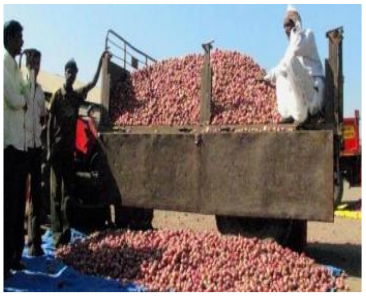
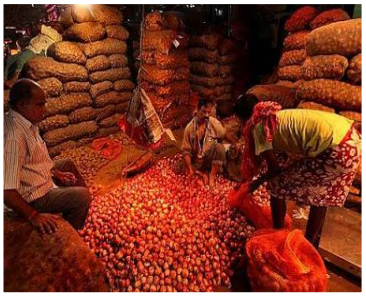
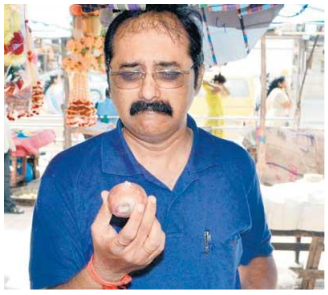
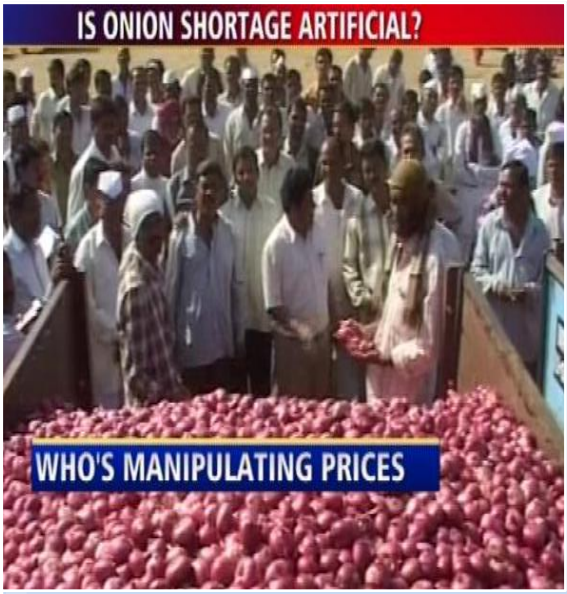
Competition Commission of India

2012

# Competitive Assessment of Onion Markets in India

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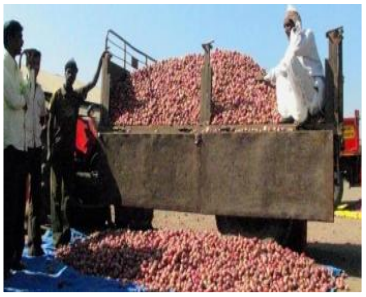

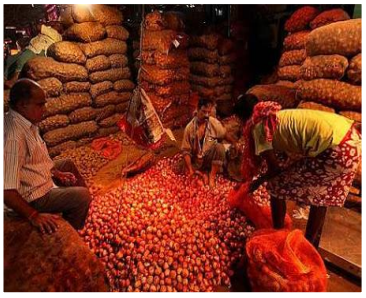
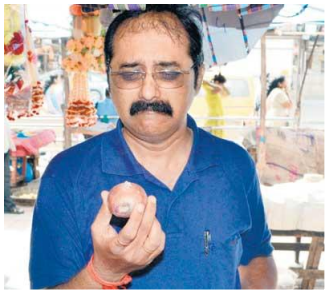
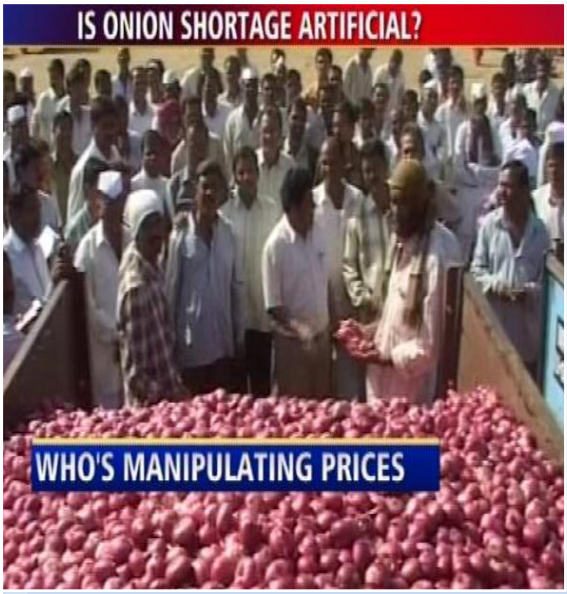


