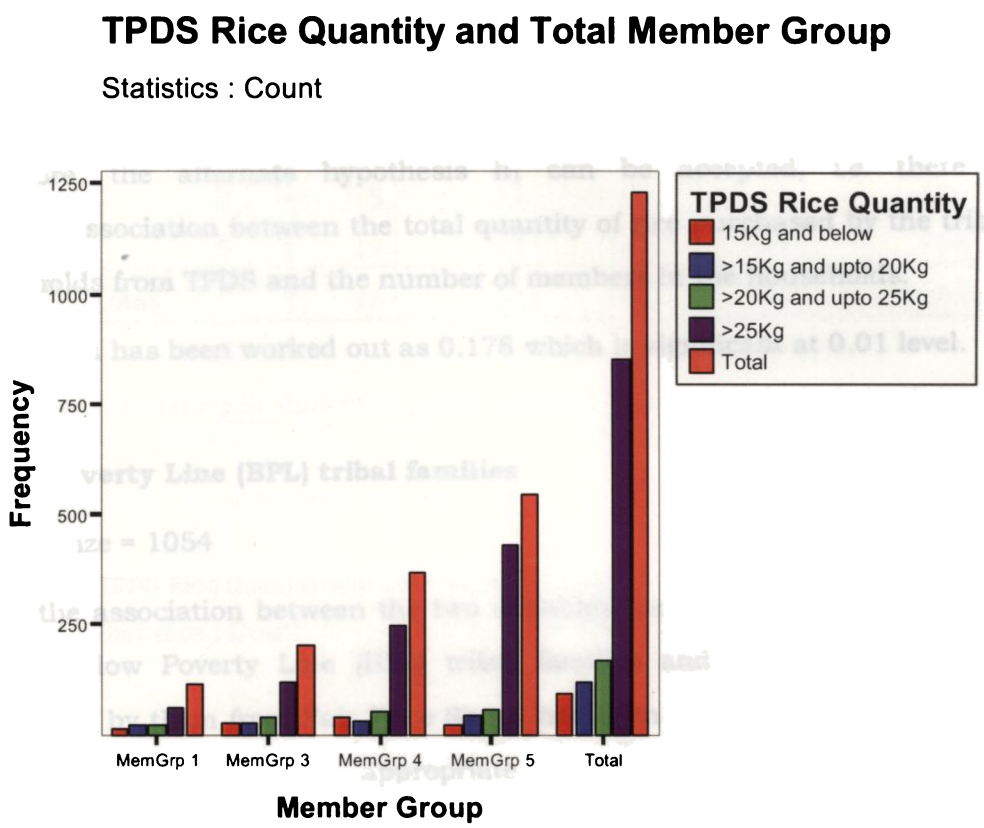
Table 5.18 Cross tabulation-TPDS Rice Quantity and Total Member Group

Count

		Number of Members Group				Total
		1	3	4	5	
TPDS Rice Quantity Group	3	11	23	37	20	91
	4	21	26	30	41	118
	5	22	37	54	55	168
	6	62	117	247	428	854
Total		116	203	368	544	1231

The cross tabulation is shown as a Bar Chart as Figure 5.4.

Figure 5.4



On analysis, it can be logically inferred that there is association between the number of members in the tribal families and the quantity of rice being purchased from the Fair Price Shops under the Targeted Public Distribution System. Therefore, to test the association, Chi-square and correlation tests had been done for these values and the results are as shown below:

Hypothesis H_6

h_o

There is no relation between the number of members in the tribal households and the quantity of food grains purchased by the tribal households under TPDS.

h_1

There is relation between the number of members in the tribal households and the quantity of food grains purchased by the tribal households under TPDS.

The calculated value of Chi- square is 58.905, with Degrees of Freedom 9.

The table value at 5 per cent significance level is 16.919.

The calculated value of Chi-square *i.e.* 58.905 is greater than the table value, *i.e.* 16.919, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of rice purchased by the tribal households from TPDS and the number of members in the households.

Correlation has been worked out as 0.178 which is significant at 0.01 level.

Below Poverty Line (BPL) tribal families

Sample size = 1054

Since the association between the two variables, *i.e.* the number of members in the Below Poverty Line (BPL) tribal families and the quantity of rice purchased by them from Fair Price Shops has been established as mentioned above, it appeared to be appropriate to find out the position if the classification of Below Poverty Line (BPL) and Above Poverty Line (APL) is applied.

Here, the number of members in the Below Poverty Line (BPL) tribal families have been grouped as shown in Table 5.19.

Table 5.19 Classification of number of members in the BPL families

Sl. No.	No. of members in the family	Group code
1	Less than three	1
2	Three and above	3
3	Four	4
4	Five and above	5

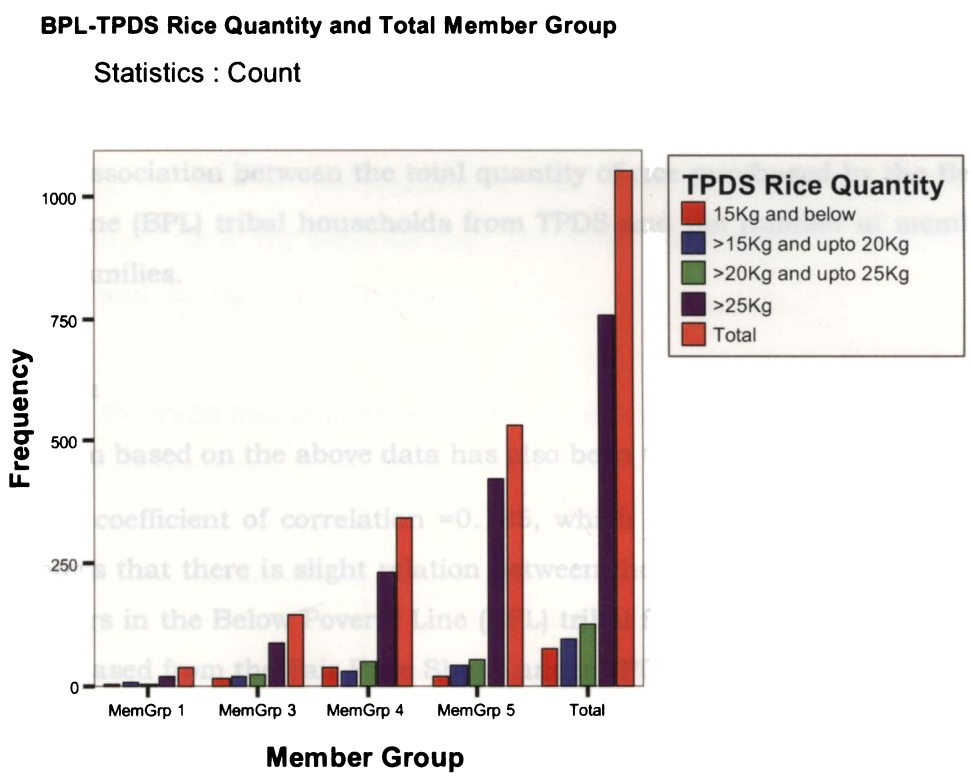
Considering the data on the purchase of rice from the Fair Price Shops grouped as in the above analysis, the cross tabulation is shown in Table 5.20.

Table 5.20 BPL-TPDS Rice Quantity and Total Member Group

		Number of Members Group				Total
		1	3	4	5	
TPDS Rice Quantity Group	3	5	16	36	19	76
	4	7	20	29	40	96
	5	5	22	48	51	126
	6	19	85	230	422	756
Total		36	143	343	532	1054

The cross tabulation is shown as a Bar Chart in Figure 5.5.

Figure 5.5



The cross tabulation shows the relation between the two variables, *i.e.* number of members in the BPL families and the quantity of rice purchased from the

Fair Price Shops, and therefore, the hypothesis in this respect has been tested and results obtained as follows:

Hypothesis H_7

h_o

There is no relation between the number of members in the BPL tribal households and the quantity of food grains purchased by the tribal households under TPDS.

h_1

There is relation between the number of members in the BPL tribal households and the quantity of food grains purchased by the tribal households under TPDS.

The calculated value of Chi- square is 45.209, with Degrees of Freedom 9.

The table value at 5 per cent significance level is 16.919.

The calculated value of Chi-square *i.e.* 45.209 is greater than the table value, *i.e.*16.919, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of rice purchased by the Below Poverty Line (BPL) tribal households from TPDS and the number of members in those families.

Correlation

Correlation based on the above data has also been tested as follows:

Pearson's coefficient of correlation =0.185, which is significant at 0.01 level. This shows that there is slight relation between the two variables, *i.e.* number of members in the Below Poverty Line (BPL) tribal families and the quantity of rice purchased from the Fair Price Shops under TPDS.

Above Poverty Line (APL) tribal families

Sample size = 177

Same analysis as above has been done in respect of the Above Poverty Line (APL) tribal families to find out the association of the variables ,*i.e.* number of

members in the Above Poverty Line tribal families and the quantity of rice purchased by them from the Fair Price Shops under the Targeted Public Distribution System as follows.

Here, the classification of quantity of rice purchased from the Fair Price Shops has been done as in the previous case, *i.e.* grouped into four.

The number of members belonging to the Above Poverty Line (APL) families has been grouped in to two as given in Table 5.21.

Table 5.21 Classification of the number of members in the APL families

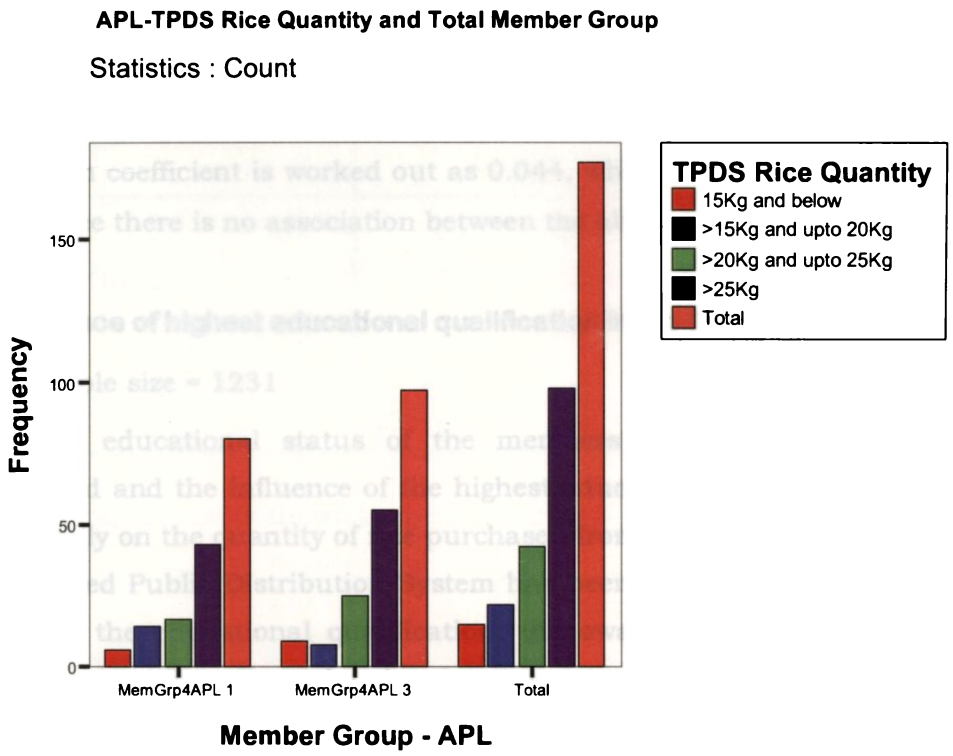
Sl. No.	No. of members in the family	Group code
1	Less than three	1
2	Three and above	3

Considering the data on the quantity of rice purchased from the Fair Price Shops, grouped as in the previous case, the cross tabulation are shown in the Table 522 and the Bar Chart in Figure 5.6

Table 5.22 APL-TPDS Rice Quantity and Total Member Group

		Number of Members Group		Total
		1	3	
TPDS Rice	3	6	9	15
Quantity Group	4	14	8	22
	5	17	25	42
	6	43	55	98
Total		80	97	177

Figure 5.6



The cross tabulation shows the relation between the two variables, *i.e.* number of members in the APL tribal families and the quantity of rice purchased by them from the Fair Price Shops, and therefore, the hypothesis in this respect has been tested and results obtained as follows:

Hypothesis H_8

h_o

There is no relation between the number of members in the APL tribal households and the quantity of food grains purchased by the tribal households under TPDS.

h_1

There is relation between the number of members in the APL tribal households and the quantity of food grains purchased by the tribal households under TPDS.

The calculated value of Chi- square is 3.630, with Degrees of Freedom 3.

The table value at 5 per cent significance level is 7.815.

The calculated value of Chi-square *i.e.* 3.630 is lower than the table value, *i.e.* 7.815, indicating that the Null Hypothesis h_o cannot be rejected and alternate hypothesis h_1 can be rejected. Therefore, there is no relation/association between the total quantity of rice purchased by the Above Poverty Line (APL) tribal households from TPDS and the number of members in those families.

Correlation coefficient is worked out as 0.044, which is not significant at 0.01 level. Hence there is no association between the above two variables.

5.5 Influence of highest educational qualification in the family

Total sample size = 1231

Here, the educational status of the members of each family has been ascertained and the influence of the highest educational qualification in each tribal family on the quantity of rice purchased from the Fair Price Shops under the Targeted Public Distribution System has been analysed. By analyzing the impact of the educational qualification, the awareness of the tribal people about the benefits offered by the Government through the Targeted Public Distribution System is actually being subjected to analysis.

The classification of the educational qualifications for analysis is shown in Table 5.23.

Table 5.23 Classification of educational qualifications

Sl. No.	Range of the educational qualifications	Group code
1	Illiterate	0
2	Below 5th standard	1
3	5th standard to 8th standard	2
4	Above 8th standard to 10th standard	3
5	Above 10th standard	4

The quantity of rice purchased from the Fair Price Shops in relation to the highest educational qualification of the members of the tribal family has been analysed on the basis of the cross tabulation in Table 5.24. The quantity of rice purchased from the Fair Price Shops is categorized in to four groups, following the methodology already adopted and these data have been

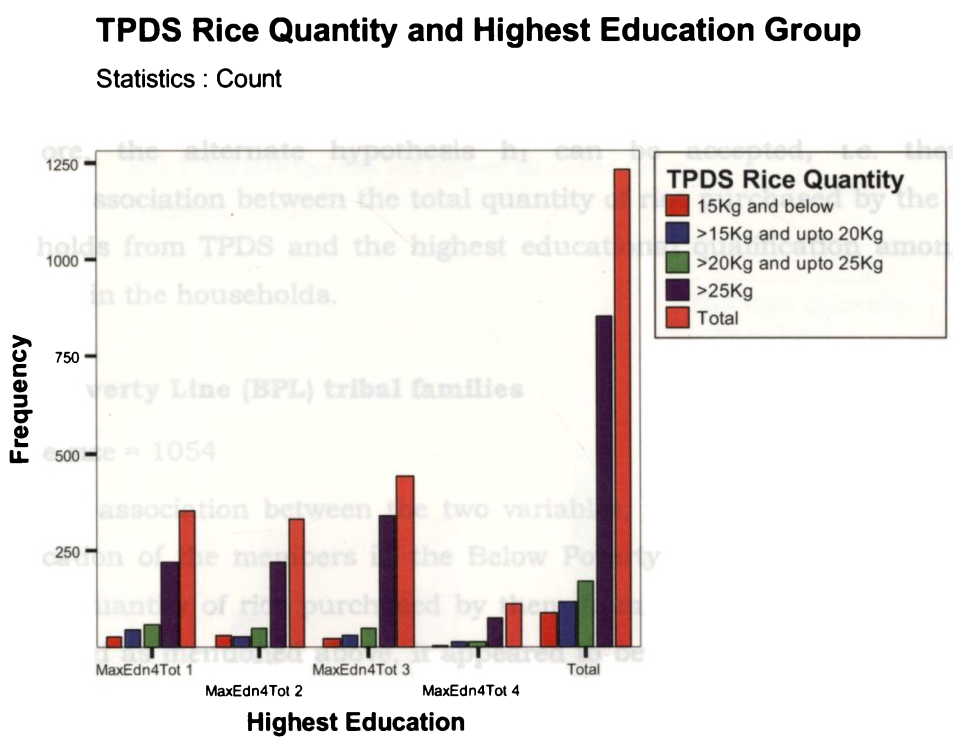
considered for the analysis. The groups on education were regrouped as shown in Table 5.24.

Table 5.24 Cross tabulation-TPDS Rice Quantity and Highest Education Group

		Highest Education Group				Total
		1	2	3	4	
TPDS Rice Quantity Group	3	29	32	24	6	91
	4	46	28	30	14	118
	5	57	47	50	14	168
	6	220	220	338	76	854
Total		352	327	442	110	1231

The cross tabulation is shown as a Bar Chart in Figure 5.7.

Figure 5.7



It has to be inferred logically that there is some relation between the highest educational qualification of the members of the tribal families and the quantity

of rice being purchased from the Fair Price Shops under the Targeted Public Distribution System. Therefore, Chi-square test has been done to know the association as mentioned above, using the statistical tool.

Hypothesis H_9

h_o

There is no relation between the highest educational qualification among the members of the tribal households and the quantity of food grains purchased by them under TPDS.

h_1

There is relation between the highest educational qualification among the members of the tribal households and the quantity of food grains purchased by them under TPDS.

The calculated value of Chi- square is 24.737, with Degrees of Freedom 9.

The Table value at 5 per cent significance level is 16.919.

The calculated value of Chi-square *i.e.* 24.737 is greater than the table value, *i.e.* 16.919, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of rice purchased by the tribal households from TPDS and the highest educational qualification among the members in the households.

Below Poverty Line (BPL) tribal families

Sample size = 1054

Since the association between the two variables, *i.e.* the highest educational qualification of the members in the Below Poverty Line (BPL) tribal families and the quantity of rice purchased by them from Fair Price Shops has been established as mentioned above, it appeared to be appropriate to find out the position if the classification of Below Poverty Line (BPL) and Above Poverty Line (APL) is applied.

Here, the educational qualification of members in the Below Poverty Line (BPL) tribal families have been grouped as shown in Table 5.25.

Table 5.25 Classification of educational qualifications in the BPL families

Sl. No.	Range of the educational qualifications	Group code
1	Below 5th standard	1
2	5th standard and above	3

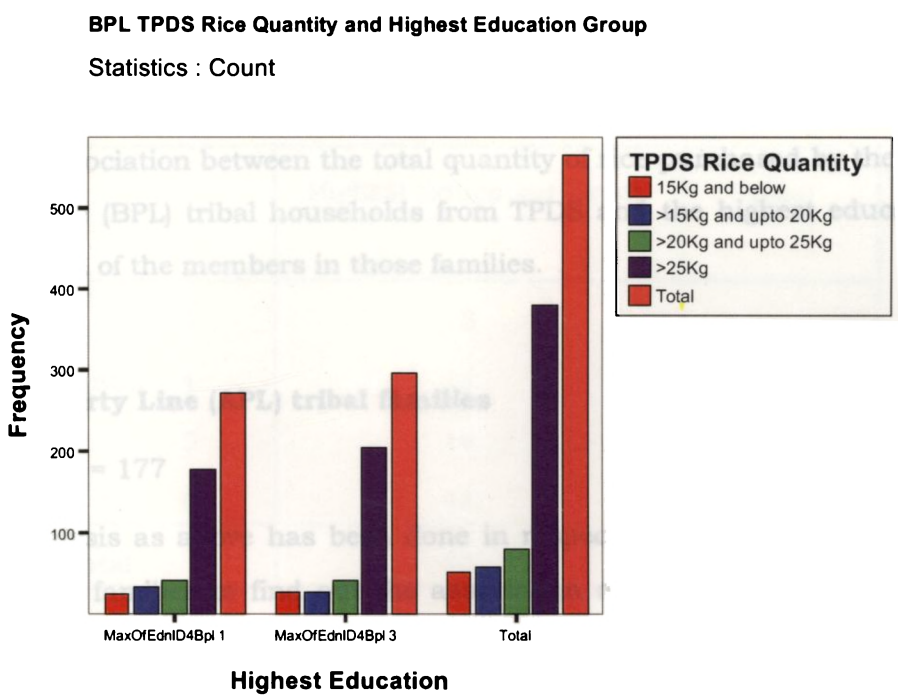
Considering the data on the purchase of rice from the Fair Price Shops grouped as in the above analysis, the cross tabulation is shown in Table 5.26.

Table 5.26 BPL-TPDS Rice Quantity and Highest Education Group

		Highest Education Group		Total
		1	3	
TPDS Rice Quantity Group	3	24	26	50
	4	32	25	57
	5	39	40	79
	6	176	204	380
Total		271	295	566

The cross tabulation is shown as a Bar Chart in Figure 5.8.

Figure 5.8



The cross tabulation shows the relation between the two variables, *i.e.* educational qualification of the members in the BPL tribal families and the quantity of rice purchased by them from the Fair Price Shops, and therefore, the hypothesis in this respect has been tested and results obtained as follows:

Hypothesis H_{10}

h_o

There is no relation between the highest educational qualification among the members of the BPL tribal households and the quantity of food grains purchased by them under TPDS.

h_1

There is relation between the highest educational qualification among the members of the BPL tribal households and the quantity of food grains purchased by them under TPDS.

The calculated value of Chi- square is 2.001, with Degrees of Freedom 3.

The table value at 5 per cent significance level is 7.815

The calculated value of Chi-square *i.e.* 2.001 is lower than the table value, *i.e.*7.815, indicating that the Null Hypothesis h_o cannot be rejected. Therefore, the alternate hypothesis h_1 can be rejected, and there is no relation/association between the total quantity of rice purchased by the Below Poverty Line (BPL) tribal households from TPDS and the highest educational qualification of the members in those families.

Above Poverty Line (APL) tribal families

Sample size = 177

Same analysis as above has been done in respect of the Above Poverty Line (APL) tribal families to find out the association of the variables ,*i.e.* highest educational qualification of the members in the Above Poverty Line (APL) tribal families and the quantity of rice purchased by them from the Fair Price Shops under the Targeted Public Distribution System as follows.

Here, the classification of quantity of rice purchased from the Fair Price Shops has been done as in the previous case, *i.e.* grouped into four.

The educational qualifications of the members belonging to the Above Poverty Line (APL) families has been grouped in to two as shown in Table 5.27.

Table 5.27 Classification of the educational qualifications of the members in the APL families

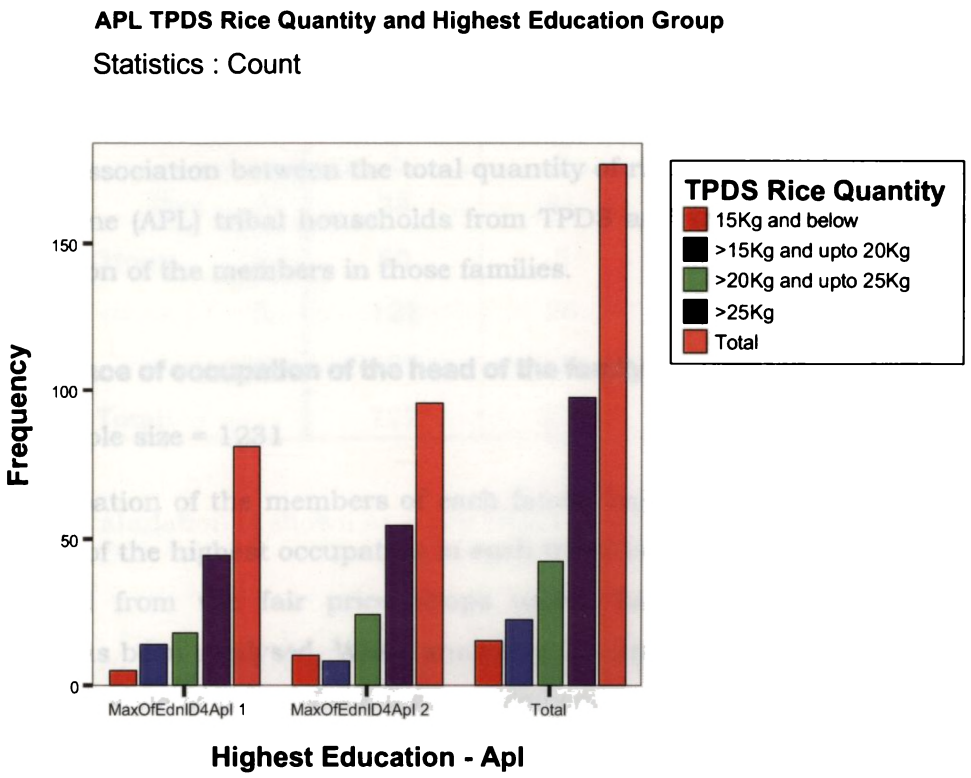
Sl. No.	Range of the educational qualifications	Group code
1	Below 5th standard	1
2	5th standard and above	2

Considering the data on the quantity of rice purchased from the Fair Price Shops, grouped as in the previous case, the cross tabulation are shown in the Table 5.28 and the Bar Chart in Figure 5.9.

Table 5.28 APL TPDS Rice Quantity and Highest Education Group

		Highest Education Group		Total
		1	2	
TPDS Rice	3	5	10	15
Quantity Group	4	14	8	22
	5	18	24	42
	6	44	54	98
Total		81	96	177

Figure 5.9



The cross tabulation shows the relation between the two variables, *i.e.* highest educational qualification of the members in the APL tribal families and the quantity of rice purchased from the Fair Price Shops by them, and therefore, the hypothesis in this respect has been tested and results obtained as follows:

Hypothesis H_{11}

h_o

There is no relation between the highest educational qualification among the members of the APL tribal households and the quantity of food grains purchased by them under TPDS.

h_1

There is relation between the highest educational qualification among the members of the APL tribal households and the quantity of food grains purchased by them under TPDS.

The calculated value of Chi- square is 3.938, with Degrees of Freedom 3.

The table value at 5 per cent significance level is7.815.

The calculated value of Chi-square *i.e.* 3.938 is lower than the table value, *i.e.*7.815, indicating that the Null Hypothesis h_o cannot be rejected and alternate hypothesis h_1 can be rejected. Therefore, there is no relation/association between the total quantity of rice purchased by the Above Poverty Line (APL) tribal households from TPDS and the highest educational qualification of the members in those families.

5.6 Influence of occupation of the head of the family

Total sample size = 1231

The occupation of the members of each family has been ascertained and the influence of the highest occupation in each tribal family on the quantity of rice purchased from the fair price shops under Targeted Public Distribution System has been analysed. While analyzing the impact of the occupation, the status and style of living of the family members over and above income due to the occupation is being considered.

The classification of the occupation for analysis is shown in Table 5.29.

Table 5.29 Classification of occupation of the head of the family

Sl. No	Range of occupations	Group code
1	Unemployed	0
2	Coolie	1
3	Farming, fishing, forest produce collection	2
4	Household work	5
5	Government/Regular employment	6

The quantity of rice purchased through fair price shops in relation to the occupation borne by the head of the tribal family has been analysed on the basis of the cross-tabulation in Table 5.30. Categories selected for analysis were again regrouped in to three as shown in Table 5.30.

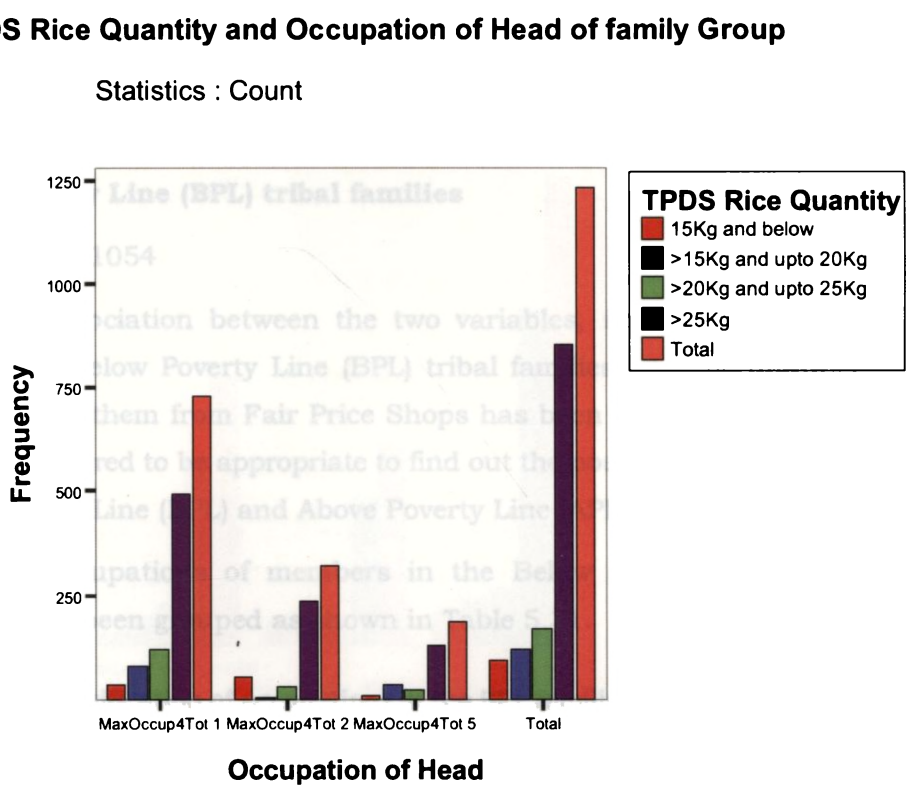
The quantity of rice purchased from the fair price shop is classified into four groups, following the methodology already adopted and these data have been considered for the analysis.

Table 5.30 TPDS Rice Quantity and Occupation of Head of Family Group

		Occupation of Head of Family Group			Total
		1	2	5	
TPDS Rice Quantity Group	3	34	51	6	91
	4	80	5	33	118
	5	121	28	19	168
	6	492	236	126	854
Total		727	320	184	1231

The cross tabulation is shown as a Bar Chart in Figure 5.10.

Figure 5.10



On an analysis of the quantity of rice purchased from the fair price shops in relation to the highest occupation among the family members, logically some

relation can be established. Therefore chi-square test has been done to prove the association as mentioned above.

Hypothesis H_{12}

h_o

There is no relation between the occupation of the head of the family of the tribal households and the quantity of food grains purchased by them under TPDS.

h_1

There is relation between the occupation of the head of the family of the tribal households and the quantity of food grains purchased by them under TPDS.

The calculated value of Chi- square is 92.606, with Degrees of Freedom 6.

The table value at 5 per cent significance level is 12.592.

The calculated value of Chi-square *i.e.* 92.606 is greater than the table value, *i.e.* 12.592, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of rice purchased by the tribal households from TPDS and the occupation of the head of the households.

Below Poverty Line (BPL) tribal families

Sample size = 1054

Since the association between the two variables, *i.e.* the occupation of the head of the Below Poverty Line (BPL) tribal families and the quantity of rice purchased by them from Fair Price Shops has been established as mentioned above, it appeared to be appropriate to find out the position if the classification of Below Poverty Line (BPL) and Above Poverty Line (APL) is applied.

Here, the occupations of members in the Below Poverty Line (BPL) tribal families have been grouped as shown in Table 5.31.

Table 5.31 Classification of occupations in the BPL families

Sl. No	Range of occupations	Group code
1	Coolie	1
2	Farming, fishing, forest produce collection	2
3	Household work	5

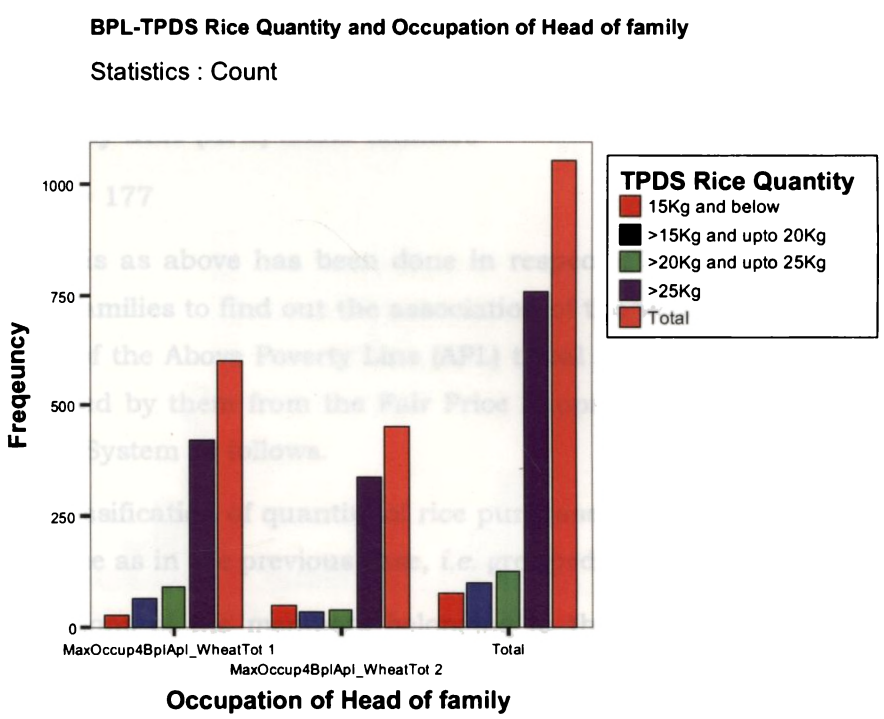
Considering the data on the purchase of rice from the Fair Price Shops grouped as in the above analysis and the regrouping of occupation made again, cross tabulation is shown in Table 5.32.

Table 5.32 BPL-TPDS Rice Quantity and Occupation of Head of family

		Occupation of Head of Family Group		Total
		1	2	
TPDS Rice Quantity Group	3	27	49	76
	4	64	32	96
	5	90	36	126
	6	420	336	756
Total		601	453	1054

The cross tabulation is shown as a Bar Chart in Figure 5.11.

Figure 5.11



The cross tabulation shows the relation between the two variables, *i.e.* occupation of the head of the BPL families and the quantity of rice purchased from the Fair Price Shops, and therefore, the hypothesis in this respect has been tested and results obtained as follows:

Hypothesis H_{13}

h_o

There is no relation between the occupation of the head of the family of the BPL tribal households and the quantity of food grains purchased by them under TPDS.

h_1

There is relation between the occupation of the head of the family of the BPL tribal households and the quantity of food grains purchased by them under TPDS.

The calculated value of Chi- square is 29.307, with Degrees of Freedom3.

The table value at 5 per cent significance level is 7.815.

The calculated value of Chi-square *i.e.* 29.307 is greater than the table value, *i.e.* 7.815, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of rice purchased by the Below Poverty Line (BPL) tribal households from TPDS and the occupation of the head of those families.

Above Poverty Line (APL) tribal families

Sample size = 177

Same analysis as above has been done in respect of the Above Poverty Line (APL) tribal families to find out the association of the variables ,*i.e.* occupation of the head of the Above Poverty Line (APL) tribal families and the quantity of rice purchased by them from the Fair Price Shops under the Targeted Public Distribution System as follows.

Here, the classification of quantity of rice purchased from the Fair Price Shops has been done as in the previous case, *i.e.* grouped into four.

The occupations of the members belonging to the Above Poverty Line (APL) families has been grouped in to two as shown in Table 5.33.

Table 5.33 Classification of the occupations of the head of the APL families

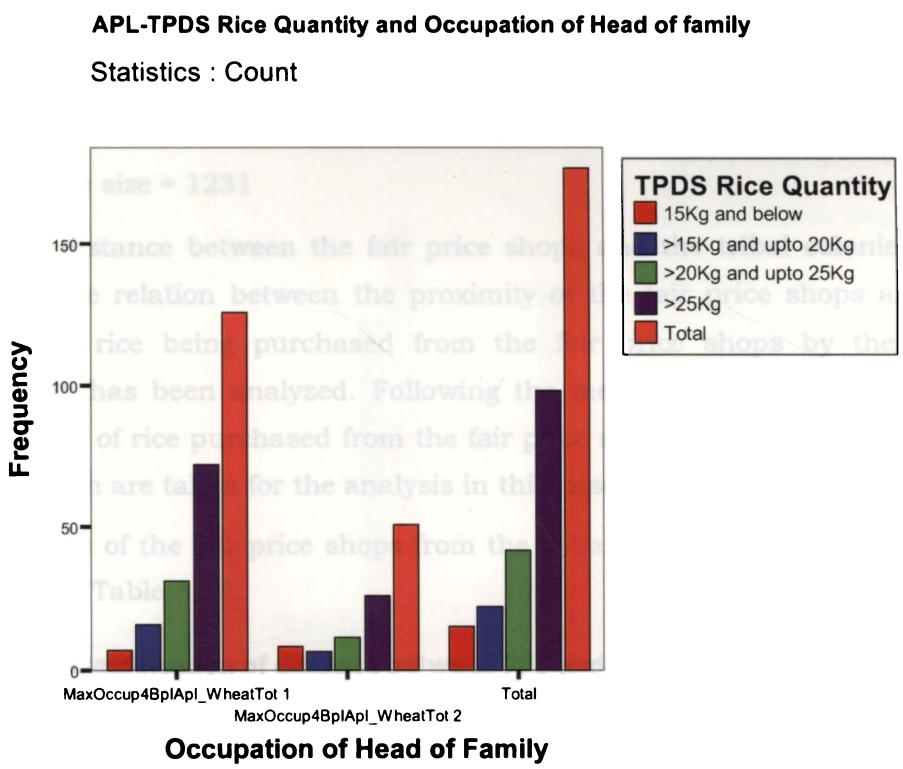
Sl. No	Range of occupations	Group code
1	Coolie	1
2	Farming, fishing, forest produce collection	2

Considering the data on the quantity of rice purchased from the Fair Price Shops, grouped as in the previous case, the cross tabulation are shown in the Table 5.34 and the Bar Chart in Figure 5.12.

Table 5.34 APL-TPDS Rice Quantity and Occupation of Head of family

		Occupation of Head of Family Group		Total
		1	2	
TPDS Rice Quantity Group	3	7	8	15
	4	16	6	22
	5	31	11	42
	6	72	26	98
Total		126	51	177

Figure 5.12



The cross tabulation shows the relation between the two variables, *i.e.* occupation of the head of the APL families and the quantity of rice purchased from the Fair Price Shops by them, and therefore, the hypothesis in this respect has been tested and results obtained as follows:

Hypothesis H_{14}

h_o

There is no relation between the occupation of the head of the family of the APL tribal households and the quantity of food grains purchased by them under TPDS.

h_1

There is relation between the occupation of the head of the family of the APL tribal households and the quantity of food grains purchased by them under TPDS.

The calculated value of Chi- square is 4.812, with Degrees of Freedom 3.

The table value at 5 per cent significance level is 7.815.

The calculated value of Chi-square *i.e.* 4.812 is lower than the table value, *i.e.* 7.815, indicating that the Null Hypothesis h_o cannot be rejected and alternate hypothesis h_1 can be rejected. Therefore, there is no relation/association between the total quantity of rice purchased by the Above Poverty Line (APL) tribal households from TPDS and the occupation of the head in those families.

5.7 Influence of proximity of fair price shop from the tribal colonies

Total sample size = 1231

Here, the distance between the fair price shops and the tribal colonies is of concern. The relation between the proximity of the fair price shops and the quantity of rice being purchased from the fair price shops by the tribal households has been analysed. Following the methodology already adopted, the quantity of rice purchased from the fair price shop is categorized into four groups which are taken for the analysis in this case also.

The distance of the fair price shops from the tribal colonies has been grouped as shown in Table 5.34.

Table 5.35 Classification of distance between FPS and Tribal Households

Sl. No.	Distance of fair price shops from tribal colonies	Group code
1	Less than 2 km	2
2	2 km and above	3

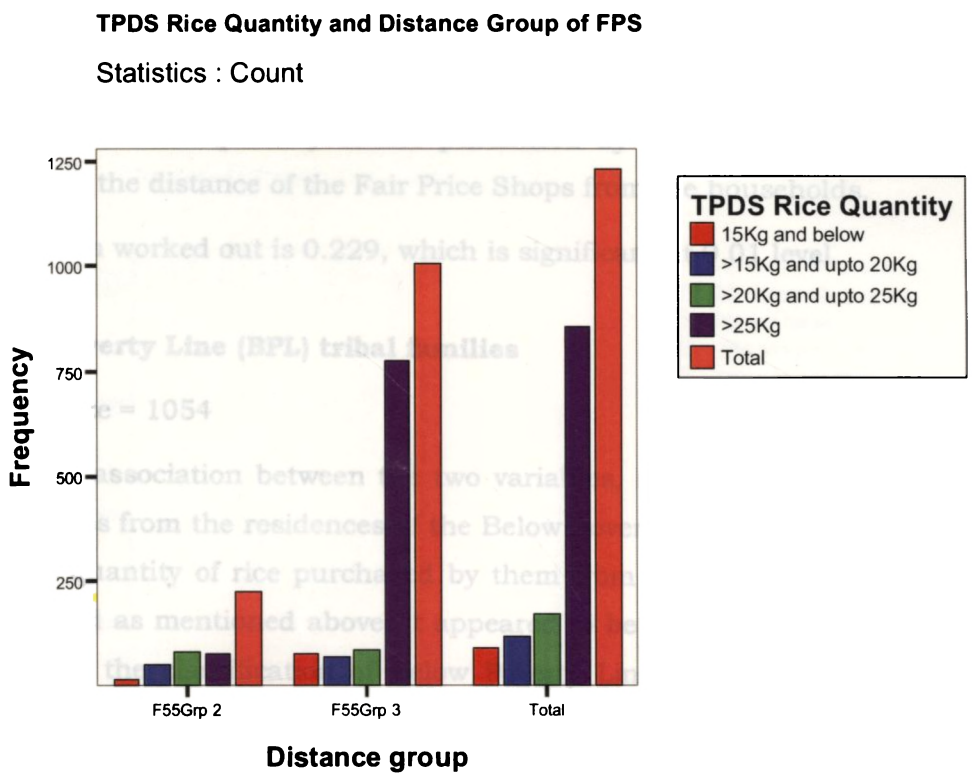
The quantity of rice purchased by the tribal households from the fair price shops in relation to the distance of fair price shops from the tribal colonies has been analysed on the basis of the cross-tabulation in Table 5.36.

Table 5.36 TPDS Rice Quantity and Distance Group of FPS

		Distance Group of FPS		Total
		2	3	
TPDS Rice Quantity	3	15	76	91
Group	4	49	69	118
	5	83	85	168
	6	78	776	854
Total		225	1006	1231

The cross tabulation is shown as a Bar Chart in Figure 5.13.

Figure 5. 13



On an analysis, a logical inference that there is relation between the distance of fair price shops from the tribal colonies and the quantity of rice purchased by the tribal population from the fair price shops can be made. Based on this, to prove it using statistical tool, the chi-square test has been done and the result obtained is as follows:

Hypothesis H_{15}

h_o

There is no relation between the proximity of the fair price shops with the tribal households and the quantity of food grains purchased by the tribal households under TPDS.

h_1

There is relation between the proximity of the fair price shops with the tribal households and the quantity of food grains purchased by the tribal households under TPDS.

The calculated value of Chi- square is 199.671, with Degrees of Freedom 3.

The table value at 5 per cent significance level is 7.815.

The calculated value of Chi-square *i.e.* 199.671 is greater than the table value, *i.e.* 7.815, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of rice purchased by the tribal households from TPDS and the distance of the Fair Price Shops from the households.

Correlation worked out is 0.229, which is significant at 0.01 level.

Below Poverty Line (BPL) tribal families

Sample size = 1054

Since the association between the two variables, *i.e.* the distance of the Fair Price Shops from the residences of the Below Poverty Line (BPL) tribal families and the quantity of rice purchased by them from Fair Price Shops has been established as mentioned above, it appeared to be appropriate to find out the position if the classification of Below Poverty Line (BPL) and Above Poverty Line (APL) is applied.