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# Competitive Assessment of Onion Markets in India

(Report Prepared for Competition Commission of India, Government of India)

P G Chengappa
A V Manjunatha
Vikas Dimble
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2012

# PREFACE

Onion is one of the most market sensitive commodities that creates ripples in the trade as also political circles. Its significant position in the diets across all income groups and an important ingredient in many Indian recipe causes wide ranging effects of any significant price change. It is equally important for the poor as also the middle class. Thus the changes in prices causes all-embracing stir among farmers and consumers. High price variability in case of primary products affects both producers as well as consumers through a spillover effect to the other sectors, thereby leading to high inflation in the economy. Thus it is major concern for the politicians, policy makers and experts.

Among the agricultural products, prices of onions are more volatile than those of the non-farm commodities due to low price and income elasticity and inherently unstable production. Additionally, market inefficiencies, weak supply chains and traders cartels in the market aggravate the problem. The spurt in food inflation in the recent months has brought to forefront some critical issues of price volatility and market inefficiency. The Inter-Ministerial Group (IMG) on Inflation advised *improving agricultural productivity*, *strengthening food supply chains* as a *durable solution to inflation in an economy with rising income levels.* Also there is an emphasis on modified Agricultural Produce Marketing Act and initiate other steps to weed out market imperfections. Onion is one such commodity which suffers at the threshold of the market and creates economic stress.

The study was conceived in a discussion at the CCI and Dr Gita Gauri and further took shape in the discussions that we had with the academicians, market functionaries and farmers. The study has examined competitiveness in the onion markets in Central India. Secondary and primary data were collected from all the actors involved in the onion supply chain located in five major onion markets in Karnataka and six major onion markets in Maharashtra. Primary survey was carried out in these 11 markets, from farmers, retailers and wholesale traders and other market functionaries. The primary survey has been used to find out structure and conduct of onion markets and for assessing the competitiveness of onion markets in India. Secondary data provided the historical and recent trends of onion production, area under onion cultivation and yield of the onion. The same has also been used to find the seasonality of onion arrivals and prices in the major markets, and wholesale and retail prices of the onion in major markets. The study covered states of Maharashtra and Karnataka as two prominent onion growing states. The results indicate clear imperfections in the onion markets and presence of interested cartels.

I am happy in writing these few words of introducing the study to the readers and hopeful that the results will be useful to CCI.

R S Deshpande
Director
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# Acknowledgements

We are thankful to ….

| | |
|---|---|
| Competition of Commission of India…… New Delhi | For sponsoring the study. |
| Dr. Geeta Gouri..... Member, Competition of Commission of India, New Delhi | For giving us opportunity to undertake this study and for all the encouragements and help rendered to us. |
| Prof. R S Deshpande..... Director, Institute for Social and Economic Change, Bangalore | For providing constant support and feedbacks on the study from initial stage to the finalisation of report. We also thank him for spearheading the work and without his prodding this study could not have been completed. |
| Dr. Payal Malik…… Advisor (Eco) Competition Commission of India, New Delhi | For her excellent comments and suggestions on the draft report. |
| Dr. Anil Kumar Sharma..... Assistant Director, Competition Commission of India, New Delhi | For his excellent comments and suggestions on the draft report. We also profusely thank him for full coordination and continued administrative support provided during the study. |
| Mr. D. Subrahmanyam..... Economist, Bangalore | For his excellent comments and suggestions on the draft report. We sincerely acknowledge his feedback for bringing the report in proper shape and enhancing the quality of report. |
| Prof. Rajas Parchure..... Director, Dr. S. S Kalamkar Reader Ghokhale Institute of Politics and Economics, Pune | For participating with us in the study for collecting field data on market functionaries in Maharashtra APMCs. |
| Respondent Market Functionaries in the selected markets of Karnataka and Maharashtra..... • Farmers; Commission Agents; Wholesalers/Traders ; Retailers; Consumers; • Market Committee Members /APMC Secretary; Nasik District Onion Traders Association; Wholesale Onion Traders Association, Belgaum | For participating in the interviews and discussions and providing valuable information and suggestions. |

All those who have directly & indirectly involved in the study.
Usual disclaimer applies.