Here, the distance between the Fair Price Shops and residences of the Below Poverty Line (BPL) tribal families have been grouped as shown in Table 5.37.

Table 5.37 Classification of distance

Sl. No.	Distance of fair price shops from tribal colonies	Group code
1	Less than 1 km	1
2	1 km and above	2

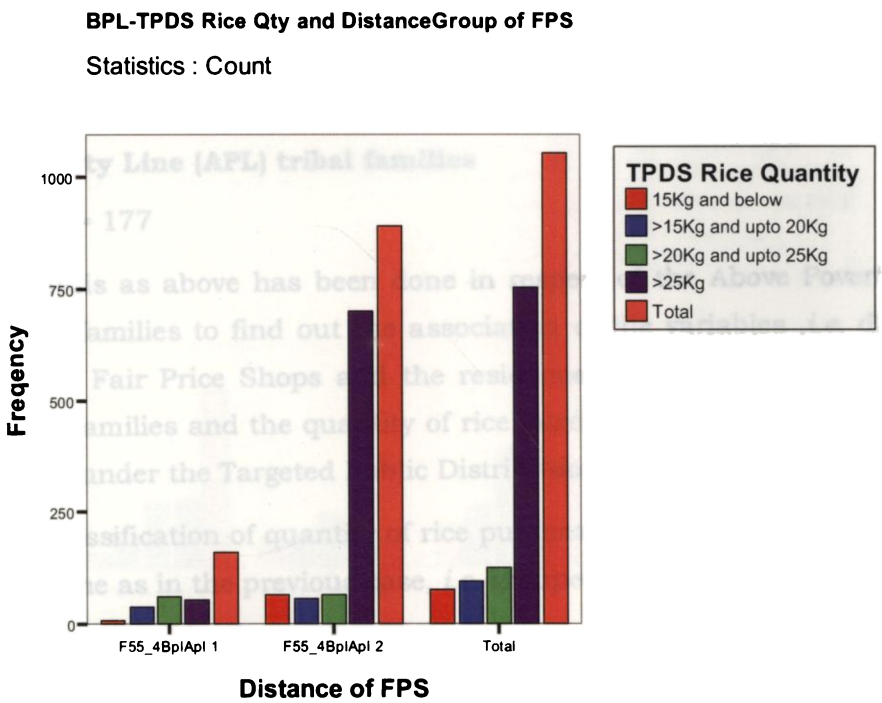
Considering the data on the purchase of rice from the Fair Price Shops grouped as in the above analysis, the cross tabulation is shown in Table 5.38.

Table 5.38 BPL-TPDS Rice Quantity and Distance Group of FPS

		Distance Group of FPS		Total
		1	2	
TPDS Rice Quantity Group	3	10	66	76
	4	38	58	96
	5	60	66	126
	6	54	702	756
Total		162	892	1054

The cross tabulation is shown as a Bar Chart in Figure 5.14.

Figure 5.14



The cross tabulation shows the relation between the two variables, *i.e.* distance between the Fair Price Shops and the residences of the BPL families and the quantity of rice purchased from the Fair Price Shops, and therefore, the hypothesis in this respect has been tested and results obtained as follows:

Hypothesis H_{16}

h_o

There is no relation between the proximity of the fair price shops with the BPL tribal households and the quantity of food grains purchased by the tribal households under TPDS.

h_1

There is relation between the proximity of the fair price shops with the BPL tribal households and the quantity of food grains purchased by the tribal households under TPDS.

The calculated value of Chi- square is 183.635, with Degrees of Freedom 3.

The table value at 5 per cent significance level is 7.815.

The calculated value of Chi-square *i.e.* 183.635 is greater than the table value, i.e, 7.815, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of rice purchased by the Below Poverty Line (BPL) tribal households from TPDS and the distance of the FPSs from the households.

Correlation worked out is 0.232, which is significant at 0.01 level.

Above Poverty Line (APL) tribal families

Sample size = 177

Same analysis as above has been done in respect of the Above Poverty Line (APL) tribal families to find out the association of the variables ,*i.e.* distance between the Fair Price Shops and the residences of the Above Poverty Line (APL) tribal families and the quantity of rice purchased by them from the Fair Price Shops under the Targeted Public Distribution System as follows.

Here, the classification of quantity of rice purchased from the Fair Price Shops has been done as in the previous case, *i.e.* grouped into four.

The distance of the Fair Price Shops from the residences of the Above Poverty Line (APL) families has been grouped in to two as shown in Table 5.39.

Table 5.39 Classification of distance of Fair Price Shops from the APL tribal households

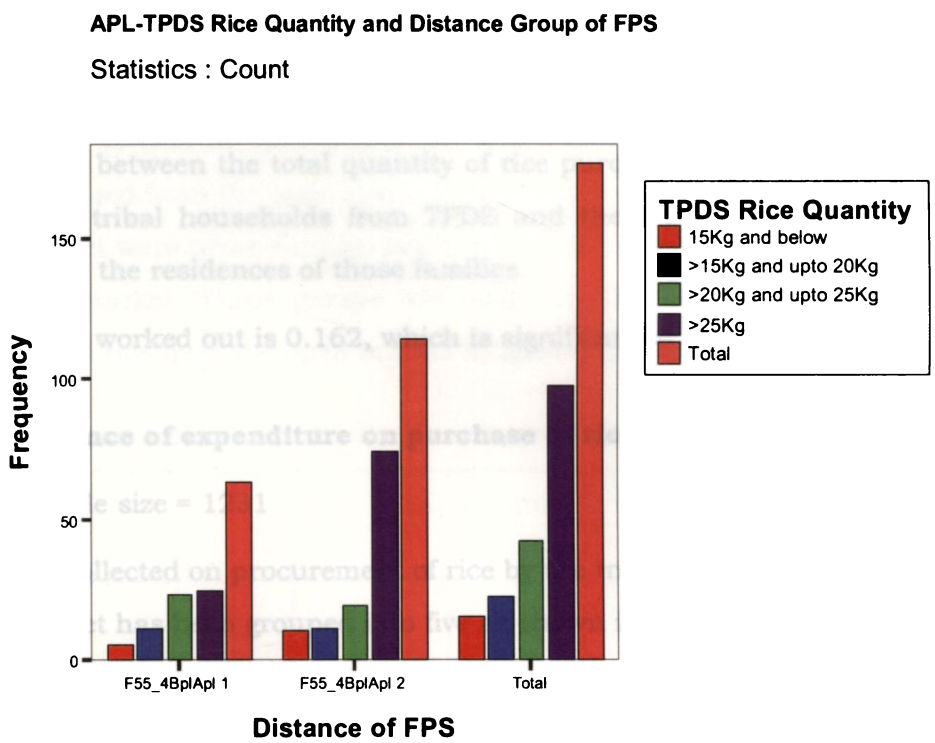
Sl. No.	Distance of fair price shops from tribal colonies	Group code
1	Less than 1 km	1
2	1 km and above	2

Considering the data on the quantity of rice purchased from the Fair Price Shops, grouped as in the previous case, the cross tabulation are shown in the Table 5.40 and the Bar Chart in Figure 5.15.

Table 5.40 APL-TPDS Rice Quantity and Distance Group of FPS

		Distance Group of FPS		Total
		1	2	
TPDS Rice Quantity Group	3	5	10	15
	4	11	11	22
	5	23	19	42
	6	24	74	98
Total		63	114	177

Figure 5.15



The cross tabulation shows the relation between the two variables, *i.e.* distance between the Fair Price Shops and the residences of the Above Poverty Line tribal families and the quantity of rice purchased by them from the Fair Price Shops, and therefore, the hypothesis in this respect has been tested and results obtained as follows:

Hypothesis H_{17}

h_o

There is no relation between the proximity of the fair price shops with the APL tribal households and the quantity of food grains purchased by the tribal households under TPDS.

h_1

There is relation between the proximity of the fair price shops with the APL tribal households and the quantity of food grains purchased by the tribal households under TPDS.

The calculated value of Chi- square is 14.028, with Degrees of Freedom 3.
The table value at 5 per cent significance level is 7.815

The calculated value of Chi-square *i.e.* 14.028 is higher than the table value, i.e, 7.815, indicating that the Null Hypothesis h_o cannot be accepted and alternate hypothesis h_1 can be accepted. Therefore, there is relation/ association between the total quantity of rice purchased by the Above Poverty Line (APL) tribal households from TPDS and the distance of the Fair Price Shops from the residences of those families.

Correlation worked out is 0.162, which is significant at 0.01 level.

5.8 Influence of expenditure on purchase of rice from Open Market

Total sample size = 1231

The data collected on procurement of rice by the tribal households from the open market has been grouped into five as shown in Table 5.41.

Table 5.41 Classification on the quantity of rice purchased from the open market

Sl. No.	Quantity or rice purchased	Group code
1	10 kg	1
2	13 kg	2
3	18 kg	3
4	23 kg	4
5	28 kg	5

The quantity of rice purchased from the fair price shops has been taken in the same manner as done in the previous cases. The quantity of rice purchased from the fair price shops in relation to the expenditure on rice purchased from the open market has been analysed.

Here, the price of rice in the open market has also to be considered. The grouping of the price of rice in the open market is done as shown in Table 5.42.

Table 5.42 Classification of price of rice in the open market

Sl. No.	Price of rice in the open market	Group code
1	Rs.9	2
2	Rs.10	3
3	Rs.12	4

The values derived by multiplying the mid-values of the range of quantity of rice purchased from the open market and the price of rice purchased from the open market were taken for analysis of the expenditure of rice purchased from the open market. Three groups are made for the data on expenditure for purchase of rice from the open market as shown in Table 5.43.

Table 5.43 Cross tabulation-TPDS Rice Quantity and Expenditure of Open Market Rice

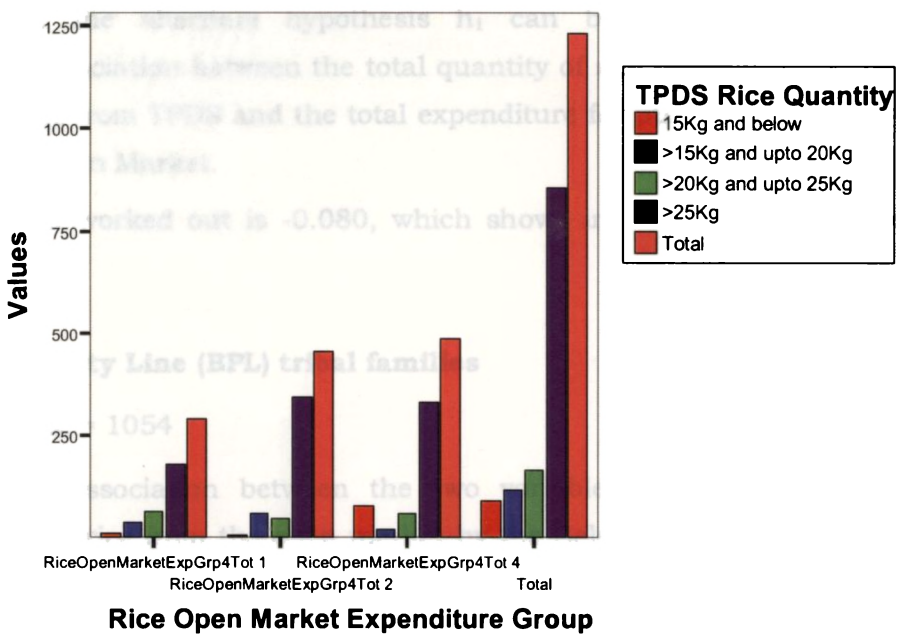
		Expenditure Group			Total
		1	2	4	
TPDS Rice	3	9	6	76	91
Quantity Group	4	37	61	20	118
	5	65	44	59	168
	6	179	344	331	854
Total		290	455	486	1231

The cross tabulation is shown as a Bar Chart in Figure 5.16.

Figure 5.16

Crosstabulation-TPDS Rice Quantity and expenditure of Open Market rice

Statistics : Count



On analysis, it is found that some logical relationship is there between the quantity of rice purchased by the tribal families from the fair price shops under the Targeted Public Distribution System and the expenditure on purchase of rice from the open market by the tribal households. Therefore, Chi-square test has been done to establish the said relation and results obtained as follows:

Hypothesis H_{18}

h_o

There is no relation between the expenditure on purchase of food grains by the tribal households from the Open market and the quantity of food grains purchased by them under TPDS.

h_1

There is relation between the expenditure on purchase of food grains by the tribal households from the Open market and the quantity of food grains purchased by them under TPDS.

The calculated value of Chi- square is 127.285, with Degrees of Freedom 6.

The table value at 5 per cent significance level is 12.592.

The calculated value of Chi-square *i.e.* 127.285 is greater than the table value, *i.e.*12. 592, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of rice purchased by the tribal households from TPDS and the total expenditure for purchase of rice by them from the Open Market.

Correlation worked out is -0.080, which shows inverse relation between the variables.

Below Poverty Line (BPL) tribal families

Sample size = 1054

Since the association between the two variables, *i.e.* the expenditure of purchase of rice from the open market by the Below Poverty Line (BPL) tribal families and the quantity of rice purchased by them from Fair Price Shops has been established as mentioned above, it appeared to be appropriate to find out the position if the classification of Below Poverty Line (BPL) and Above Poverty Line (APL) is applied.

Here, the expenditure of purchase of rice from the open market by the Below Poverty Line (BPL) tribal families have been grouped as in Tables 5.41 and 5.42 and then the data on expenditure has been regrouped in to three as shown in Table 5.44.

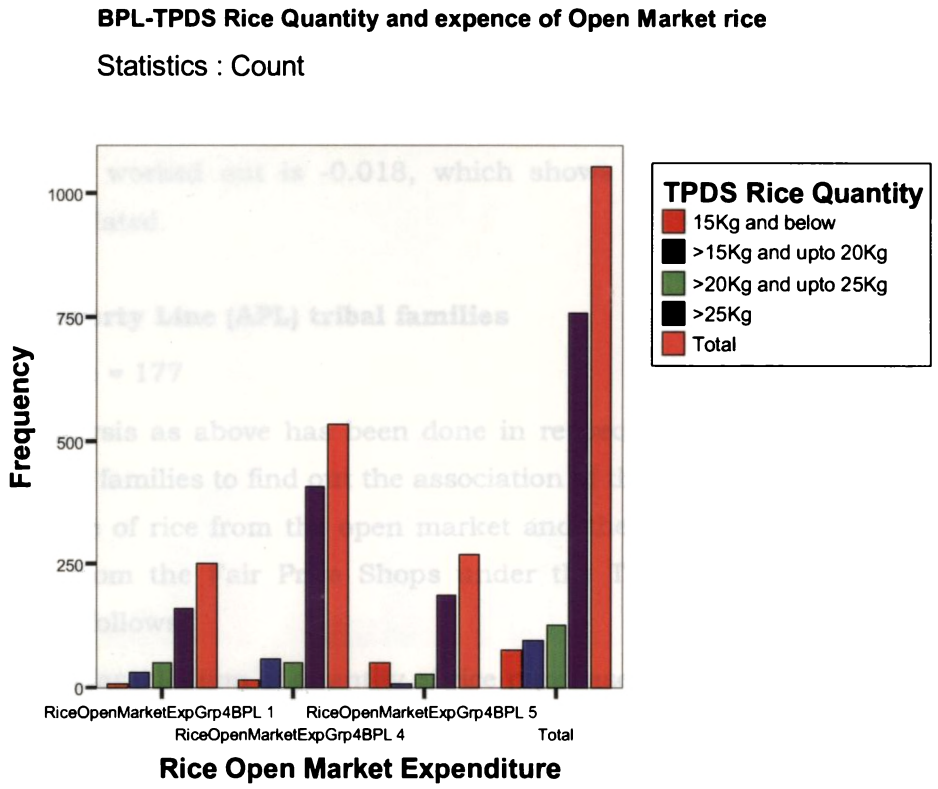
Considering the data on the purchase of rice from the Fair Price Shops grouped as in the above analysis, the cross tabulation is shown in Table 5.44.

Table 5.44 BPL-TPDS Rice Quantity and Expenditure of Open Market Rice

		Expenditure Group			Total
		1	4	5	
TPDS Rice	3	9	16	51	76
Quantity Group	4	31	58	7	96
	5	50	50	26	126
	6	161	408	187	756
Total		251	532	271	1054

The cross tabulation is shown as a Bar Chart in Figure 5.17.

Figure 5.17



The cross tabulation shows the relation between the two variables, *i.e.* expenditure of purchase of rice from the open market by the BPL tribal families and the quantity of rice purchased from the Fair Price Shops, and therefore, the hypothesis in this respect has been tested and results obtained as follows.

Hypothesis H_{19}

h_o

There is no relation between the expenditure on purchase of food grains by the BPL tribal households from the Open market and the quantity of food grains purchased by them under TPDS.

h_1

There is relation between the expenditure on purchase of food grains by the BPL tribal households from the Open market and the quantity of food grains purchased by them under TPDS.

The calculated value of Chi- square is 107.315, with Degrees of Freedom 6.

The table value at 5 per cent significance level is 12.592.

The calculated value of Chi-square *i.e.* 107.315 is greater than the table value, i.e, 12.592, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of rice purchased by the Below Poverty Line (BPL) tribal households from TPDS and the total expenditure for purchase of rice by them from the open market.

Correlation worked out is -0.018, which shows that the two variables are inversely related.

Above Poverty Line (APL) tribal families

Sample size = 177

Same analysis as above has been done in respect of the Above Poverty Line (APL) tribal families to find out the association of the variables ,*i.e.* expenditure of purchase of rice from the open market and the quantity of rice purchased by them from the Fair Price Shops under the Targeted Public Distribution System as follows.

Here, the classification of quantity of rice purchased from the Fair Price Shops has been done as in the previous case, *i.e.* grouped into four.

The expenditure of purchase of rice from the open market by the Above Poverty Line (APL) families has been grouped as in Tables 5.41 and 5.42 and regrouped in to two groups as shown in Table 5.45.

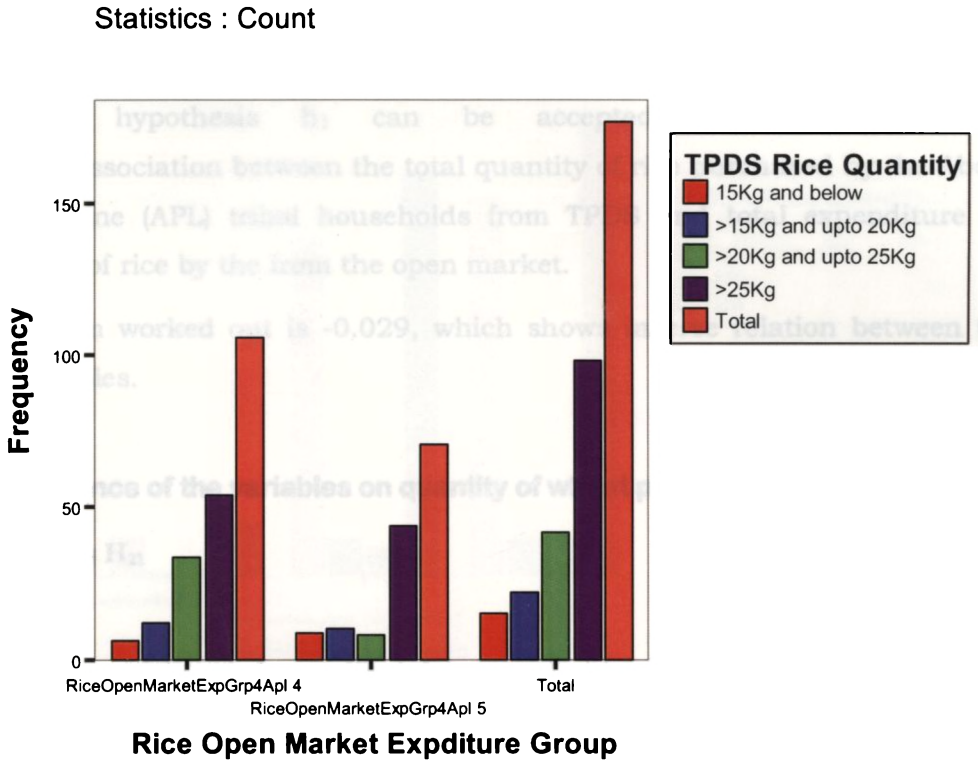
Considering the data on the quantity of rice purchased from the Fair Price Shops, grouped as in the previous case, the cross tabulation are shown in the table below and the Bar Chart in Figure 5.18.

Table 5.45 APL-TPDS Rice Quantity and Expenditure of Open Market Rice

		Expenditure Group		Total
		4	5	
TPDS Rice Quantity Group	3	6	9	15
	4	12	10	22
	5	34	8	42
	6	54	44	98
Total		106	71	177

Figure 5.18

APL-TPDS Rice Quantity and expenditure of Open Market rice



The cross tabulation shows the relation between the two variables, *i.e.* total expenditure for purchase of rice from the open market by the Above Poverty Line (APL) tribal families and the quantity of rice purchased from the Fair Price Shops by them, and therefore, the hypothesis in this respect has been tested and results obtained as follows;

Hypothesis H_{20}

h_o

There is no relation between the expenditure on purchase of food grains by the APL tribal households from the Open market and the quantity of food grains purchased by them under TPDS.

h_1

There is relation between the expenditure on purchase of food grains by the APL tribal households from the Open market and the quantity of food grains purchased by them under TPDS.

The calculated value of Chi- square is 11.423, with Degrees of Freedom 3.

The table value at 5 per cent significance level is 7.815.

The calculated value of Chi-square *i.e.* 11.423 is greater than the table value, i.e, 7.815, indicating that the Null Hypothesis h_o cannot be accepted and alternate hypothesis h_1 can be accepted. Therefore, there is relation/association between the total quantity of rice purchased by the Above Poverty Line (APL) tribal households from TPDS and total expenditure for purchase of rice by the from the open market.

Correlation worked out is -0.029, which shows inverse relation between the two variables.

5.9 Influence of the variables on quantity of wheat purchased from TPDS

Hypothesis H_{21}

ho

There is no relation between the total quantity of wheat purchased by the tribal households from TPDS and their total household income.

h_1

There is relation between the total quantity of wheat purchased by the tribal households from TPDS and their total household income.

Here, for testing the hypothesis, Table 5.11 and the total income groups as shown in Table 512 regrouped in to two groups were considered, and the cross tabulation is shown in Table 5.46.

Table 5.46 TPDS Wheat Quantity and Total Income

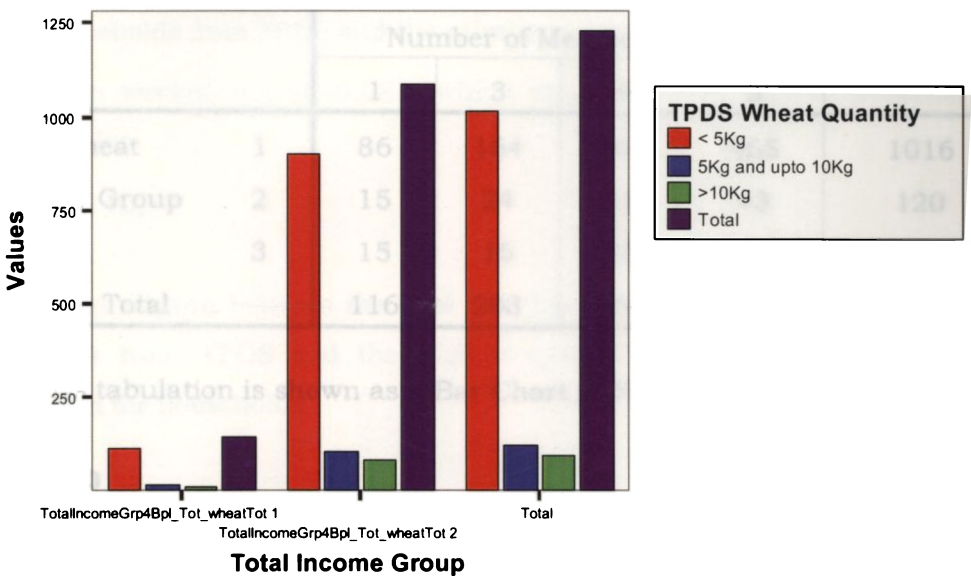
		Total Income Group		Total
		1	2	
TPDS Wheat	1	115	901	1016
Quantity Group	2	15	105	120
	3	13	82	95
Total		143	1088	1231

The cross tabulation is shown as a Bar Chart in Figure 5.19.

Figure 5.19

TPDS Wheat Quantity and Total Income Group

Statistics : Count



The calculated value of Chi- square is 0.574, with Degrees of Freedom 2.

The table value at 5 per cent significance level is 5.991.

The calculated value of Chi-square *i.e.* 0.574 is lower than the table value, *i.e.* 5.991, indicating that the Null Hypothesis h_o cannot be rejected. Therefore, the alternate hypothesis h_1 can be rejected, *i.e.* there is no relation/association between the total quantity of wheat purchased by the tribal households from TPDS and the total household income.

Correlation worked out is -0.022, which shows inverse relation between the two variables.

Hypothesis H_{22}

h_o

There is no relation between the total quantity of wheat purchased by the tribal households from TPDS and the number of members in those households.

h_1

There is relation between the total quantity of wheat purchased by the tribal households from TPDS and the number of members in those households.

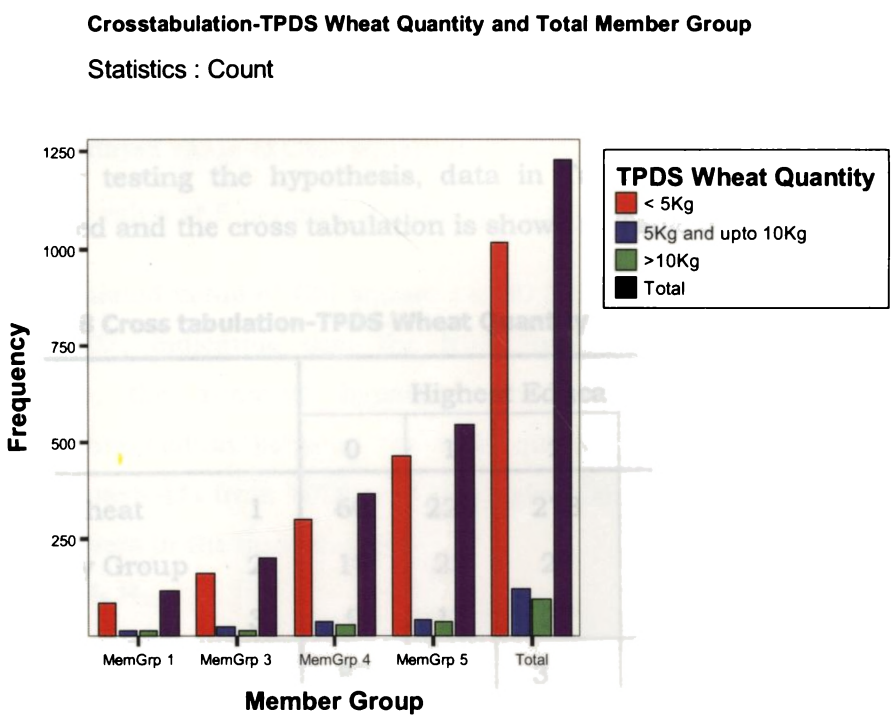
Here, for testing the hypothesis, data as in Table 5.11 and Table 5.17 were considered on the cross tabulation is shown in Table 5.47.

Table 5.47 Cross tabulation-TPDS Wheat Quantity and Total Member Group

		Number of Members Group				Total
		1	3	4	5	
TPDS Wheat	1	86	164	301	465	1016
Quantity Group	2	15	24	38	43	120
	3	15	15	29	36	95
Total		116	203	368	544	1231

The cross tabulation is shown as a Bar Chart in Figure 5.20.

Figure 5.20



The calculated value of Chi- square is 10.766, with Degrees of Freedom 6.

The table value at 5 per cent significance level is 12.592.

The calculated value of Chi-square *i.e.* 10.766 is lower than the table value, *i.e.* 12.592, indicating that the Null Hypothesis h_o cannot be rejected. Therefore, the alternate hypothesis h_1 can be rejected, *i.e.* we conclude that there is no relation/association between the total quantity of wheat purchased by the tribal households from TPDS and the number of members in those households.

Correlation worked out is -0.083, which shows inverse relation between the two variables.

Hypothesis H_{23}

h_o

There is no relation between the total quantity of wheat purchased by the tribal households from TPDS and the highest educational qualification among the members in the households.

h_1

There is relation between the total quantity of wheat purchased by the tribal households from TPDS and the highest educational qualification among the members in the households.

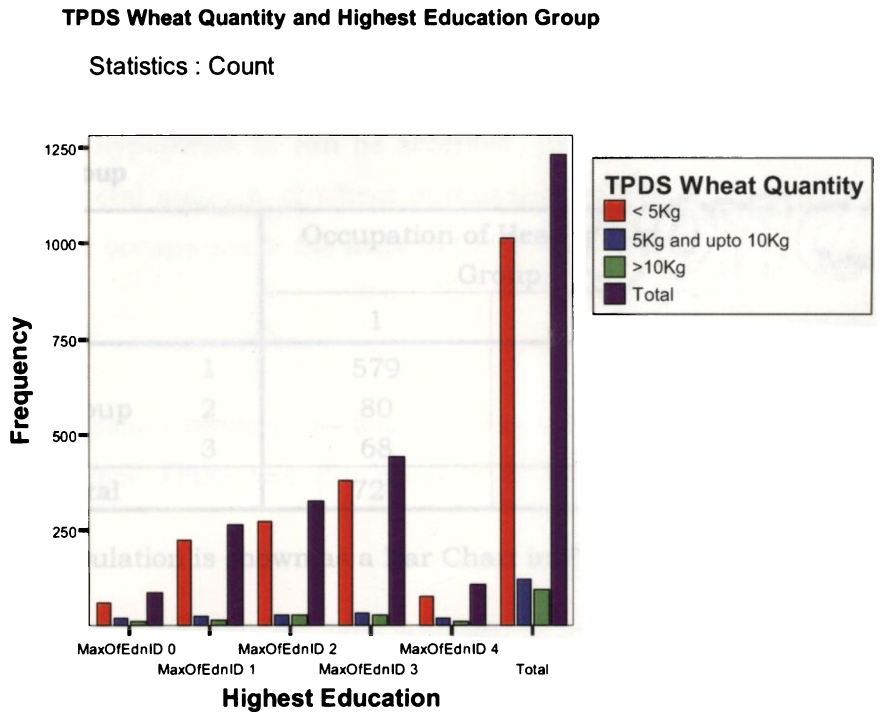
Here, for testing the hypothesis, data in Table 5.11 and Table 5.23 were considered and the cross tabulation is shown in Table 5.48.

Table 5.48 Cross tabulation-TPDS Wheat Quantity and Highest Education Group

		Highest Education Group					Total
		0	1	2	3	4	
TPDS Wheat	1	60	226	273	379	78	1016
Quantity Group	2	18	22	27	33	20	120
	3	9	17	27	30	12	95
Total		87	265	327	442	110	1231

The cross tabulation is shown as a Bar Chart in Figure 5.21.

Figure 5.21



The calculated value of Chi- square is 30.391, with Degrees of Freedom 8.

The table value at 5 per cent significance level is 15.507.

The calculated value of Chi-square *i.e.* 30.391 is greater than the table value, *i.e.* 15.507, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of wheat purchased by the tribal households from TPDS and the highest educational qualification among the members in the households.

Hypothesis H_{24}

h_o

There is no relation between the total quantity of wheat purchased by the tribal households from TPDS and the occupation of the head in the households.

h_1

There is relation between the total quantity of wheat purchased by the tribal households from TPDS and the occupation of the head in the households.

Here, for testing the hypothesis, data in Table 5.29 was regrouped as shown in Table 5.49 and Table 5.11 were considered. The cross tabulation is shown in Table 5.49.

Table 5.49 Cross tabulation-TPDS Wheat Quantity and Occupation of Head of Family Group

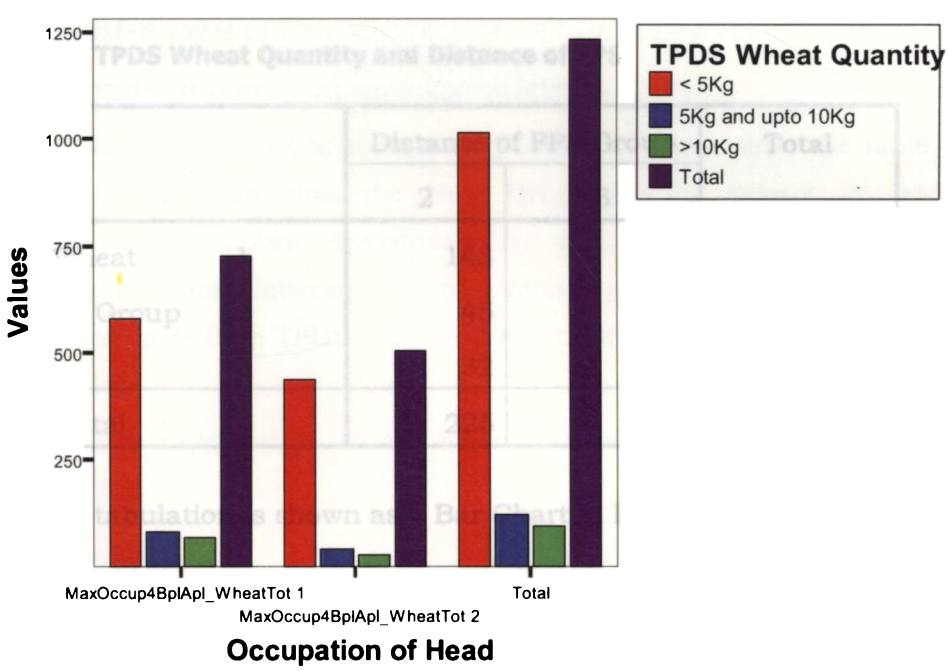
		Occupation of Head of Family Group		Total
		1	2	
TPDS Wheat Quantity Group	1	579	437	1016
	2	80	40	120
	3	68	27	95
Total		727	504	1231

The cross tabulation is shown as a Bar Chart in Figure 5.22.

Figure 5.22

TPDS Wheat Quantity and Occupation of Head of family Group

Statistics : Count



The calculated value of Chi- square is 10.833, with Degrees of Freedom 2.

The table value at 5 per cent significance level is 5.991.

The calculated value of Chi-square *i.e.* 10.833 is greater than the table value, *i.e.*5.991, indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of wheat purchased by the tribal households from TPDS and the occupation of the head of the households.

Hypothesis H_{25}

h_o

There is no relation between the total quantity of wheat purchased by the tribal households from TPDS and the distance of the Fair Price Shops from the households.

h_1

There is relation between the total quantity of wheat purchased by the tribal households from TPDS and the distance of the Fair Price Shops from the households.

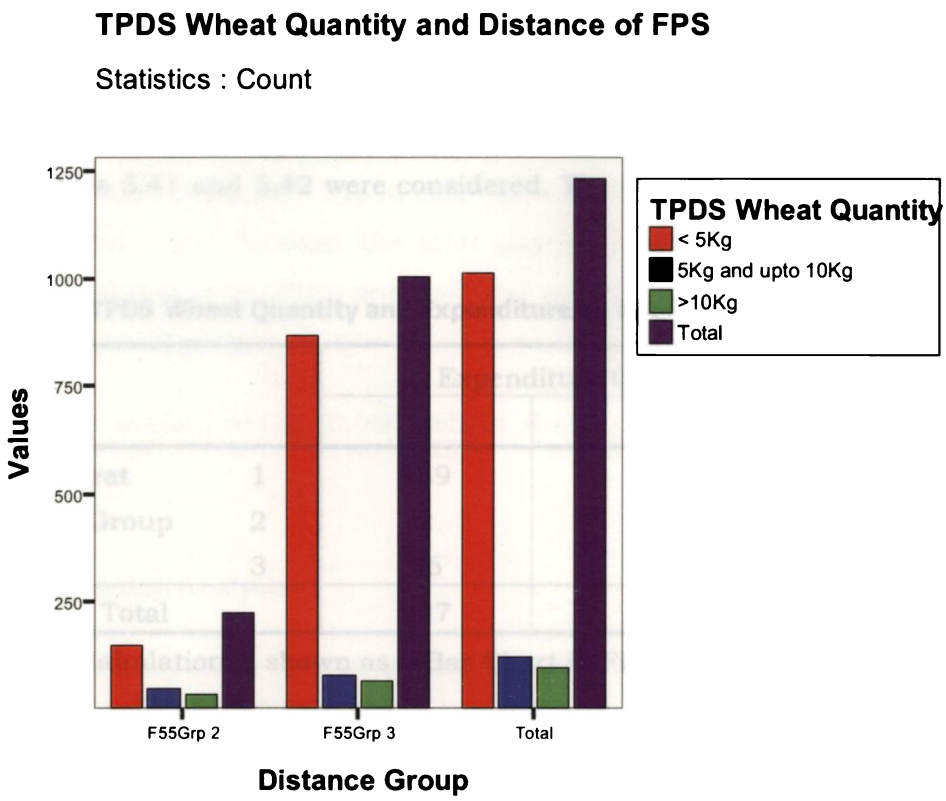
Here, for testing the hypothesis, data in Table 5.11 and Table 5.35 were considered. The cross tabulation is shown in Table 5.50.

Table 5.50 TPDS Wheat Quantity and Distance of FPS

		Distance of FPS Group		Total
		2	3	
TPDS Wheat	1	148	868	1016
Quantity Group	2	45	75	120
	3	32	63	95
Total		225	1006	1231

The cross tabulation is shown as a Bar Chart in Figure 5.23.

Figure 5.23



The calculated value of Chi- square is 54.147, with Degrees of Freedom 2.

The table value at 5 per cent significance level is 5.991.

The calculated value of Chi-square *i.e.* 54.147 is greater than the table value, *i.e.*, 5.991 indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of wheat purchased by the tribal households from TPDS and the distance of the Fair Price Shops from the households.

Correlation worked out is -0.188, which shows inverse relation between the two variables.

Hypothesis H_{26}

h_o

There is no relation between the total quantity of wheat purchased by the tribal households from TPDS and the total expenditure for purchase of wheat from the Open Market.

h_1

There is relation between the total quantity of wheat purchased by the tribal households from TPDS and the total expenditure for purchase of wheat from the Open Market.

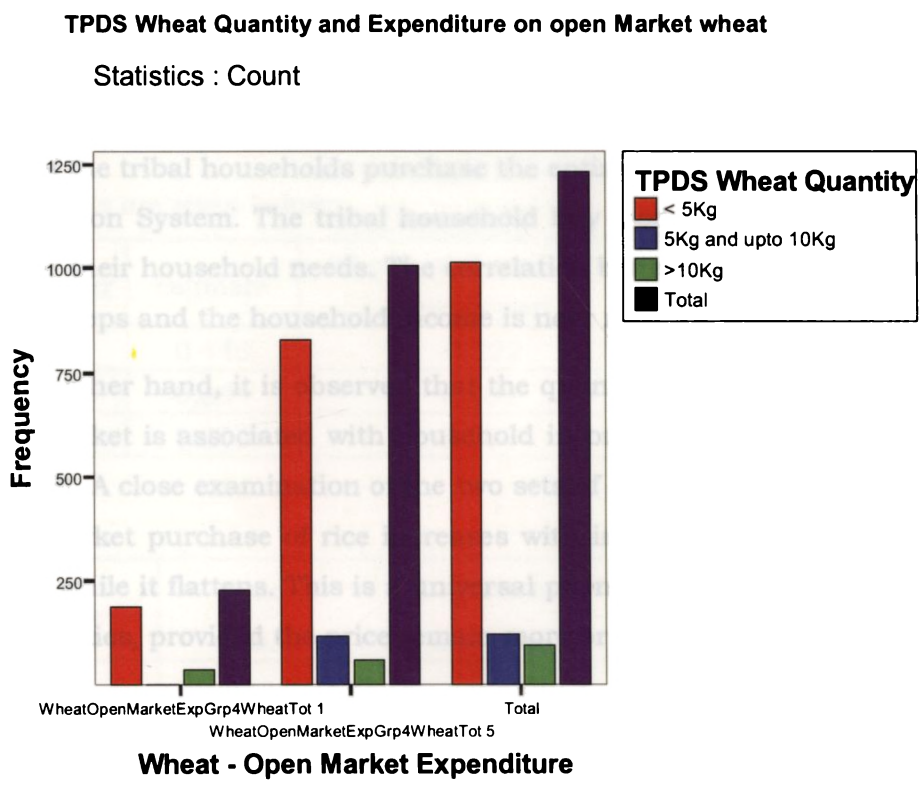
Here, for testing the hypothesis, data in Table 5.11 and the regrouped data from Tables 5.41 and 5.42 were considered. The cross tabulation is shown in Table 5.51.

Table 5.51 TPDS Wheat Quantity and Expenditure on Open Market Wheat

		Expenditure Group		Total
		1	5	
TPDS Wheat	1	189	827	1016
Quantity Group	2	2	118	120
	3	36	59	95
Total		227	1004	1231

The cross tabulation is shown as a Bar Chart in Figure 5.24.

Figure 5.24



The calculated value of Chi- square is 46.373, with Degrees of Freedom 2.

The table value at 5 per cent significance level is 5.991.

The calculated value of Chi-square *i.e.* 46.373 is greater than the table value, *i.e.*, 5.991 indicating that the Null Hypothesis h_o cannot be accepted. Therefore, the alternate hypothesis h_1 can be accepted, *i.e.* there is relation/association between the total quantity of wheat purchased by the tribal households from TPDS and the total expenditure for purchase of wheat from the Open Market.

Correlation worked out is -0.060, which shows inverse relation between the two variables.

5.10 Regression Analysis

Regression analysis to evolve a model of the determinants of quantity of food grains purchased by the Tribal families from the Open Market

Purchase of food grains by tribal households has two components – purchase from ration shop, *i.e.* under the Targeted Public Distribution System and purchase from open market.

Most of the tribal households purchase the entire allotment through the Public Distribution System. The tribal household buy food grains from open market also for their household needs. The correlation between the rice purchase from ration shops and the household income is near zero ,*i.e.* 0.07.

On the other hand, it is observed that the quantity of rice purchased from the open market is associated with household income (Coefficient of correlation, r = 0.313). A close examination of the two sets of data show that expenditure on open market purchase of rice increases with income in the initial stage, but after a while it flattens. This is a universal phenomenon in respect of essential commodities, provided the price remain more or less constant.

Another factor that affects the open market purchase of food grains is the distance of the Fair Price Shops from the residences of the tribals. In the area

studied, some of the households are situated more than 5 kilometers from the ration shops. In such cases, sometimes food grains are not procured from the Fair Price Shops; instead open market purchase is resorted.

Taking into consideration the above factors, a mathematical model for the expenditure on rice from open market is developed as

$M = \beta_o \times (\text{Total income})^{\beta 1} \times (\text{Distance to FPS})^{\beta 2}$.

Where M is the value of total expenditure, *i.e.* quantity of the food grains multiplied by the price of the food grains purchased by the tribals from the open market, β_o, β_1 and β_2 are parameters.

β_1 can be interpreted as elasticity of demand of food grains in open market with respect to income and,

β_2 elasticity of demand with respect to distance of the Fair Price Shops and

β_o constant.

Both β_1 and β_2 are assumed to be between 0 and 1.

For estimation of the parameters, logarithms are taken of both sides, which transforms the equation as

$\text{Log } M = \log \beta_o + \beta_1 \times \log (\text{Total Income}) + \beta_2 \log (\text{Distance to FPS})$

The parameters are estimated using the Ordinary Least Square (OLS) method.

The results are given below:

Parameter	estimate	95 per cent confidence level(lower)	95 per cent confidence level (upper)
$\log \beta_o$	0.448	-0.322	1.219
β_1	0.394	0.289	0.500
β_2	0.269	0.209	0.330

ANOVA

Source	Sum of squares	Degrees of freedom	Mean square	F	Sign
Regression	142.18	2	21.09	546.85	0.00
Residual	138.07	1100	0.13		
Total	280.24	1102			

Coefficient of Determination, R^2 =0.51.