October 06, 2012 Authors

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# Executive Summary

Onion is one of the most significant and commonly used ingredients in Indian recipe. Thus the changes in prices have a huge impact on the food security, and farmer and consumer welfare. An increase in price of onion affects the consumer by way of increase in food consumption budget, while a decrease in onion prices below the cost of cultivation affects the producer. There is enough evidence to show that prices of agricultural commodities are more volatile than those of the non-farm commodities. These commodities are less elastic to price and income and inherently unstable due to weather and institutional risks. The high volatility in prices of agricultural commodities can have a disproportionate, typically nonlinear or asymmetric impact on the economy and may fail to endure exceptional shocks. This impact is prominent if governments and households are well-adapted to normal volatility but fail to anticipate or consider making worthwhile provisions against extreme shocks.

It is also important to note that the high inflation of food commodities cannot always be attributed to risks, exogenous shocks and mismatch between demand and supply. It is also caused by market inefficiencies, weak supply chains and monopolies in the market. The spurt in food inflation in the recent months has brought to forefront some critical issues of price volatility in agricultural commodities, agricultural market structures and market efficiency.

With this backdrop, the CCI desired ISEC to undertake this study on the competitiveness in the major onion markets in Maharashtra and Karnataka considering area, production and productivity trends, analysis of market structure, market margins, cost of production, institutional support, price volatility, etc. The study addresses the following specific objectives:

- To analyze time series data on production, onion yield, area under cultivation of onion and other indicators so as to analyze the trend in production, prices, output and demand of onion.
- To document the market structure; that includes:(i) Various market players, and nature of market at each stage of the supply chain of onion; (ii)Details such as regulatory framework for the market, types of market participants, role of each market participant and their relationship, number of primary mandis, number of transaction points etc. This will be done to understand the volatility and price fluctuations.
- Assessment of competition in Onion Markets: (i) a quantitative analysis on price-output and cost relationship in the selected markets, (ii) Comparative analysis of competition and efficiency in regulated and unregulated mandis (iii) Analyze the causes of difference between the wholesale and retail prices of onion, and (iv) The supply chain of onion from producer to consumer in selected Markets.
- Provide policy initiatives and recommendations, based on the findings of the study

In order to address the issues posed in the objectives, the secondary and primary data were collected from all the actors involved in the onion supply chain located in five major onion markets in Karnataka and six major onion markets in Maharashtra. Primary survey is carried out in these 11 markets, with a structured questionnaire for farmers, retail and wholesale traders and market functionaries. The primary survey has been used to find out structure and conduct of onion markets and for assessing the competitiveness of onion markets in India. Secondary data has been used to find out the historical and recent trends of onion production, area under onion cultivation and yield of the onion. The same has also been used to find the seasonality of onion arrivals and prices in the major markets, and wholesale and retail prices of the onion in major markets. This data has been gathered personal visits to state departments of agriculture, directorate of statistics and economics, and websites of international organizations such as

Food and Agriculture Organization (FAO), International Food Policy Research Institute (IFPRI), Ministry of Agriculture, Ministry of Finance, Agriculture Marketing Departments of different states and different institutes such like NAFED, NHRDF, etc. Both primary and secondary data was analyzed using simple statistical methods.

**Significant Conclusions and Observations:**

- Market structure of onion is unilaterally dictated by the traders, not farmers; reasons-
  - Minimal role of farmers in price discovery due to low size of average farm holdings (1.15 to 1.3 acres) and unfavorable weather conditions and price risk.
  - Most of trading is in the hands of commission agents and traders - Traders buy small lots from the market yards and pool the produce for sorting or grading at their packing houses and market different grades to different markets all over India. Lack of trading expertise, market knowledge and risk bearing capacity has prevented most of the farmers to make any dent in onion trading.
  - Access to information - Farmers generally take reference of the local markets' rates, while traders compare rates of all markets, including major distant and export market and then decide where to send their produce of a particular grade. This brings greater profits to them;
  - Lack of capacity to conduct multiple roles prevents farmers and their organizations to compete with traders;
  - Existence of established traders and barrier to new entry is a typical market phenomenon; and less number of active traders during slack season also reduces competition.
  - Lack of alternative institutional support system - Exclusive onion growers' association (farmers' associations, co-operatives) has not been evolved. Little efforts done to innovate their short period business, with year-long expenses;
- Results of seasonal indices, correlations, daily, monthly arrivals their prices etc. indicated existence of anti-competitive elements in the onion markets. A few big traders having well connected networks with market intermediaries in other markets seem to play a major role in hoarding for expected high prices.
- In December 2010, onion prices increased; retailers' markup over the wholesale markets price was more than 150 per cent in almost all major markets in the crucial weeks of December 2010. Therefore, the December 2010 episode was not simply "demand (buyers) and supply (farmers) problem".
- The average experience of commission agents and wholesalers in onion trade in selected markets found to be around 20 years. That indicates the existence of the same commission agents and wholesalers in the markets, who normally have huge turnovers. This creates oligopoly like situation in the market, and perhaps restricting entry for new entrants. A clear case of entry barrier.
- During field investigation, it was noticed that some farmers have developed close relationship with commission agents, and further commission agents were having close understanding with wholesalers. This created a situation of both benefit/loss to the farmers. In a few markets in Maharashtra, the commission agents were keen to satisfy the wholesalers, as they first of all allowed the wholesalers to pick up the produce by giving them credit for a month or two and then in case of early payment, they were rewarded with some discount. Such kind of anti-competitive spirit showed by the commission agents towards traders for their own interest ultimately inflicted loss to the farmers. This could have been avoided through close monitoring by APMC officials.
- Collusion was observed among traders in selected markets in Maharashtra and