F is significant indicating at least one parameter not equal to zero.

Estimation of β_1 and β_2 conform to specifications.

R^2 = 0.51, which means that the model can be used as a reasonable predictor.

It seems that the tribal households also depend to a certain extent on freely available forest produce like honey, firewood, tuber crops, herbal medicines etc., and fresh water fishes available in the water bodies inside the forests, for their subsistence. This has to be examined further.

Chapter 6
Findings and Conclusion

6. FINDINGS AND CONCLUSION

6.1 Findings

Important findings emerging from the data presented in chapter 4 and analysis of the data in chapter 5 are presented in this chapter. The socio-economic features of the tribal population are discussed in Section 6.1.1 of this chapter. Findings on the pattern of food grains purchase and consumption of the tribal people are shown in 6.1.2. The benefits derived by the tribal households from the Targeted Public Distribution System and the impact of the TPDS are narrated in 6.1.3. The findings based on the perceptions of the tribal people on the Targeted Public Distribution System are elaborated in 6.1.4. The effects of influencing variables on the quantity of food grains purchased from the Fair Price Shops under the Targeted Distribution System by the Tribal families are explained in 6.1.5. Influencing factors on the quantity of food grains purchased from the open market are identified and noted in 6.1.6.

6.1.1 Socio-economic features

- Found that around 86 per cent of the tribal population belongs to the Below Poverty Line (BPL) category, on analysis as per the income of the households and their per capita income in relation to the norms fixed by the Planning Commission for BPL/APL Classification. Only 14 per cent are BPL. The minimum per capita income of tribal families has been found as Rs.5.25 per month and the maximum as Rs.2306.95.
- Found that 40 per cent of the tribal population are illiterates. Rest of the people have acquired basic education from literacy level to pass in 10th standard and above.
- Approximately 61 per cent of the tribal population are engaged in manual labour in Agricultural farms, Forest land etc. Unemployed lot comes to around 34 per cent.
- Around 93 per cent of the tribal families live in reasonably good type of houses, i.e. tiled, terraced or with asbestos roof, constructed with partial/full financial assistance from the Government or its agencies, whereas 85 per cent of those families are income poor.

- Approximately, 41 per cent of the tribal families possess own land holdings to the extent of 50 cents to 300 cents. But only around 10 per cent of them cultivate paddy and produce 25 per cent of their requirement of rice.
- Found that around 6 per cent of the tribal families do not have Ration Cards. Among the tribal families who do not have Ration Cards, around 83 per cent belong to the Below Poverty Line (BPL) category. Majority of them have claimed that they were denied allotment of ration cards, even after filing application.

6.1.2 Consumption of food grains

- Average per capita consumption of food grains by the tribal people is higher than the national average per capita consumption of food grains. It is 10.62 kg per month, against the national standard of 8.87 kg per month. In general, it is 18 per cent higher. For BPL tribal people, it is 14 per cent higher and in respect of APL category, it is 75 per cent higher than the national average per capita consumption.
- Found that the average per capita consumption of food grain by the tribal people from the Fair Price Shops under TPDS is only 62 per cent of the minimum requirement, as per ICMR norms. Further, the per capita consumption including the purchase from the open market is only 96 per cent of the above stated minimum requirement. In respect of BPL tribal people, it is 58 per cent of the minimum requirement met from TPDS and 91 per cent of the minimum requirement met from both TPDS and open market. For APL, it is 93 per cent of the minimum requirement met from TPDS and 40 per cent higher than the minimum requirement met from both sources, i.e. TPDS and open market.
- Found that the average household consumption of food grains by the tribal people from TPDS and the Open Market is in 64: 36 ratio, within the total quantity of 43.38 kg per month.
- Found that among the BPL tribal families, the food share comes to 55 per cent of the total household expenditure, whereas the non-food expenditure is 45 per cent of the total expenditure. In the case of lower

income group among the APL tribal families, the food share is only 52 per cent of the total expenditure and the expenditure on non-food items is to the tune of 48 per cent of the total expenditure. Among the high income group within the APL tribal families, the food share is only 40 per cent of the total expenditure and the expenditure on non-food items is to the tune of 60 per cent of the total household expenditure.

- Around seven percent of the tribal families utilize only less than 60 per cent of their entitlement of food grains from the Fair Price Shops under TPDS. Among the above said seven percent, 84 per cent are Below Poverty Line (BPL) and the rest of the families, i.e. 16 per cent only belong to the Above Poverty Line (APL).
- Found that a pertinent reason for the tribal families, both APL and BPL, for purchase of rice from the open market is the better quality of the rice available in the open market. Almost 99 per cent of the tribal families emphasize that quality of rice available in the open market is better than that available in Fair Price Shops.
- Another reason for the BPL families to buy rice from open market is the credit facility provided by the private traders in the open market.
- Almost 100 per cent of the tribal people consume rice as their staple food.
- Around 77 per cent of the tribal people consume food made of rice, twice daily and 20 per cent consume rice, thrice daily.
- Approximately 79 per cent of tribal people do not consume wheat for their daily food. Only 16 per cent consume wheat at least once daily.
- Found that more than one kg of rice is consumed daily by 71 per cent of the tribal families. Around 24 per cent of the tribal families consume between 500 grams to 1 kg of rice daily.
- Around 71 per cent of tribal families purchase more than 30 kg of rice per month. 23 per cent families consume between 21 kg to 30 kg per month.
- Almost 92 per cent of the tribal families buy their allotment of food grains from the Fair Price Shops on a weekly basis. Around 5 per cent families buy their rationed articles once in two weeks.

- Around 92 per cent of the tribal people do not purchase wheat from Fair Price Shops.
- Approximately 68 per cent of the tribal families get rice@ Rs.3/- per kg from the Fair Price Shops under the TPDS. Around 30 per cent pay more than Rs.8/- per kg of rice, indicating that around 15 per cent of the tribal families belonging to the BPL category are compelled to buy rice from the Fair Price Shops by paying the higher rate stipulated for the APL category under the TPDS.
- Only 8 per cent of the tribal families buy wheat from Fair Price Shops. Among this 8 per cent, majority, i.e. around 73 per cent families pay @ Rs.6/- to Rs.7/- per kg of wheat from the Fair Price Shops, i.e. the price fixed for APL category under the TPDS.
- Around 87 per cent of the tribal families depend on Open Market also for their rice requirement, ranging from 5 kg to more than 25 kg per month. Only 13 per cent do not depend on the Open Market for their rice requirements.
- Found that average price of rice in the open market is Rs. 9.74 per kg and that of wheat is Rs. 8.84.

6.1.3 Impact of TPDS

- Found that a deficit of 62 per cent against national average per capita consumption and 70 per cent against minimum requirement per as per ICMR norms may be felt by the tribal people in general, if TPDS is withdrawn. The deficit in respect of BPL tribal people may be to the tune of 77 per cent and 82 per cent respectively against national average and minimum requirement. Deficit in respect of APL tribal people may be 17 per cent against minimum requirement.
- Found that TPDS facilitates a reduction of around 10 per cent in the food expenditure among the total household expenditure of the tribal people. For BPL tribal people, the reduction of food share among household expenditure may be 14 per cent and for APL category, it may be only two per cent.

6.1.4 Perceptions of the tribal people on TPDS

- Around 50 per cent of the tribal people appreciate the quality of rice distributed through the Fair Price Shops under the TPDS as average. 43 per cent are of the view that the quality of rice is bad or worse.
- Around 67 per cent of the tribal families prefer to purchase rice from the Fair Price Shops due to the low price.
- 79 per cent of those tribal families who buy wheat from the Fair Price Shops prefer to buy wheat from the Fair Price Shops due to the low price.
- 91 per cent of the tribal families are of the view that the price of rice distributed through the Fair Price Shops under the TPDS is still not justifiable.
- 96 per cent of those tribal families who buy wheat from the Fair Price Shops are of the view that the price of wheat distributed through the Fair Price Shops under TPDS is still not justifiable.
- Almost 99 per cent of the tribal families admit that rice is available for distribution under TPDS in the Fair Price Shops even during times of scarcity.
- Around 35 per cent of the tribal families are two to three Kilometers away from the Fair Price Shops.23 per cent families reside one to two kilometers away from the Fair Price Shops. 18 per cent live within one kilometer and 12 per cent are away by three to four kilometers. Another 12 per cent live at a distance of more than four kilometers from the Fair Price Shops. Service of private traders found available within one kilometer of almost all tribal settlements.
- Approximately 95 per cent of the tribal families admit that food grains are distributed at accurate weights and measures through Fair Price Shops. Only 5 per cent of the families differ with this view.
- Around 95 per cent of the tribal families admit that the behavior of the PDS Staff is courteous. Only 5 per cent families differ with this view.

- Around 51 per cent of the tribal families state that the rice distributed through Fair Price Shops smells bad, whereas the rest 49 per cent families differ with this view.
- Almost 99 per cent of the tribal families claim that the rice distributed through the Fair Price Shops needs more time for cooking.
- Found that around 99 per cent of the tribal families are desirous of getting wheat flour distributed through the Fair Price Shops, instead of whole wheat.
- Found that 64 per cent of the tribal families are desirous of getting more quantity of rice under TPDS, if distributed at the current price. Only 36 per cent of the tribal families are not desirous of getting further quantity of rice through Fair Price Shops at the existing price.
- Around 62 per cent of the tribal families do not have any complaints about the TPDS. Only 38 per cent of families have complaints about the TPDS. Majority of the complaints are about inferior quality of the food grains. APL customers pointed out that there is no much difference between the TPDS price and Open Market prices of food grains.

6.1.5 Influence of variables on the quantity of food grains purchased from Fair Price Shops

- Found that there is influence of the total household income of the tribal families on the quantity of rice being purchased by them from the Fair Price Shops under the Targeted Public Distribution System.
- There is influence of the total household income of the Below Poverty Line (BPL) tribal families on the quantity of rice being purchased by them from the Fair Price Shops under the TPDS.
- There is inverse relation between the total household income of the Above Poverty Line (APL) tribal families on the quantity of rice being purchased by them from the Fair Price Shops under the TPDS.
- Found that there is influence of the number of members in the tribal families on the quantity of rice being purchased by them from the Fair Price Shops.

- Found that there is influence of the number of members in the BPL tribal families on the quantity of rice being purchased by them from the Fair Price Shops.
- There is no influence of the number of members in the APL tribal families on the quantity of rice being purchased by them from the Fair Price Shops.
- Found that there is slight influence of the highest educational qualification of the members of the tribal families on the quantity of rice being purchased by them from the Fair Price Shops.
- Found that there is no influence of the highest educational qualification of the members of the BPL tribal families on the quantity of rice being purchased by them from the Fair Price Shops.
- Found that there is no influence of the highest educational qualification of the members of the APL tribal families on the quantity of rice being purchased by them from the Fair Price Shops.
- There is slight influence of the occupation of the head of the tribal families on the quantity of rice being purchased by them from the Fair Price Shops.
- There is slight influence of the occupation of the head of the BPL tribal families on the quantity of rice being purchased by them from the Fair Price Shops.
- There is no influence of the occupation of the head of the APL tribal families on the quantity of rice being purchased by them from the Fair Price Shops.
- Found that there is influence of the distance between the Fair Price Shops and the residences of the tribal people on the quantity of rice being purchased by them from the Fair Price Shops.
- Found that there is influence of the distance between the Fair Price Shops and the residences of the BPL tribal people on the quantity of rice being purchased by them from the Fair Price Shops.

- Found that there is influence of the distance between the Fair Price Shops and the residences of the APL tribal people on the quantity of rice being purchased by them from the Fair Price Shops.
- Found that there is inverse relation between the expenditure (i.e. quantity x price of rice) on purchase of rice from the open market by the tribal families and the quantity of rice being purchased by them from the Fair Price Shops.
- Found that there is inverse relation between the expenditure (i.e. quantity x price of rice) on purchase of rice from the open market by the BPL tribal families and the quantity of rice being purchased by them from the Fair Price Shops.
- Found that there is inverse relation between the expenditure (i.e. quantity x price of rice) on purchase of rice from the open market by the APL tribal families and the quantity of rice being purchased by them from the Fair Price Shops.
- There is inverse relation between the total household income of the tribal families and the quantity of wheat being purchased by them from the Fair Price Shops.
- There is inverse relation between the number of members in the tribal families and the quantity of wheat being purchased by them from the Fair Price Shops.
- Found that there is slight influence of the highest educational qualification of the members of the tribal families on the quantity of wheat being purchased by them from the Fair Price Shops.
- Found that there is slight influence of the occupation of the head of the tribal families on the quantity of wheat being purchased by them from the Fair Price Shops.
- Found that the distance between the Fair Price Shops and the residences of the tribal families has inverse relation with the quantity of wheat being purchased by them from the Fair Price Shops.
- Found that the expenditure (i.e. quantity x price of wheat) on purchase of wheat from the open market by the tribal families has inverse relation with the quantity of wheat being purchased by them from the Fair Price Shops.

6.1.6 Influencing factors on the quantity of food grains purchased from open market

Found that total household income of the tribal families and the distance of Fair Price Shops from the tribal settlements have direct bearing on the quantity of food grain purchased by the tribal people from the Open Market.

6.2 Conclusion

A study on "Targeted Public Distribution System in Food Grains: Extent of Utilization by the Tribal Population in Kerala" has been conducted with Objectives as given in 1.7 of this thesis. The methodology has been stated in chapter 3. Data collected is presented in chapter 4 followed by analysis in chapter 5.

The detailed findings were elaborated in the previous sections of this chapter. Accordingly, the conclusion derived from the study is presented below:

- The first objective was to study the consumption pattern of food grains among the tribal people in Kerala. A detailed picture of the consumption of food grains by the tribal people in Kerala was drawn in section 5.1. Comparison with the national average per capita consumption as well as the minimum requirement as per the ICMR norms was also made.
- Next objective was to evaluate whether the hunger needs of the poor people among the tribals in Kerala are being fulfilled by distribution of food grains through the TPDS. It has been found that the hunger needs of the poor people among the tribal population in Kerala are fairly met by purchase of food grains through the TPDS, as elaborated in 6.1.2. In contradiction to this finding, Rao (1998) has pointed out in his study that PDS purchases account for less than a fifth of the food grains consumption of the poor. Perhaps, this may be due to the disparities in the socio-economic conditions, geographical variations, difference in sampling, etc.
- The third objective was to study the extent to which the TPDS in food grains facilitate reduction in food share among other household expenditures of the tribal families in Kerala. It was found in this study

that the TPDS has a role in reducing the food expenditure among other expenditures of tribal families in Kerala as noted in 6.1.3. It was also found in this study that 70 per cent deficiency in food gains may be felt by the tribal people in general, if TPDS is withdrawn. Deficiency may be 82 per cent for the BPL tribal people and 17 per cent for the APL tribal people. Dreze and Sen, *et al.* (1989) pointed out in their study that poverty alleviation and increasing food security have occurred even while the economy was stagnant. The findings agree in principle.

- Next objective was to analyze the factors affecting the utilization of the TPDS in food grains by the tribal population in Kerala. In this study, it was found that factors like Household income, family size, distance of FPS from the tribal settlements etc., have influence on the quantity of rice being purchased by the tribal people from TPDS. In respect of the quantity of wheat purchased from TPDS, highest education of the members of the tribal families, occupation of the head of the tribal family and distance of FPS from tribal settlements etc., are the influencing factors. This study has also resulted in a model in determining the quantity of rice purchased from open market. The factors are household income and Distance of FPS from the tribal settlements. Narayanan (1986) has stated that among the factors influencing the demand for food grains, population, income, price, family size and price of the substitutes were found important. The findings are almost identical.
- It was also found in this study that poor people among tribal population in Kerala spend 55 percent of their income on food and the rest 45 percent only on non-food. APL tribal people spend 40 percent on food and 60 percent on non-food. Majumder (2004) stated that the poor continue to spend most of their budget on food and much higher than the percentage spent by the non-poor on food. The findings are identical.
- Found in this study that around six percent of the tribal families do not have ration cards, among which 83 percent belong to the BPL category.

Majumder (2004) found that many income poor (BPL) households have remained cardless and many BPL households have the yellow cards, which are meant for non-poor (APL). Both findings are identical.

- In this study, it was found that around seven percent of tribal people, among which 84 percent are BPL, do not buy more than 60 percent of their monthly allotment. Suryanarayana (1997) highlighted that poor do not buy their entire quota of PDS grains for want of cash and the non-poor because of poor quality of the items. Antony (1994) has stated that low off take of food grains from PDS is mainly due to low price difference between PDS food grains and those in the open market and lack of purchasing power in tribal and poor areas. The finding of the researcher in this study is supported by the above two findings.

Even though TPDS has a positive role in reducing the share of food expenditure among the household expenditures of the tribal people, income poverty of the tribal people, distribution of inferior quality food grains through the Fair Price Shops, distance of the FPS from the tribal settlements etc., are some of the pertinent issues still persisting as constraints in achieving the desired objectives of the TPDS.

The programme designers and policy planners may take effective steps to address the issues concerned, while making future plans in implementing the TPDS more effectively or in improved forms.

6.3 Limitations of the study

The study was conducted in Idukki, Palakkad and Wayanad districts in Kerala, covering 95 tribal settlements. However, the researcher would like to point out some of the limitations of the study, as follows:

1. During the study, it has come to notice that some of the households with very low income among the tribal population were classified under Above Poverty Line (APL) and vice versa which can be termed as 'errors in targeting'. This aspect has not been subjected to in depth review as part of this study.

2. Comparative study of the utilization of TPDS by the tribal population in other states would have added value to the present study which could not be conducted due to the difficulty in collecting data.

6.4 Scope for further research

Impact of TPDS in the Food Grains market, i.e. the Open Market, at macro level has to be studied so as to formulate policies and programmes in that perspective.

Amount spent as subsidy by the Government on food grains being sold through the Fair Price Shops under TPDS is on the economic cost of the FCI. The Minimum Support Price for procuring food grains, carrying costs such as storage charges, transportation charges, investment expenses etc., are the important factors in the economic cost of the FCI. These factors may encroach in to the possibility of income transfer to the targeted customers through the TPDS. Thrust may be given on this aspect while doing further research on TPDS.

Targeting errors have been noticed in the classification of the tribal people in to BPL/APL categories. A review of the norms and procedures for the BPL/APL classification may be carried out and implemented meticulously so the benefits of the TPDS may reach the really targeted people. Further research on this aspect is also needed.

Chapter 7
Recommendations

7. RECOMMENDATIONS

Based on the findings, the following recommendations are made for augmenting the effectiveness and efficiency of the TPDS or redesigning the system in future, with a view to achieve the desired objectives of the system.

- Rationing with differential pricing on phased allotments.

  It has been found that around 50 per cent of the tribal families in the BPL category are having their household per capita income less than Rs.300/- per month and only the rest 50 per cent have an income between Rs.300 and Rs.457/-. Further, among the tribal families who buy only less than 15 kg of food grains from the Fair Price Shops in spite of an allotment of 25 kg of food grain@ Rs.3/- per kg, 82.41 per cent of them belong to the BPL category. To ensure that the minimum quantity of food grain to meet the hunger needs of the BPL category of tribals are provided at a lesser rate and also to avoid hike in the Government's subsidy commitment, the following pattern of allotment with differential pricing is suggested. It is expected that this proposal, if implemented may encourage need based purchase of food grains by the consumers from the Fair Price Shops, especially in families with lesser number of members.

  a) BPL families

First 10 kg food grain @ Rs.2/-	=	Rs.20/-
Second 10 kg food grain @ Rs.3/-	=	Rs.30/-
Last 5 kg food grain @ Rs.5/-	=	Rs.25/-
Total 25 kg food grain per month	=	Rs.75/-
Average rate per kg of food grain	=	Rs.3/-

  c) APL families

  Rice

First 10 kg rice @ Rs.8/-	=	Rs.80/-
Second 10 kg rice @ Rs.9/-	=	Rs.90/-
Last 5 kg rice @ Rs.10.50	=	Rs.52.50
Total price for 25 kg rice per month	=	Rs.222.50
Average rate per kg of rice	=	Rs.8.90

Wheat

First 10 kg wheat @ Rs.5.50/-	=	Rs.55/-
Second 10 kg wheat @ Rs.7/-	=	Rs.70/-
Last 5 kg wheat @ Rs.8.50	=	Rs.42.50/-
Total price for 25 kg wheat per month	=	Rs.167.50/-
Average rate per kg of wheat	=	Rs.6.70/-

- Errors in targeting, due to anomalies in norms and procedures for classification of tribal people, as BPL/APL shall be rectified. The tribal people residing in good type of houses constructed with the financial assistance of the Government as well as those having reasonably good landholdings provided by the Government on long lease or in full ownership while relocating them from some of the project sites, etc. are classified as Above Poverty Line (APL) category despite their very poor income. This contradictory situation has to be done away with by formulating proper norms and procedures for targeting the tribal people for entitlement of the benefits of the TPDS.
- Exclusive Income Generation/Employment Generation Programmes for tribal population may be formulated so as to enhance their purchasing power. Otherwise, tribal households with very poor income may not be able to buy their allotment of food grains under TPDS even at subsidized prices.
- Paddy cultivation in the landholdings possessed by the tribal people may be promoted and the paddy so produced may be procured by the FCI/Civil Supplies Department for distribution through the TPDS providing Minimum Support Price as being done in north Indian States, Andhra Pradesh, etc.
- Special drive for allotment of Ration Cards to the tribal people, especially those belonging to the BPL category may be carried out on war footing, since many of the really deserving tribal families are deprived of the benefits of the TPDS at present due to non availability of Ration Cards.
- Mobile Fair Price Shops may be operated in the tribal settlements. The mobile shops may function in specified locations within the tribal

settlements, during notified timings, convenient for the tribal people to purchase the food grains under TPDS. The difficulties faced by the tribal people in purchasing the food grains from the Fair Price Shops located at faraway places from the tribal settlements can be resolved by the implementation of Mobile Fair Price Shops. Further, the tribal families may buy their allotment of food grains in convenient small lots depending on their funds availability and in tune with their requirements for consumption, if it is ensured that the mobile shops function at the specified locations on notified timings.

- Utmost care should be taken to ensure quality of food grains distributed through the TPDS. First in-first out release of stock of food grains shall be implemented at all levels of distribution right from the procurement centers of the Food Corporation of India to the Fair Price Shops. Fumigation of food grains observing approved norms shall be carried out in all storage points to avoid deterioration of the food grains distributed through the Fair Price Shops.
- Wheat flour may be distributed probably in packed condition instead of whole wheat being distributed through the Fair Price Shops, especially since the tribal people do not have adequate facilities for conversion of the raw wheat distributed through the Fair Price Shops at present, to Atta for their daily use.
- Vigilance squads at the official level of both FCI and the Department of Civil Supplies shall be formed and periodic inspection of all the storage as well as distribution points of the TPDS including the Authorized Wholesale Depots and Fair Price Shops shall be conducted. Unbiased corrective actions as well as reprimanding and deterring actions shall be taken against defaulters, offenders etc. Further, vigilance committees with the involvement of representatives of the consumers, Grama sabhas, co-operative societies, etc. may also be constituted with statutory powers for monitoring the operation of the TPDS as well as to suggest and follow up corrective actions in case of erratic implementation of the TPDS.

Bibliography

BIBLIOGRAPHY

1. Bahl, P.N. (1974). Co-operative Distribution of Controlled Cloth – A Study in Triumph, Quoted in: Indian Co-operative Review,January,1974, Vol.XI, No.2,P.45.
2. Bapna. S.L. (1990). Food Security through PDS: the Indian experience. In: D. S. Tyagi and Vyas, Vijay Shankar (eds.). Increasing access to food, The Asian experience. New Delhi: Sage Publications.
3. Batra, J.D. (1976). Rural Consumer Co-operatives, Quoted in Kurukshetra, November, 1976, Vol. 23, No. 3, p.16.
4. Bhaduri, Amit. (1985). Class relations and Commercialization in Indian Agriculture: a study on the post independence agrarian reforms of Uttar Pradesh. In: K.N.Raj, N.Bhattacharya, S.Guha and S.Padni (eds.) Essays on the commercialization of Indian agriculture. Delhi: Oxford University Press. pp.306-318.
5. Bhalla. G.S. (1994). Policy for food security in India, New Delhi: Institute for Studies in Industrial Development.
6. Bharadwaj, Krishna. (1985). A view on commercialization of Indian agriculture and the development of capitalism. Journal of peasant studies,12, No.4, pp.7-25.
7. Bhatia. K.M. (1991). Famines in India. Delhi: Konark Publishers.
8. Birla Institute of Scientific Research. (1980). State in Food Grain Trade in India – A Study of Policies and Practices of Public Distribution System; New Delhi: Vision Books.
9. Bora.P.M. (1982). Food Administration in India, Delhi: Ajantha Publications.
10. Bordignon, Gian Pietro. (2006). The challenge of food security in India, The Hindu, 24th October, 2006. Kochi edition.
11. Bose, K.C. (1983). Distribution of Consumers Articles in Rural India, Quoted in: Yojana, April, 1983, No. 7, p. 22.
12. Census of India.(2001). Kerala: Series (33).
13. Chattopadhya, p. (1982). Public Distribution of food grains, Quoted in: Commerce Annual, November, 1982, p.20.

14. Chopra. R.N. (1976). Operational problems of the FCI as a Supplier to the PDS (paper) Ahmedabad: Indian Institute of Management.

15. Clay, E.J., B.Harris, C.Benson and S.Gillespie. (1988). Food Strategy in India. Approaches to food strategy in the natural resources sector. London: Relief and Development Institute.

16. Coondoo, Dipankar, Majumder, Amita and Bhattacharya, Kaushik. (1998). Employment, Level of living and Utilisation of PDS, Delhi: Oxford University Press.

17. Das, Ojha Ghanshyam. (1987). Organization and Management of Public Distribution System, Delhi: Mittal Publications.

18. Dass, Dharinder. (1974). Procurement and Distribution of Essential Commodities should be through Co-operatives, Quoted in: The Co-operator, April 15, 1974, Vol. xi, No. 20, p.5.

19. Dev, Mahendra. S. (1996). Food Security: PDS Vs EGS, A Tale of Two States, Quoted in: Economic and Political Weekly, 6-13, July, 1996, Vol. XXXI, No. 27, p. 1752.

20. Dev, Mahendra. S. and Ranade, Ajit. (1998). Raising Food Prices and Rural Poverty: Going Beyond Correlation, Economic and Political Weekly. September, 1998, Vol. XXXIII, No. 39, p.2535.

21. Dreze and Sen. (1989)., Franke and Chasin. (1992)., Kannan.K.K. (1995). Kerala as a model of PDS, Thiruvananthapuram: Centre for Development Studies.

22. Dreze, Jean and Sen Amartya. (1989). Hunger and Public action. Oxford: Clarendon Press.

23. Dwivedi, A.P. (1993). Non-wood Forest Products and tribals. Dehra Dun: International Book Distributors.

24. Economic Review. (2006). Kerala: State Planning Board.

25. Fox, Jonathan. (1992). The Politics of food in Mexico, State Power and Social mobilization. London: Cornell University Press.

26. George. P.S. (1979). Public Distribution of Food Grains in Kerala, Income Distribution and Effectiveness, Research Report-7, Washington: International Food Policy Research Institute.

27. Ghose, Ajit Kumar. (1999). Food Supply and Starvation, A study of Famines with reference to the Indian Sub-Continent, in Dreze and Jean (Ed), *The Economics of Famine*, Edward Elgar, UK.

28. Ghosh, Jayoti. (1997). India's Structural Adjustment: An Assessment in Comparative Asian Context, Quoted in: Economic and Political Weekly, 17-24, May, 1997, Vol. XXXII, No. 20-21, p.1130.

29. Government 'Subsidizes' Open market sale of food grains, Article in 'Business Standard', 26th November, 2007.

30. Government of India, Tenth Five Year Plan Vol. I, New Dlhi: Planning Commission.

31. Government of India. (Annual Report 1991-92). New Delhi: Ministry of Food and Civil Supplies, Department of Civil Supplies.

32. Gulati, S.C. and Krishna. (1975). The Pattern of Income Distribution in India, Edited by Srinivasan, Calcutta: Statistical Publishing Society.

33. Gupta, Aravind. (1977). Public Distribution of Food Grains in India, Ahmedabad: Indian Institute of Management.

34. Gupta, Arvind. (1974). Public Distribution of food grains in India, Ahmedabad: CMA, Indian Institute of Management.

35. Gupta, S.R.. (1975). Reflections on Tribal Development , Quoted in: Indian Co-operative Review, Delhi, NCUI, 1975, Vol. XII, No. 2, pp. 180-188.

36. Harris, Barbara. (1991). The give and take of calories: Tamil Nadu's food and nutrition policies and village food energy during drought in the early eighties. Delhi: Sage Publications.

37. Hinton, Harold.C. (1956). The Grain Tribute System of China (1845 - 1911). Peking: Chinese Economic and Political Studies.

38. http://www.fcamin.nic.in/ (accessed on 18/5/2006)

39. http://www.fci.nic.in/ (accessed on 25/4/2006)

40. Hubbard, Leonard. E. (1938). Soviet Trade and Distribution, London: Macmillan and Co.

41. Indrakant.S. (1995). Food Security and Public Distribution System in Andhra Pradesh, Workshop on Food Security and Public Distribution System in India, New Delhi: Planning Commission.

42. Indrakant.S. and Rao, Nageswara. R. (2003). Working of Food Coupon Scheme in Andhra Pradesh, Hyderabad: Osmania University.

43. Japan External Trade Organization (JETRO). (1982). Planning for Distribution in Japan- Marketing Series-4.

44. Jha, Jai Prakash. (1992). Food Distribution in Tribal Areas: A Case Study, Quoted in: Yojana, May 15,1992, Vol.36, No.8, p.22.

45. Kabra, Kamal Nayan and Ittiyera, Anil Chandy. (1992). The Public Distribution System in India, New Delhi: Eastern Books.

46. Kabra, Kamal Nayan. (1990). Political economy of Public Distribution of Food in India, New Delhi: Ajanta Publications.

47. Kannan, K.P. (2000). Food Securityin a regional perspective. Working paper No. 304. Thiruvananthapuram: Centre for Development Studies.

48. Koshy, Abraham. (1991). Malfunctioning of the PDS: An empirical analysis, Quoted in: Vikalpa, January-March, 1991, Vol.16, No.1, p.48.

49. Kothari.C.R. (1985). Research Methodology, Methods and Techniques, New Delhi: Wishwa Prakashan.

50. Krishnaji. N. and Krishnan. T.N. (2000). Public Support for Food Security, New Delhi: Sage Publications (India) Pvt. Ltd.

51. Kumar, Sunil.C.T. (2004). Systems Approach to Materials Management, Thiruvananthapuram: University of Kerala.

52. Majumder, Bhaskar. (2004). Poverty, Food Security and Sustainability, Public Distribution System in India. Jaipur: Rawat Publications.

53. Manual on the Organization of Food Control and Rationing. (1944). Government of India, New Delhi: Department of Food.

54. Mishra, Bhagabat. (1985). Economics of Public Distribution System in Food Grains. New Delhi: Ashish Publishing House.

55. Mooij, Jos. (1996). Food Policy and Politics, The Public Distribution System in Karnataka and Kerala, South India. Netherlands: Wageningen.

56. Mooij, Jos. (1999). Food Policy and the Indian States, The Public Distribution System in South India, New Delhi: Oxford University Press.

57. Mooij, Jos. E. (1994). PDS As Safety Net Who Is Saved, Quoted in: Economic and Political Weekly, January 15, 1994, Vol. XXXIX, No.3, p.124.

58. Mooij, Jos.E. (1995). The social construction of food distribution policy in India, 1939-1990. In: Paul Baak (ed.) CASA Nova aspects of Asian societies1. Amsterdam: Centre for Asian Studies.

59. Nair.K.N. (2000). Food Security and the Public Distribution System in Kerala, Thiruvananthapuram: Centre for Development Studies.

60. Narayan.S. (1986). Demand-Supply Gap and Public Distribution of Food grains in India. New Delhi: Agricole Publishing Academy.

61. Pal, Suresh Bahl. D.K. and Mruthyunjaya. (1993). Government interventions in food grain markets. The case of India. Food Policy.

62. Patel, M.. L. (1983). Agricultural Financing by Co-operatives in Tribal Areas, Quoted in: Indian Co-operative Review, April, 1983, Vol. XII, No. 2, pp. 170-175.

63. Pathania, Kulwant Singh. (2005). Public Distribution System, Status, Challenges and Remedial strategies, New Delhi: Kanishka Publishers.

64. 'PDS to Stay' says Antony, Quoted in: Times of India, January 21, 1994, New Delhi Edition.

65. Programme Evaluation Organization Report on Revamped Public Distribution System, 1993-94. (1995). New Delhi: Planning Commission.

66. Puthusseri, Gopalan. (1991). A Syudy on the Public Distribution System with special reference to the Kerala State Civil Supplies Corporation, Calicut: University of Calicut.

67. Rao, Hanumantha. C.H. (1996). Economic Reforms, Agricultural Growth and Rural Poverty, Quoted in: The Indian Economic Journal, April- June, 1996, Vol. 43, No. 4, p.9.

68. Rao, V.M. (1998). Economic Reforms and the Poor, Quoted in: Economic and Political Weekly, 18-25, July, 1998, Vol. XXXIII, No. 29-30, p. 1951.

69. Ravichandran, S.A. and Padmanabhan, N.R. (1998). Purchase Behaviour of Consumers in Consumer Co-operatives, Quoted in: Indian Co-operative Review, January, 1998, Vol. XXXV, No. 3, p.227.

70. Rome Declaration on World Food Security. (1996). World Food Summit.

71. Sen, Abhijit. (2004). High Level Committee Report, New Delhi: Ministry of Food and Civil Supplies.

72. Shah, Mihir. (2003). Why attack the food subsidy, 'The Hindu', 24th January, 2003.

73. Singh, C.D. (1982). PDS in India, Quoted in: Indian Journal Commerce, November, 1982, Vol. XXXV, No.4, p.5.

74. Sinha, Rajiv Kumar. Dr. and Singh, Bishnu Deo. Dr. (1998). Rural Development through Poverty Alleviation : Need for an Appropriate Strategy, Quoted in: Kurukshetra, September, 1998, Vol. 46, No. 12, p. 43-45.

75. Sinha, Yashwant. (1991). Need to streamline PDS Stressed, Quoted in: The Sunday Tribune, January23, 1991, p.9.

76. Sud, Surinder. (1992). Operating Revamped PDS Effectively, Quoted in: Kurukshetra, My, 1992, Vol.XI, No. 8, p.6.

77. Suryanarayana, M.H. (1997). Measuring Incidence of Food, Quoted in: Indian Journal of Economics, January, 1997, Vol. LXXVII, No. 306, p.303.

78. Suryanarayanan, M.H. (1996). Food Security and PDS in Kerala: Form and Scope for Reform, Paper presented at the International Conference on Kerala's Development Experience: National and Global Dimensions, 9-11 December, New Delhi.

79. Swaminathan, Madhura. (2000). Weakening welfare, The Public Distribution of food in India. New Delhi: Left Word Books.

80. Swaminathan, Madhura. (2008). Public Distribution System and Social Exclusion, Article in 'The Hindu' , 7th May, 2008.

81. Taimni, B.K. (2001). Food Security in 21st century, Perspective and vision. Delhi: Konark Publishers Pvt. Ltd.

82. Taimni.K.K. (1975). Studies in retailing, Consumers' Co-operative & Public Distribution System, Poona: Hashad Prakashan.

83. Tyagi.D.S. (1990). Managing India's food economy; Problems and alternatives. New Delhi: Sage Publications.

84. Venugopal.K.R. (1992). Deliverance from hunger, The Public Distribution System in India, New Delhi: Sage Publications India Pvt. Ltd.

85. Vidyasagar. (1996). The Public Distribution System and Food Security in a region of large agricultural instability: Rajasthan, Delhi: Mittal Publications.

PUBLICATION RELATED TO THIS WORK

Thulaseedharan Nair, K. and Bhasi, M. A study on the effectiveness of Public Distribution System on Food grains among tribal population in Thiruvananthapuram District, Kerala. Kolkata: *'Survey', Journal of Indian Institute of Social Welfare and Business Management* (paper accepted for publishing in forthcoming issue).

Annexure

ANNEXURE – I

List of the Tribal Colonies

1. IDUKKI DISTRICT

Marayur Village - I

1. Iruttalakudi tribal colony
2. Kammalankudi tribal colony
3. Kavakudi tribal colony
4. Kudakkadukudi tribal colony
5. Kuthukallukudi tribal colony
6. Nellipettikudi tribal colony
7. Periyakudi tribal colony
8. Vellakkallu tribal colony
9. Venkapparakudi tribal colony

2. PALAKKAD DISTRICT

Agali Village - II

10. Nellippathi ooru tribal colony
11. Nellippathi laksham veedu tribal colony
12. Agali mele ooru tribal colony
13. Agali thazhe ooru tribal colony
14. Rajiv colony
15. Nakkuppathi ooru
16. Nakkuppathi pirivu mele ooru
17. Lathuvazhi ooru
18. Gulikkadavu thazhe ooru
19. Narazimukku ooru
20. Kavundikkal ooru
21. Kottamedu ooru
22. Thazhesambarkodu ooru

Kottathara Village - III

23. Thazhesambarkodu ooru
24. Vadakottathara ooru

Sholayar Village - IV

25. Thazhesambarkodu ooru
26. Varagampadi ooru

3. WAYANAD DISTRICT

Pulppally Village - V

27. Dasanakkara tribal colony
28. Cheriyamala tribal colony
29. Thazhassery tribal colony
30. Thirumukhom tribal colony
31. Machimoola tribal colony
32. Vilangadi tribal colony
33. Chekkadi tribal colony
34. Veeradi tribal colony
35. Iradi tribal colony
36. Kattakkandi tribal colony
37. Vellakkettu tribal colony
38. Mathalampatta tribal colony
39. Palanchola tribal colony
40. Kollivayal tribal colony
41. Kareri tribal colony
42. Thonikkadavu tribal colony
43. Moolavayal tribal colony
44. Myladi tribal colony
45. Kurichippatta tribal colony
46. Narivayal tribal colony
47. Forestvayal tribal colony
48. Velukolli tribal colony
49. Manalvayal tribal colony
50. Panikker colony
51. Kalanthur colony
52. Mudavunkara tribal colony
53. Pakkam tribal colony
54. Pulppally tribal colony
55. Aloor tribal colony

Muthanga Village - VI

56. Muthanga colony
57. Alathur colony
58. Kallumukku colony
59. Mykkara colony
60. Muthanga manmade colony
61. Chiramoola colony
62. Chukkalikuni colony
63. Kumizhi colony
64. Athikkuni colony

Kallooru Village – VII

65. Marodu colony
66. Mammodam pally tribal colony
67. Kallumukku tribal colony
68. Choondappadi tribal colony

Batheri Village – VIII

69. Thoduvatti colony
70. Kattayadu colony

Naykkatti Village – IX

71. Pilakkavu tribal colony
72. Manimunda tribal colony
73. Pampankolli tribal colony

Purakkadi Village – X

74. Kolampatta colony
75. Athippura colony
76. Moothimoola colony
77. Panthalam colony
78. Vellithodu colony

Vellithodu Village – XI

79. Vellithodu colony

Nenmeni Village – XII

80. Thoduvatti colony

Noolppuzha Village – XIII

81. Manimunda tribal colony
82. Pambankolli tribal colony
83. Puthoor colony
84. Eruthukallu tribal colony
85. Panthamkolli colony
86. Moothikundu colony
87. Noolppuzha avayal colony
88. Chettialathur colony

Chettialathur Village – XIV

89. Thandankara tribal colony
90. Eettippura tribal colony
91. Puliyadi tribal colony
92. Chanakappura tribal colony
93. Pattavayal tribal colony
94. Ozhalamoola tribal colony
95. Kaniyaram colony

Household Survey Schedule - English

FOR RESEARCH PURPOSE ONLY

Sub : Public Distribution system-achievement of its objectives - A study on Tribal Population in Idukki, Palakkad and Wayanad Districts.

Instructions : Probable answers for most of the questions given against each with codes 1-9. Appropriate code representing the answer to be recorded in the space provided at right side.

INTERVIEW SCHEDULE

1. Name of the Tribal colony

2. Name of the village

3. Name of the District: Idukki - 1 Palakkad - 2 Wayanad - 3

4. Name of the respondent

5. Whether you have a ration card? Yes - 1 No - 2

6. Whether BPL/APL? BPL - 1 APL - 2

7. Number of the ration card

8. If the household has no ration card, reason?

   Not applied - 1
   Not allotted on application - 2
   Not interested - 3
   PDS not beneficial - 4
   Unaware of PDS - 5
   Any other reason - 9

9. Caste/Gotra

10. Household data: (Including the family head)

Sl. No.	Name (in brief)	Male/ Female	Age	Education (Code)	Occupation (Code)	Monthly Income	Health status (Code)

* For education, occupation and health status code may be entered in the respective columns

*** Education**

Uneducated - 0
Below 5th standard - 1
5th standard to 8th standard - 2
Any other - 9

*** Occupation**

Unemployed - 0 Manual labour - 1 Agriculture - 2 Fishing - 3
Collecting forest products - 4
Household work - 5
Govt./regular income job - 6
Others - 9

*** Health Status**

Sound health - 1 Average health - 2 Poor health - 3
Very poor health - 4
Others - 9

11. Other household income: Rs. ..... (Monthly)

(from agriculture, cow, hen, pension etc.)