Karnataka, For instance, a visit to Ahmednagar APMC revealed that there was collusion amongst traders. While bidding on certain lots was taking place, traders started with about Rs 300 per quintal and kept bidding higher prices till one trader quoted Rs 400 per quintal and another bid at Rs 405 per quintal. The commission agent stopped the auction and produce was shared between two wholesalers. In fact, about 60 per cent of farmers in Washi market reported that their sale was undertaken through secret bidding.

- ☐ Market functionaries often resort to a strike which finally ends up in market closure. When the market is closed, stocks pile up which has a downward impact on prices.

- ☐ Export ban and arbitrary practice of fixing Minimum Export Prices (MEP) for onion often cost exporters in in terms of losing their credibility in export markets as irregular suppliers. Even though the MEP is fixed at very high levels, exporters manage to sell at prices below MEP though fake documents. This shows that in any case, some big traders benefit despite of high MEP. Fixation of MEP makes small exporters reluctant to export which sometimes leads to excess supplies in domestic markets, leading to fall in prices.

- ☐ The government as also international trade had a great role in the Dec 2010's high price episode. Unseasonable rains in late Sept and Oct 2010 destroyed the onion crop. Yet the government agencies allowed traders to export 1.04 lakh tonnes of onion in October 2010.

- ☐ There are significant marketing costs (12 – 26 % of TC), which also contribute to price hike.

- ☐ Lack of market infrastructure is common problem in Maharashtra and Karnataka (MAH has only 880 regulated market (RM) against 3916 required; KAR has only 501 RM against 2441 required; in relative infrastructure index ranking, these two states stand below PUN, HAR, KER, TN and UP) . With the 73rd Amendment to the Constitution, institutional framework involving panchayats is provided to deal with the problems at the village and taluka levels. The credit cooperative societies can provide a good back up support to the marketing infrastructure. In fact, in the rural areas, credit cooperatives and market cooperatives work hand in hand.

## Policy Recommendations

1) Encouraging free entry of new commission agents and traders (including private companies) for market efficiency and efficient price formation. This could be done through providing better infrastructural facilities and licenses for creating competitive environment and avoiding oligopoly situation as well.

2) Bringing stringent measures in and strengthening regulatory system for effective monitoring and weeding out market intermediaries playing multiple roles and engaging in unfair practices (like low price bidding; collusion ; indulging in intentional hoarding to create artificial demand situation for realization of better prices). For these, measures such as canceling license for a temporary period; putting fines and penalties, and monitoring closely the behaviours of traders for any intentional hoarding, could be taken.

3) Reforming APMCs - Since APMCs seem to be largely dominated by traders lobbies, APMCs need to be reformed and strengthened to avoid collusions and hoardings in the markets. For these following measure may be taken -

   - ❖ Strictly mandating the APMCs and other wholesale markets for not allowing any secret bidding as it is against the Regulated Market Act.

   - ❖ Making involvement of APMC officials in the auctioning process mandatory to avoid collusion between traders. Besides, cooperative marketing societies must be encouraged so as to prevent collusion amongst traders.

   - ❖ Bringing in mandatory provision in the APMC Act to prevent sudden

market closers since closure of markets would not only cause adverse impact on prices due to significant rise in stocks, it will also lead to inflationary pressures.

- ❖ Bringing provisions for effective use of charges collected by the APMCs for providing better infrastructure for all the stakeholders, particularly the farmers.