12. Type of residential building? ☐
Hut thatched by reed leaf - 1 Thatched house with palm leaf - 2 Tiled house - 3
Asbestos roofed house - 4 Small terraced building - 5 Any other - 9

13. Area of land in possession? ☐
Below 50 cents - 1 50 to 100 cents - 2
101 to 200 cents - 3 201 to 300 cents - 4
Above 300 cents - 5 Others - 9

14. Area of land being cultivated? ☐
Nil - 0 Quarter of available land - 1
Half of available land - 2 3/4th of available land - 3
Full available land - 4 Others - 9

15. Cereal normally used for cooking food? ☐
Rice - 1 Wheat - 2 Others - 9

16. How many times rice based food being consumed per day? ☐
Nil - 0 Once - 1 Twice - 2
Thrice - 3 Four times - 4 Others - 9

17. How many times wheat based food being consumed per day? ☐
Nil - 0 Once - 1 Twice - 2
Thrice - 3 Four times - 4 Others - 9

18. How many times food based on other cereals being consumed per day? ☐
Nil - 0 Once - 1 Twice - 2
Thrice - 3 Four times - 4 Others - 9

19. Quantity of rice being consumed per day? ☐
Below 250 grams - 1 250 to 500 grams - 2
Above 500 grams to 1 K.G - 3 Above 1 K.G - 4
Others - 9
Exact weight

20. Quantity of wheat being consumed per day? ☐
Below 250 grams - 1 250 to 500 grams - 2
Above 500 grams to 1 K.G - 3 Above 1 K.G - 4
Others - 9
Exact weight

21. Quantity of rice being purchased per month? ☐
Below 10 K.G - 1 10 to 20 K.G - 2
Above 20 K.G to 30 K.G. - 3 Above 30 K.G - 4
Others - 9
Exact weight

22. Quantity of wheat being purchased per month? ☐
Below 10 K.G - 1 10 to 20 K.G - 2
Above 20 K.G to 30 K.G. - 3 Above 30 K.G - 4
Others - 9
Exact weight

23. Do you buy rice from Ration shop? ☐
Yes - 1 No - 2

24. Who personally goes to buy ration items? ☐
Wife - 1 Husband - 2 Son - 3 Daughter - 4 Others - 9

25. If yes on Q-23, How often you buy rice from ration shop? ☐
Weekly - 1 Fortnightly - 2 Monthly - 3
Occasionally - 4 During famine period only - 5 Others - 9

26. Do you buy wheat from ration shop? ☐
Yes - 1 No - 2

27. If yes on Q-26, How often you buy wheat from ration shop? ☐
Weekly - 1 Fortnightly - 2 Monthly - 3
Occasionally - 4 During famine period only - 5 Others - 9

28. Reason for not buying, if rice not being bought from ration shop? ☐
High price of ration rice - 1
Inferior quality of ration rice - 2
Ration shop too far from the colony - 3
Inconvenient timing of the ration shop - 4
Quite often rice unavailable in ration shop - 5
Not interested in the ration scheme - 6
Ration card not in possession due to indebtedness - 7
More than one reason as above - 8
Any other reason - 9

29. Reason for not buying, if wheat not being bought from ration shop? ☐
High price of ration wheat - 1
Inferior quality of ration wheat - 2
Ration shop too far from the colony - 3
Inconvenient timing of the ration shop - 4
Quite often wheat unavailable in ration shop - 5
Not interested in the ration scheme - 6
Ration card not in possession due to indebtedness - 7
More than one reason as above - 8
Any other reason - 9

30. Do you get sufficient quantity of rice from ration shop required for your monthly consumption? Yes - 1 No - 2 ☐

31. Quantity of rice being provided to you from ration shop? ☐
Nil - 0 Below 5 K.G - 1
5 to 10 K.G - 2 Above 10 K.G to 15 K.G - 3
Above 15 K.G to 20 K.G. - 4 Above 20 K.G to 25 K.G. - 5
Above 25 K.G - 6 Others - 9

Exact weight ☐

32. Do you get sufficient quantity of wheat from ration shop required for your monthly consumption? Yes - 1 No - 2 ☐

33. Quantity of wheat being provided to you from ration shop? ☐

Nil - 0 Below 5 K.G - 1

5 to 10 K.G - 2 Above 10 K.G to 15 K.G - 3

Above 15 K.G to 20 K.G. - 4 Above 20 K.G to 25 K.G. - 5

Above 25 K.G - 6 Others - 9

Exact weight ☐

34. Price of rice per K.G available from ration shop? ☐

Rs. 3/- - 1

Above Rs. 3/- to Rs. 4/- - 2

Above Rs. 4/- to Rs. 5/- - 3

Above Rs. 5/- to Rs. 6/- - 4

Above Rs. 6/- to Rs. 7/- - 5

Above Rs. 7/- to Rs. 8/- - 6

Above Rs. 8/- to Rs. 9/- - 7

Above Rs. 9/- - 8

Others - 9

Exact price ☐

35. Price of wheat per K.G available from ration shop? ☐

Rs. 3/- - 1

Above Rs. 3/- to Rs. 4/- - 2

Above Rs. 4/- to Rs. 5/- - 3

Above Rs. 5/- to Rs. 6/- - 4

Above Rs. 6/- to Rs. 7/- - 5

Above Rs. 7/- to Rs. 8/- - 6

Above Rs. 8/- to Rs. 9/- - 7

Above Rs. 9/- - 8

Others - 9

Exact price ☐

36. Quantity of rice being received from own farming? ☐

Nil - 0

Quarter of the family requirement - 1

Half of the family requirement - 2

3/4th of the family requirement - 3

Full quantity required - 4

Others - 9

37. Do you buy rice from Open market for family consumption? ☐

Yes - 1 No - 2

38. If yes, quantity of rice being purchased from open market per month?

Below 5 K.G	- 1
5 to 10 K.G	- 2
Above 10 K.G to 15 K.G	- 3
Above 15 K.G to 20 K.G	- 4
Above 20 K.G to 25 K.G	- 5
Above 25 K.G	- 6
Others	- 9
Exact weight	

39. Do you buy wheat from Open market for family consumption?

Yes - 1 No - 2

40. If yes, quantity of wheat being purchased from open market per month?

Below 5 K.G	- 1
5 to 10 K.G	- 2
Above 10 K.G to 15 K.G	- 3
Above 15 K.G to 20 K.G	- 4
Above 20 K.G to 25 K.G	- 5
Above 25 K.G	- 6
Others	- 9
Exact weight	

41. Price of rice per K.G. bought from open market?

Below Rs. 8/-	- 1
Rs. 8/- to Rs. 9/-	- 2
Above Rs. 9/- to 10/-	- 3
Above Rs. 10/- to Rs. 11/-	- 4
Above Rs. 11/- to 12/-	- 5
Above Rs. 12/- to Rs. 13/-	- 6
Above Rs. 13/- to Rs. 14/-	- 7
Above Rs. 14/-	- 8
Others	- 9
Exact price	

42. Price of wheat per K.G bought from open market?

Below Rs. 6/-	- 1
Rs. 6/- to Rs. 7/-	- 2
Above Rs. 7/- to Rs. 8/-	- 3
Above Rs. 8/- to Rs. 9/-	- 4
Above Rs. 9/- to Rs. 10/-	- 5
Above Rs. 10/- to Rs. 11/-	- 6
Above Rs. 11/- to Rs. 12/-	- 7
Above Rs. 12/-	- 8
Others	- 9
Exact price	

43. Quality of ration rice?

Very Good - 1 Good - 2 Average - 3

Bad - 4 Very Bad - 5 Others - 9

44. Nutritional value of ration rice?

Very Good - 1 Good - 2 Average - 3

Bad - 4 Very Bad - 5 Others - 9

45. Quality of ration wheat? ☐

Very Good - 1	Good - 2	Average - 3
Bad - 4	Very Bad - 5	Others - 9

46. Nutritional value of ration wheat ☐

Very Good - 1	Good - 2	Average - 3
Bad - 4	Very Bad - 5	Others - 9

47. If you prefer ration rice over open market rice, the reason? ☐

Low price of ration rice	- 1
Easy accessibility of ration rice	- 2
Better quality of ration rice	- 3
Proximity of ration shop	- 4
Good behavior of ration staff	- 5
More than one reason as above	- 6
Any other reason	- 9

48. If you prefer ration wheat over open market wheat, the reason? ☐

Low price of ration wheat	- 1
Easy accessibility of ration wheat	- 2
Better quality of ration wheat	- 3
Proximity of ration shop	- 4
Good behavior of ration staff	- 5
More than one reason as above	- 6
Any other reason	- 9

49. Is ration rice cheaper than earlier? ☐

Yes - 1 No - 2

50. Difference in price of ration rice compared to olden days? ☐

Less by Rs. 4/- to Rs. 5/-	- 1
Less by Rs. 2/- to Rs. 3/-	- 2
Less by Rs. 1/-	- 3
No difference	- 4
More by Rs. 1/-	- 5
More by Rs. 2/- to Rs. 3/-	- 6
More by Rs. 4/- to Rs. 5/-	- 7
Any other	- 9

51. Is ration wheat cheaper than earlier? ☐

Yes - 1 No - 2

52. Difference in price of ration wheat compared to olden days? ☐

Less by Rs. 4/- to Rs. 5/-	- 1
Less by Rs. 2/- to Rs. 3/-	- 2
Less by Rs. 1/-	- 3
No difference	- 4
More by Rs. 1/-	- 5
More by Rs. 2/- to Rs. 3/-	- 6
More by Rs. 4/- to Rs. 5/-	- 7
Any other	- 9

53. Do you get ration rice during periods of scarcity? ☐
Yes - 1 No - 2

54. Do you get ration wheat during period of scarcity? ☐
Yes - 1 No - 2

55. How far is the ration shop from your residential colony? ☐
Below 1 kilometre - 1
1 to 2 kilometre - 2
Above 2 to 3 kilometre - 3
Above 4 to 5 kilometre - 4
Above 4 to 5 kilometre - 5
Above 5 kilometre - 6
Any other - 9
Exact distance ☐

56. Price of ration rice is reasonable ☐
Strongly agree - 1 Agree - 2
Disagree - 3 Strongly disagree - 4

57. Weight/Measure of ration rice is not accurate. ☐
Strongly agree - 1 Agree - 2
Disagree - 3 Strongly disagree - 4

58. Behavior of ration shop staff is good ☐
Strongly agree - 1 Agree - 2
Disagree - 3 Strongly disagree - 4

59. Open market rice is better than ration rice. ☐
Strongly agree - 1 Agree - 2
Disagree - 3 Strongly disagree - 4

60. Ration rice smells bad ☐
Strongly agree - 1 Agree - 2
Disagree - 3 Strongly disagree - 4

61. It takes more time to cook food using ration rice. ☐
Strongly agree - 1 Agree - 2
Disagree - 3 Strongly disagree - 4

62. Price of ration wheat is reasonable. ☐
Strongly agree - 1 Agree - 2
Disagree - 3 Strongly disagree - 4

63. Open market wheat is better than ration wheat. ☐
Strongly agree - 1 Agree - 2
Disagree - 3 Strongly disagree - 4

64. Ration wheat smells bad. ☐
Strongly agree - 1 Agree - 2
Disagree - 3 Strongly disagree - 4

65. Will you buy wheat flour, if supplied through ration shop instead of wheat? ☐
Yes - 1 No - 2

66. Will you buy more quantity of rice from the ration shop, if provided at the current price? ☐
Yes - 1 No - 2

67. Do you have any complaints about the ration scheme? ☐
Yes - 1 No - 2

68. Quantity of rice and wheat provided free of cost per month through the ration shop?

Rice ..... K.G.	Wheat ..... K.G.

69. Assessed price of items like fish, forest produce (honey, forest tuber crops, medicinal plants, firewood etc.) collected by your family free of cost? Rs.....

70. Your monthly household expenditure? (except rice and wheat)

Provision items	Rs. .....
Coconut oil	Rs. .....
Kerosene	Rs. .....
Tea	Rs. .....
Milk	Rs. .....
Vegetables	Rs. .....
Fruits	Rs. .....
Medicines	Rs. .....
Educational expenses	Rs. .....
Travel expenses	Rs. .....
Average expenditure for clothing	Rs. .....
Miscellaneous expenditure for soap, matches etc.	Rs. .....
Expense for maintaining a Television	Rs. .....
Electricity charges	Rs. .....
Any other (Smoking, drinking etc.)	Rs. .....
Total	**Rs. .....**

71. Briefly state complaints, if any, about the ration scheme:

(i)

(ii)

(iii)

Household Survey Schedule - Malayalam

ഗവേഷണ ഉപയോഗത്തിനുമാത്രം

വിഷയം : പൊതുവിതരണപദ്ധതിയുടെ ലക്ഷ്യപ്രാപ്തി - ഇടുക്കി, പാലക്കാട്, വയനാട് ജില്ലകളിലെ ആദിവാസി സമൂഹത്തിൽ - ഒരു പഠനം

നിർദ്ദേശങ്ങൾ : മിക്ക ചോദ്യങ്ങൾക്കുമുള്ള സാധ്യതാ ഉത്തരങ്ങളും അവയ്ക്ക് ഓരോ കോഡും (1 മുതൽ 9 വരെ) ഉത്തരങ്ങളോടൊപ്പം നൽകിയിട്ടുണ്ട്. ലഭിക്കുന്ന ഉത്തരത്തിന്റെ കോഡ് വലതുവശത്തുള്ള കോളത്തിൽ രേഖപ്പെടുത്തുക.

വിവരശേഖരണപത്രിക

1. ട്രൈബൽ കോളനിയുടെ പേര്

2. ഗ്രാമത്തിന്റെ/വില്ലേജിന്റെ പേര്

3. ജില്ലയുടെപേര്: ഇടുക്കി - 1 പാലക്കാട് - 3 വയനാട് - 3

4. വിവരങ്ങൾ നൽകുന്ന വ്യക്തിയുടെ പേര്

5. റേഷൻകാർഡ് ഉണ്ടോ: ഉണ്ട് - 1 ഇല്ല - 2

6. ബി.പി.എൽ. ആണോ / എ.പി.എൽ. ആണോ? ബി.പി.എൽ. - 1 എ.പി.എൽ. - 2

7. റേഷൻകാർഡിന്റെ നമ്പർ

8. കുടുംബത്തിന് റേഷൻകാർഡ് ഇല്ലെങ്കിൽ, അതിനുള്ള കാരണം?
അപേക്ഷിച്ചിട്ടില്ല - 1 അപേക്ഷിച്ചെങ്കിലും അനുവദിച്ചിട്ടില്ല - 2
താൽപ്പര്യമില്ല - 3 റേഷൻപദ്ധതി പ്രയോജനപ്രദമല്ല - 4
റേഷൻപദ്ധതിയെക്കുറിച്ച് അറിയില്ല - 5 മറ്റേതെങ്കിലും കാരണം - 9

9. വർഗ്ഗം അഥവാ ഗോത്രം ഏതാണ്?

10. കുടുംബത്തെക്കുറിച്ചുള്ള വിവരങ്ങൾ: (ഗൃഹനാഥൻ/ഗൃഹനാഥ ഉൾപ്പെടെ)

ക്രമ നമ്പർ	പേര് (ചുരുക്കത്തിൽ)	പുരുഷൻ/ സ്ത്രീ	വയസ്സ്	വിദ്യാഭ്യാസം (കോഡ്)	തൊഴിൽ (കോഡ്)	മാസ-വരുമാനം	ആരോഗ്യസ്ഥിതി (കോഡ്)

* വിദ്യാഭ്യാസം, തൊഴിൽ, ആരോഗ്യസ്ഥിതി എന്നിവയുടെ കോളത്തിൽ കോഡ് രേഖപ്പെടുത്തുക

*** വിദ്യാഭ്യാസം**
വിദ്യാഭ്യാസമില്ല - 0 അഞ്ചാംക്ലാസ്സിനുതാഴെ - 1
അഞ്ചാംക്ലാസ്സ് മുതൽ എട്ടാം ക്ലാസ്സ് വരെ - 2 മറ്റെന്തെങ്കിലും ഉത്തരം - 9

*** തൊഴിൽ**
ഒരു തൊഴിലുമില്ല - 0 കൂലിപ്പണി - 1 കൃഷിപ്പണി - 2 മീൻപിടുത്തം - 3
വനവിഭവങ്ങൾ ശേഖരണം - 4 വീട്ടിലെ ജോലികൾ മാത്രം - 5
സർക്കാർ/സ്ഥിരവരുമാനജോലി - 6 മറ്റുള്ളവ - 9

*** ആരോഗ്യസ്ഥിതി**
നല്ല ആരോഗ്യം - 1 ശരാശരി ആരോഗ്യം - 2 ചെറിയ രോഗങ്ങളുണ്ട് - 3
ആരോഗ്യം വളരെ മോശം - 4 മറ്റെന്തെങ്കിലും - 9

11. കുടുംബത്തിന്റെ മറ്റുവരുമാനങ്ങൾ ..... രൂപ (പ്രതിമാസം

(കൃഷി, പശു, കോഴി, പെൻഷൻ തുടങ്ങിയവയിൽ നിന്നുള്ളവ)

12. ഏതുതരം വീട്ടിൽ താമസിക്കുന്നു
ഈറ്റമേഞ്ഞ വീട് - 1 ഓലമേഞ്ഞ വീട് - 2 ഓട്മേഞ്ഞ വീട് - 3
ആസ്ബസ്റ്റോസ് ഇട്ട വീട് - 4 ചെറിയ ടെറസ്സ് വീട് - 5 മറ്റുള്ളവ - 9

13. കൈവശഭൂമിയുടെ വിസ്തീർണ്ണം
50 സെന്റിൽ താഴെ - 1 50-സെന്റ് മുതൽ 100 സെന്റ് വരെ - 2
101-സെന്റ് മുതൽ 200-സെന്റ് വരെ - 3 201-സെന്റ് മുതൽ 300-സെന്റ് വരെ - 4
300-സെന്റിൽ കൂടുതൽ - 5 മേൽപ്പറഞ്ഞതിൽപ്പെടാത്തവ - 9

14. എത്ര സെന്റ് ഭൂമി കൃഷി ചെയ്യുന്നു
കൃഷി ചെയ്യുന്നില്ല - 0 ലഭ്യമായ ഭൂമിയുടെ കാൽഭാഗം കൃഷി ചെയ്യുന്നു - 1
ലഭ്യമായ ഭൂമിയുടെ പകുതിഭാഗം - 2 ലഭ്യമായ ഭൂമിയുടെ മുക്കാൽഭാഗം - 3
മുഴുവൻ - 4 മറ്റെന്തെങ്കിലും - 9

15. സാധാരണ ഭക്ഷണത്തിന് ഉപയോഗിക്കുന്ന ധാന്യം
അരി - 1 ഗോതമ്പ് - 2 മറ്റുള്ളവ - 9

16. ഒരു ദിവസം എത്രതവണ അരി ഉപയോഗിച്ചുള്ള ആഹാരം കഴിക്കാറുണ്ട്?
അരിയാഹാരം കഴിക്കാറില്ല - 0 ഒരുപ്രാവശ്യം - 1 രണ്ട് പ്രാവശ്യം - 2
മൂന്ന് പ്രാവശ്യം - 3 നാല് പ്രാവശ്യം - 4 മറ്റെന്തെങ്കിലും ഉത്തരം - 9

17. ഒരു ദിവസം എത്ര തവണ ഗോതമ്പ് ഉപയോഗിച്ചുള്ള ആഹാരം കഴിക്കാറുണ്ട്?
ഗോതമ്പാഹാരം കഴിക്കാറില്ല - 0 ഒരു പ്രാവശ്യം - 1 രണ്ട് പ്രാവശ്യം - 2
മൂന്ന് പ്രാവശ്യം - 3 നാല് പ്രാവശ്യം - 4 മറ്റെന്തെങ്കിലും ഉത്തരം - 9

18. മറ്റേതെങ്കിലും ധാന്യം ഉപയോഗിച്ച് എത്രതവണ ആഹാരം കഴിക്കാറുണ്ട്?
മറ്റ് ധാന്യങ്ങൾ ഉപയോഗിച്ചുള്ള ആഹാരം കഴിക്കാറില്ല - 0 ഒരുതവണ - 1
രണ്ട് തവണ - 2 മൂന്ന് തവണ - 3 നാല് തവണ - 4 മറ്റെന്തെങ്കിലും ഉത്തരം - 9

19. ഒരു ദിവസം ഉപയോഗിക്കുന്ന അരിയുടെ അളവ്/തൂക്കം
250-ഗ്രാമിൽ താഴെ - 1 250-ഗ്രാം മുതൽ 500-ഗ്രാം വരെ - 2
500-ഗ്രാമിനു മുകളിൽ 1 കിലോഗ്രാംവരെ - 3 1 കിലോയിൽ കൂടുതൽ - 4
മറ്റേതെങ്കിലും - 9
കൃത്യമായ തൂക്കം

20. ഒരു ദിവസം ഉപയോഗിക്കുന്ന ഗോതമ്പിന്റെ അളവ്/തൂക്കം
250 ഗ്രാമിൽ താഴെ - 1 250-ഗ്രാം മുതൽ 500-ഗ്രാം വരെ - 2
500-ഗ്രാമിനു മുകളിൽ 1 കിലോഗ്രാംവരെ - 3 1 കിലോയിൽ കൂടുതൽ - 4
മറ്റേതെങ്കിലും - 9
കൃത്യമായ തൂക്കം

21. ഒരു മാസം വാങ്ങുന്ന അരിയുടെ അളവ്/തൂക്കം
10 കിലോയിൽ താഴെ - 1 10 കിലോ മുതൽ 20 കിലോ വരെ - 2
20 കിലോയ്ക്ക് മുകളിൽ 30 കിലോ വരെ - 3 30 കിലോയിൽ കൂടുതൽ - 4
മറ്റുള്ളവ - 9
കൃത്യമായ തൂക്കം

22. ഒരുമാസം വാങ്ങുന്ന ഗോതമ്പിന്റെ അളവ്/തൂക്കം
10 കിലോയിൽ താഴെ - 1 10 കിലോ മുതൽ 20 കിലോ വരെ - 2
20 കിലോയ്ക്ക് മുകളിൽ 30 കിലോ വരെ - 3 30 കിലോയിൽ കൂടുതൽ- 4
മറ്റുള്ളവ - 9
കൃത്യമായ തൂക്കം

23. റേഷൻ കടയിൽ നിന്ന് അരിവാങ്ങാറുണ്ടോ? ☐
ഉണ്ട് - 1 ഇല്ല - 2

24. ആരാണ് റേഷൻ ധാന്യങ്ങൾ വാങ്ങാൻ പോകാറുള്ളത്? ☐
ഭാര്യ - 1 ഭർത്താവ് - 2 മകൻ - 3 മകൾ - 4 മറ്റാരെങ്കിലും - 9

25. വാങ്ങാറുണ്ടെങ്കിൽ എത്രകാലത്തിലൊരിക്കൽ വാങ്ങാറുണ്ട്? ☐
ആഴ്ചയിലൊരിക്കൽ - 1 രണ്ടാഴ്ചയിലൊരിക്കൽ - 2 മാസത്തിലൊരിക്കൽ - 3
വല്ലപ്പോഴും - 4 ക്ഷാമകാലത്ത് മാത്രം - 5 മറ്റുള്ളവ - 9

26. റേഷൻകടയിൽനിന്ന് ഗോതമ്പ് വാങ്ങാറുണ്ടോ? ☐
ഉണ്ട് - 1 ഇല്ല - 2

27. വാങ്ങാറുണ്ടെങ്കിൽ എത്രകാലത്തിലൊരിക്കൽ വാങ്ങാറുണ്ട് ☐
ആഴ്ചയിലൊരിക്കൽ - 1 രണ്ടാഴ്ചയിലൊരിക്കൽ - 2 മാസത്തിലൊരിക്കൽ - 3
വല്ലപ്പോഴും - 4 ക്ഷാമകാലത്തുമാത്രം - 5 മറ്റുള്ളവ - 9

28. റേഷൻകടയിൽനിന്ന് അരിവാങ്ങാറില്ലെങ്കിൽ അതിനുള്ള കാരണം? ☐
റേഷനരിയുടെ വില കൂടുതൽ - 1
റേഷനരിയുടെ ഗുണനിലവാരം മോശമാണ് - 2
റേഷൻകട കോളനിയിൽനിന്ന്
വളരെ ദൂരെ ആയതിനാൽ - 3
റേഷൻകട പ്രവർത്തിക്കുന്നസമയം സൗകര്യപ്രദമല്ല - 4
പലപ്പോഴും യഥാസമയം അരി ലഭ്യമല്ല - 5
റേഷൻപദ്ധതിയെപ്പറ്റി താൽപ്പര്യമില്ല - 6
റേഷൻകാർഡ് ജാമ്യമായോ പണയമായോ
മറ്റാരുടെയെങ്കിലും കൈവശമാണ് - 7
മേൽപ്പറഞ്ഞവയിൽ ഒന്നിൽകൂടുതൽ കാരണങ്ങൾ - 8
മറ്റെന്തെങ്കിലും കാരണം - 9

29. റേഷൻകടയിൽനിന്ന് ഗോതമ്പ് വാങ്ങാറില്ലെങ്കിൽ അതിനുള്ള കാരണം? ☐
റേഷൻ ഗോതമ്പിന്റെ വില കൂടുതൽ - 1
റേഷൻ ഗോതമ്പിന്റെ ഗുണനിലവാരം മോശമാണ് - 2
റേഷൻകട കോളനിയിൽനിന്ന്
വളരെ ദൂരെ ആയതിനാൽ - 3
റേഷൻകട പ്രവർത്തിക്കുന്നസമയം സൗകര്യപ്രദമല്ല - 4
പലപ്പോഴും യഥാസമയം ഗോതമ്പ് ലഭ്യമല്ല - 5
റേഷൻപദ്ധതിയെപ്പറ്റി താൽപ്പര്യമില്ല - 6
മേൽപ്പറഞ്ഞവയിൽ ഒന്നിൽകൂടുതൽ കാരണങ്ങൾ - 7
മറ്റെന്തെങ്കിലും കാരണം - 9

30. ഒരുമാസത്തേക്ക് ആവശ്യമുള്ളത്ര അരി റേഷൻകടയിൽനിന്ന് ലഭിക്കാറുണ്ടോ? ☐
ഉണ്ട് - 1 ഇല്ല - 2

31. ഓരോമാസവും എത്രകിലോഗ്രാം അരി റേഷൻകടയിൽനിന്ന് ലഭിക്കാറുണ്ട്? ☐
ലഭിക്കാറേയില്ല - 0
5 കിലോഗ്രാമിൽ താഴെ - 1
5-കിലോ മുതൽ 10 കിലോ വരെ - 2
10-കിലോയ്ക്ക് മുകളിൽ 15 കിലോഗ്രാം വരെ - 3
15-കിലോയ്ക്ക് മുകളിൽ 20 കിലോഗ്രാം വരെ - 4
20-കിലോയ്ക്ക് മുകളിൽ 25 കിലോഗ്രാം വരെ - 5
25 കിലോഗ്രാമിന് മുകളിൽ - 6
മറ്റുള്ളവ - 9
കൃത്യമായ തൂക്കം ☐

32. ഓരോ മാസവും ആവശ്യമുള്ളത്ര ഗോതമ്പ്, റേഷൻകടയിൽ നിന്ന് ലഭിക്കാറുണ്ടോ? ☐

ഉണ്ട് - 1 ഇല്ല - 2

33. ഓരോമാസവും എത്ര കിലോഗ്രാം ഗോതമ്പ് റേഷൻകടയിൽനിന്ന് ലഭിക്കാറുണ്ട്? ☐

ലഭിക്കാറേയില്ല	- 0
5 കിലോഗ്രാമിൽ താഴെ	- 1
5-കിലോ മുതൽ 10 കിലോഗ്രാം വരെ	- 2
10-കിലോയ്ക്കു മുകളിൽ 15 കിലോഗ്രം വരെ	- 3
15-കിലോയ്ക്കു മുകളിൽ 20 കിലോഗ്രം വരെ	- 4
20-കിലോയ്ക്കു മുകളിൽ 25 കിലോഗ്രം വരെ	- 5
25 കിലോഗ്രാമിന് മുകളിൽ	- 6
മറ്റുള്ളവ	- 9
കൃത്യമായ തൂക്കം	

34. റേഷൻകടയിൽ നിന്ന് ലഭിക്കുന്ന അരിയുടെ വില (ഒരു കിലോഗ്രാമിന്) ☐

3 രൂപ	- 1
3-രൂപയ്ക്കുമുകളിൽ 4-രൂപ വരെ	- 2
4-രൂപയ്ക്കുമുകളിൽ 5-രൂപ വരെ	- 3
5-രൂപയ്ക്കുമുകളിൽ 6-രൂപ വരെ	- 4
6-രൂപയ്ക്കുമുകളിൽ 7-രൂപ വരെ	- 5
7-രൂപയ്ക്കുമുകളിൽ 8-രൂപ വരെ	- 6
8-രൂപയ്ക്കുമുകളിൽ 9-രൂപ വരെ	- 7
9-രൂപയ്ക്കുമുകളിൽ	- 8
മറ്റുള്ളവ	- 9
കൃത്യമായ വില	

35. റേഷൻകടയിൽനിന്ന് ലഭിക്കുന്ന ഗോതമ്പിന്റെ വില (ഒരു കിലോഗ്രാമിന്) ☐

3 രൂപ	- 1
3-രൂപയ്ക്കുമുകളിൽ 4-രൂപ വരെ	- 2
4-രൂപയ്ക്കുമുകളിൽ 5-രൂപ വരെ	- 3
5-രൂപയ്ക്കുമുകളിൽ 6-രൂപ വരെ	- 4
6-രൂപയ്ക്കുമുകളിൽ 7-രൂപ വരെ	- 5
7-രൂപയ്ക്കുമുകളിൽ 8-രൂപ വരെ	- 6
8-രൂപയ്ക്കുമുകളിൽ 9-രൂപ വരെ	- 7
9-രൂപയ്ക്കുമുകളിൽ	- 8
മറ്റുള്ളവ	- 9
കൃത്യമായ വില	

36. കുടുംബത്തിന്റെ ആവശ്യത്തിനായി സ്വന്തം കൃഷിയിൽനിന്ന് എത്ര അരി ലഭിക്കാറുണ്ട്? ☐

ലഭിക്കാറേയില്ല	- 0
ആവശ്യത്തിന്റെ കാൽഭാഗം	- 1
ആവശ്യത്തിന്റെ പകുതി	- 2
ആവശ്യത്തിന്റെ മുക്കാൽഭാഗം	- 3
ആവശ്യത്തിന് മുഴുവൻ	- 4
മറ്റുള്ളവ	- 9

37. കുടുംബത്തിന്റെ ഉപയോഗത്തിനായി പൊതുവിപണിയിൽനിന്ന് അരി വാങ്ങാറുണ്ടോ? ☐

ഉണ്ട് - 1 ഇല്ല - 2

38. വാങ്ങാറുണ്ടെങ്കിൽ പ്രതിമാസം എത്രകിലോഗ്രാം അരി പൊതുവിപണിയിൽ നിന്ന് വാങ്ങാറുണ്ട്

5 കിലോഗ്രാമിൽ താഴെ	- 1
5 കിലോഗ്രാം മുതൽ 10 കിലോഗ്രാം വരെ	- 2
10-കിലോയ്ക്കുമുകളിൽ 15-കിലോ വരെ	- 3
15-കിലോയ്ക്കുമുകളിൽ 20-കിലോ വരെ	- 4
20-കിലോയ്ക്കുമുകളിൽ 25-കിലോ വരെ	- 5
25-കിലോഗ്രാമിൽ കൂടുതൽ	- 6
മറ്റുള്ളവ	- 9
കൃത്യമായ തൂക്കം	

39. പൊതുവിപണിയിൽനിന്ന് ഗോതമ്പ് വാങ്ങാറുണ്ടോ?

ഉണ്ട് - 1 ഇല്ല - 2

40. പ്രതിമാസം എത്രകിലോഗ്രാം ഗോതമ്പ് പൊതുവിപണിയിൽനിന്ന് വാങ്ങാറുണ്ട്?

5 കിലോഗ്രാമിൽ താഴെ	- 1
5 കിലോഗ്രാം മുതൽ 10 കിലോഗ്രാം വരെ	- 2
10-കിലോയ്ക്കുമുകളിൽ 15-കിലോ വരെ	- 3
15-കിലോയ്ക്കുമുകളിൽ 20-കിലോ വരെ	- 4
20-കിലോയ്ക്കുമുകളിൽ 25-കിലോ വരെ	- 5
25-കിലോഗ്രാമിൽ കൂടുതൽ	- 6
മറ്റുള്ളവ	- 9
കൃത്യമായ തൂക്കം	

41. പൊതുവിപണിയിൽനിന്ന് വാങ്ങുന്ന അരിയുടെ വില (ഒരു കിലോഗ്രാമിന്)

8 രൂപയിൽ താഴെ	- 1
8-രൂപ മുതൽ 9-രൂപ വരെ	- 2
9-രൂപക്കു മുകളിൽ 10-രൂപ വരെ	- 3
10-രൂപക്കു മുകളിൽ 11-രൂപ വരെ	- 4
11-രൂപക്കു മുകളിൽ 12-രൂപ വരെ	- 5
12-രൂപക്കു മുകളിൽ 13-രൂപ വരെ	- 6
13-രൂപക്കു മുകളിൽ 14-രൂപ വരെ	- 7
14-രൂപക്കു മുകളിൽ	- 8
മറ്റുള്ളവ	- 9
കൃത്യമായ വില	

42. പൊതുവിപണിയിൽനിന്ന് വാങ്ങുന്ന ഗോതമ്പിന്റെ വില (ഒരു കിലോഗ്രാമിന്)

6 രൂപയിൽ താഴെ	- 1
6-രൂപക്കു മുകളിൽ 7-രൂപ വരെ	- 2
7-രൂപക്കു മുകളിൽ 8-രൂപ വരെ	- 3
8-രൂപക്കു മുകളിൽ 9-രൂപ വരെ	- 4
9-രൂപക്കു മുകളിൽ 10-രൂപ വരെ	- 5
10-രൂപക്കു മുകളിൽ 11-രൂപ വരെ	- 6
11-രൂപക്കു മുകളിൽ 12-രൂപ വരെ	- 7
12-രൂപക്കു മുകളിൽ	- 8
മറ്റുള്ളവ	- 9
കൃത്യമായ വില	

43. റേഷനരിയുടെ ഗുണനിലവാരം?

വളരെ നല്ലത് - 1 നല്ലത് - 2 ശരാശരി - 3 മോശം - 4 വളരെ മോശം - 5 മറ്റുള്ളവ - 9

44. റേഷനരിയുടെ പോഷകഗുണം?

വളരെ നല്ലത് - 1 നല്ലത് - 2 ശരാശരി - 3 മോശം - 4 വളരെ മോശം - 5 മറ്റുള്ളവ - 9

45. റേഷൻ ഗോതമ്പിന്റെ ഗുണനിലവാരം

വളരെ നല്ലത് - 1 നല്ലത് - 2 ശരാശരി - 3 മോശം - 4 വളരെ മോശം - 5 മറ്റുള്ളവ - 9

46. റേഷൻ ഗോതമ്പിന്റെ പോഷകഗുണം

വളരെ നല്ലത് - 1 നല്ലത് - 2 ശരാശരി - 3 മോശം - 4 വളരെ മോശം - 5 മറ്റുള്ളവ - 9

47. പൊതുവിപണിയിൽനിന്ന് ലഭിക്കുന്ന അരിയേക്കാൾ റേഷനരിക്ക് മുൻഗണന നൽകുന്നുണ്ടെങ്കിൽ അതിനുള്ള കാരണം?

റേഷനരിയുടെ വിലക്കുറവ്	- 1
ബുദ്ധിമുട്ടില്ലാതെ റേഷനരി ലഭിക്കുന്നു	- 2
റേഷനരിയുടെ ഗുണനിലവാരം മെച്ചമായതുകൊണ്ട്	- 3
റേഷൻകട വളരെ അടുത്തായതുകൊണ്ട്	- 4
റേഷൻകടയിലെ സ്റ്റാഫിന്റെ നല്ല പെരുമാറ്റംകൊണ്ട്	- 5
മേൽപ്പറഞ്ഞവയിൽ ഒന്നിൽ കൂടുതൽ കാരണങ്ങൾകൊണ്ട്	- 6
മറ്റുള്ളവ	- 9

48. റേഷൻഗോതമ്പിന് പൊതുവിപണിയിൽ നിന്ന് ലഭിക്കുന്ന ഗോതമ്പിനേക്കാൾ മുൻഗണന നൽകുന്നുണ്ടെങ്കിൽ അതിനുള്ള കാരണം

റേഷൻ ഗോതമ്പിന്റെ വിലക്കുറവ്	- 1
ബുദ്ധിമുട്ടില്ലാതെ റേഷൻ ഗോതമ്പ് ലഭിക്കുന്നു	- 2
റേഷൻ ഗോതമ്പിന്റെ ഗുണനിലവാരം മെച്ചമായതുകൊണ്ട്	- 3
റേഷൻകട വളരെ അടുത്തായതുകൊണ്ട്	- 4
റേഷൻകടയിലെ സ്റ്റാഫിന്റെ നല്ല പെരുമാറ്റംകൊണ്ട്	- 5
മേൽപ്പറഞ്ഞവയിൽ ഒന്നിൽ കൂടുതൽ കാരണങ്ങൾകൊണ്ട്	- 6
മറ്റുള്ളവ	- 9

49. റേഷനരിയുടെ വില മുൻകാലങ്ങളിലേക്കാൾ കുറവാണോ?

അതെ - 1 അല്ല - 2

50. റേഷനരിക്ക് മുൻകാലങ്ങളിലെ വിലയുമായുള്ള വ്യത്യാസം?

4 രൂപ മുതൽ 5 രൂപവരെ കുറവാണ്	- 1
3 രൂപ മുതൽ 2 രൂപവരെ കുറവാണ്	- 2
1 രൂപ കുറവാണ്	- 3
വ്യത്യാസമില്ല	- 4
1 രൂപ കൂടുതലാണ്	- 5
2 രൂപ മുതൽ 3 രൂപവരെ കൂടുതലാണ്	- 6
4 രൂപ മുതൽ 5 രൂപവരെ കൂടുതലാണ്	- 7
മറ്റുള്ളവ	- 9

51. റേഷൻഗോതമ്പിന്റെ വില മുൻകാലങ്ങളിലേക്കാൾ കുറവാണോ?

അതെ - 1 അല്ല - 2

52. റേഷൻഗോതമ്പിന് മുൻകാലങ്ങളിലെ വിലയുമായുള്ള വ്യത്യാസം

4 രൂപ മുതൽ 5 രൂപവരെ കുറവാണ്	- 1
3 രൂപ മുതൽ 2 രൂപവരെ കുറവാണ്	- 2
1 രൂപ കുറവാണ്	- 3
വ്യത്യാസമില്ല	- 4
1 രൂപ കൂടുതലാണ്	- 5
2 രൂപ മുതൽ 3 രൂപവരെ കൂടുതലാണ്	- 6
4 രൂപ മുതൽ 5 രൂപവരെ കൂടുതലാണ്	- 7
മറ്റുള്ളവ	- 9

53. റേഷനരി ക്ഷാമകാലങ്ങളിൽ ലഭിക്കാറുണ്ടോ? ☐
ഉണ്ട് - 1 ഇല്ല - 2

54. റേഷൻഗോതമ്പ് ക്ഷാമകാലങ്ങളിൽ ലഭിക്കാറുണ്ടോ ☐
ഉണ്ട് - 1 ഇല്ല - 2

55. റേഷൻകട കോളനിയിൽനിന്ന് എത്ര ദൂരെയാണ്? ☐
1 കിലോമീറ്ററിൽ താഴെ - 1
ഒരു കിലോമീറ്റർ മുതൽ 2 കിലോമീറ്റർ വരെ - 2
2 കിലോമീറ്ററിനു മുകളിൽ 3 കിലോമീറ്റർ വരെ - 3
3 കിലോമീറ്ററിനു മുകളിൽ 4 കിലോമീറ്റർ വരെ - 4
4 കിലോമീറ്ററിനു മുകളിൽ 5 കിലോമീറ്റർ വരെ - 5
5 കിലോമീറ്ററിൽ കൂടുതൽ - 6
മറ്റുള്ളവ - 9
കൃത്യമായ ദൂരം ☐

56. റേഷനരിയുടെ വില ന്യായമാണ്? ☐
വളരെ യോജിക്കുന്നു - 1 യോജിക്കുന്നു - 2
യോജിക്കുന്നില്ല - 3 ഒട്ടും യോജിക്കുന്നില്ല - 4

57. റേഷനരിയുടെ അളവും തൂക്കവും കൃത്യമല്ല. ☐
വളരെ യോജിക്കുന്നു - 1 യോജിക്കുന്നു - 2
യോജിക്കുന്നില്ല - 3 ഒട്ടും യോജിക്കുന്നില്ല - 4

58. റേഷൻ കടയിലെ സ്റ്റാഫിന്റെ പെരുമറ്റം നല്ലതാണ്: ☐
വളരെ യോജിക്കുന്നു - 1 യോജിക്കുന്നു - 2
യോജിക്കുന്നില്ല - 3 ഒട്ടും യോജിക്കുന്നില്ല - 4

59. പൊതുവിപണിയിലെ അരി റേഷനരിയേക്കാൾ മെച്ചമാണ് ☐
വളരെ യോജിക്കുന്നു - 1 യോജിക്കുന്നു - 2
യോജിക്കുന്നില്ല - 3 ഒട്ടും യോജിക്കുന്നില്ല - 4

60. റേഷനരിക്ക് ദുർഗന്ധമുണ്ട്: ☐
വളരെ യോജിക്കുന്നു - 1 യോജിക്കുന്നു - 2
യോജിക്കുന്നില്ല - 3 ഒട്ടും യോജിക്കുന്നില്ല - 4

61. റേഷനരിവേകാൻ അധികസമയം വേണം: ☐
വളരെ യോജിക്കുന്നു - 1 യോജിക്കുന്നു - 2
യോജിക്കുന്നില്ല - 3 ഒട്ടും യോജിക്കുന്നില്ല - 4

62. റേഷൻ ഗോതമ്പിന്റെ വില ന്യായമാണ്: ☐
വളരെ യോജിക്കുന്നു - 1 യോജിക്കുന്നു - 2
യോജിക്കുന്നില്ല - 3 ഒട്ടും യോജിക്കുന്നില്ല - 4

63. പൊതുവിപണിയിലെ ഗോതമ്പ് റേഷൻ ഗോതമ്പിനേക്കാൾ മെച്ചമാണ് ☐
വളരെ യോജിക്കുന്നു - 1 യോജിക്കുന്നു - 2
യോജിക്കുന്നില്ല - 3 ഒട്ടും യോജിക്കുന്നില്ല - 4

64. റേഷൻ ഗോതമ്പിന് ദുർഗന്ധമുണ്ട് ☐
വളരെ യോജിക്കുന്നു - 1 യോജിക്കുന്നു - 2
യോജിക്കുന്നില്ല - 3 ഒട്ടും യോജിക്കുന്നില്ല - 4

T358

65. റേഷൻ ഗോതമ്പിന് പകരം ഗോതമ്പ് പൊടി റേഷൻകട വഴി നൽകിയാൽ താങ്കൾ വാങ്ങുമോ? ☐

വാങ്ങും - 1 ഇല്ല - 2

---

66. ഇപ്പോഴത്തെവിലയിൽ, കൂടുതൽറേഷനരി നൽകിയാൽ താങ്കൾ വാങ്ങുമോ? ☐

വാങ്ങും - 1 ഇല്ല - 2

---

67. റേഷൻ പദ്ധതിയെക്കുറിച്ച് എന്തെങ്കിലും പരാതികൾ ഉണ്ടോ? ☐

ഉണ്ട് - 1 ഇല്ല - 2

---

68. പ്രതിമാസം സൗജന്യമായി ലഭിക്കുന്ന റേഷനരി, റേഷൻ ഗോതമ്പ് എന്നിവയുടെ അളവ്?

അരി ..... കിലോ | ഗോതമ്പ് ..... കിലോ

---

69. വില നൽകാതെ ലഭ്യമാകുന്ന മത്സ്യം, വനവിഭവങ്ങൾ (തേൻ, കാട്ടുകിഴങ്ങ്, പച്ചമരുന്നുകൾ, വിറക് തുടങ്ങിയവ) എന്നിവയുടെ കണക്കാക്കാവുന്ന വില ..... രൂപ

---

70. കുടുംബത്തിന്റെ പ്രതിമാസ ചെലവ് (അരിയും ഗോതമ്പും ഒഴികെ മറ്റ് ചെലവുകൾ)

പലവ്യഞ്ജന സാധനങ്ങൾ	..... രൂപ
വെളിച്ചെണ്ണ	..... രൂപ
മണ്ണെണ്ണ	..... രൂപ
തേയില	..... രൂപ
പാൽ	..... രൂപ
പച്ചക്കറി	..... രൂപ
പഴവർഗ്ഗങ്ങൾ	..... രൂപ
മരുന്നുകൾ	..... രൂപ
കുട്ടികളുടെ വിദ്യാഭ്യാസച്ചെലവ്	..... രൂപ
യാത്രച്ചെലവ്	..... രൂപ
വസ്ത്രങ്ങൾ വാങ്ങുന്നതിനുള്ള ശരാശരി ചെലവ്	..... രൂപ
സോപ്പ്, തീപ്പെട്ടി തുടങ്ങിയ ചില്ലറ ചെലവുകൾ	..... രൂപ
ടി.വി.യ്ക്കുള്ള ചെലവുകൾ	..... രൂപ
കറന്റ് ചാർജ്	..... രൂപ
മറ്റെന്തെങ്കിലും (പുകവലി, മദ്യപാനം തുടങ്ങിയവ)	..... രൂപ
ആകെ	..... **രൂപ**

---

71. പരാതികൾ ഉണ്ടെങ്കിൽ ചുരുക്കിപ്പറയുക

(i)

(ii)

(iii)