4) Discouraging export ban on onion and arbitrary fixation of MEP as these will have long run effect on market functionaries as also farmers.

5) Mandating NAFED to procure onion from market and directly from the farmers, and not from traders to set in competition. It can intervene at appropriate time in market.

6) Promoting direct sales of farmers to wholesalers and more particularly linking small farmers produce to retail chains to reduce marketing costs.

7) Policy initiatives to avoid the Dec 2010 type of price volatile situation in future:

- ❖ Better system for forecasting total production considering economic and meteorological events, at least in major onion producing area. This would help in taking appropriate decisions about onion export.

- ❖ Planning the export of onion to avoid significant fluctuations in its prices in the wake of increasing international demand for Indian onion. This will also help traders in maintaining their credibility as trusted and regular suppliers in international markets as well as farmers.

- ❖ eTendering or National market information system (prices observatory) for recording, disseminating and analyzing price data for onion for key markets in the country for better price transmissions to the actors involved in the supply chain.

8) Need necessary steps from government towards the implementation of 73rd Amendment to the Constitution wherein institutional framework involving panchayats is provided to deal with the marketing problems at the village and taluka levels. Though panchayats so far, have been trying to provide basic services, they do not provide marketing facilities in any way and their involvement in providing marketing facilities is only recorded on policy document.

9) Some suggestions to CCI and Government of India –

- ❖ To initiate steps to foster the growth of credit cooperatives in agriculture sectors as the growth of credit cooperatives in agriculture in most of the states in India as well as in Karnataka have not been keeping pace with the marketing cooperatives.

- ❖ To deal with the inefficiency in the supply chain in Maharashtra and Karnataka, strategies should be devised in a such way that promote healthy competition, reduce market imperfections and improve the welfare of all the actors involved in the market channel (producer to consumer). To fulfill this, necessary changes should be made in the APMC Act in line with the Competition Act of 2002.

# Chapter 1

# Background and Methodology

## 1.1 Background

The spurt in food inflation in the recent months has brought to forefront some critical issues about price volatility of agricultural commodities, agricultural market structures and market efficiency. Increased focus on these issues is clearly evident in recent working papers of the Finance Ministry[1]. Finance Minister's *Suo-moto* statement on inflation in Lok Sabha on 22nd November 2011 and the first position paper by inter-ministerial group (IMG) on inflation reiterate the issues. In his statement in Lok Sabha, Finance Minister stated, "A durable solution to inflation in an economy with rising income levels lies in improving agricultural productivity and ***strengthening food supply chains***". In the same speech, further he stressed on 'an urgent need' to amend and enforce Agricultural Produce Marketing Act and to initiate steps to improve agriculture market structure. The IMG in their first position paper[2] also stated, "The gap between farm gate price and retail price is exceedingly high in India. We clearly need policy measures to bring this down", and expressed the need of changing APMC act. These clearly point out that all is not well in agriculture markets.

Managing price fluctuations in agricultural commodities within reasonable range has been one of the biggest concerns across the countries. This assumes significant importance when the issue of managing price variations in agricultural commodities comes into picture. The price variations in agricultural commodities not only affect producers and consumers but also have spillover effects to the other sectors, thereby leading to unstable growth of economy. There is enough evidence to show that prices of agricultural commodities are more volatile than those of the non-farm commodities. These commodities are less elastic to price and income and inherently unstable due to weather and institutional risks. The high volatility in prices of agricultural commodities can have a disproportionate, typically nonlinear or asymmetric impact on the economy and may fail to endure exceptional shocks. This impact is prominent if governments and households are well-adapted to normal volatility but fail to anticipate or consider making worthwhile provisions against extreme shocks. However, it also important to note that high inflation of food commodities cannot always be attributed to risks, exogenous shocks and mismatch between demand and supply. It is also caused by market inefficiencies, weak supply chains and monopolies in the market. The price spurts in onion couldn't be explained fully through the fundamentals of demand-supply and that underscores the need to delve into the market structures and identify the real causes of price volatility in agricultural commodities.

Against this backdrop, the CCI desired ISEC to undertake this Study to assess the competition in onion markets in India. The study therefore proposes to examine the competitiveness of major onion markets in India. Irrational speculative intentions and hoardings by trader lobbies have generally been cited for the episodes of high price volatility in India However, no policy measures, which could effectively prevent such crisis, are suggested. This study aims to fill this gap for the onion markets.

## 1.2 Objectives and Scope

The objectives of the study are as following

a) To analyze trends in area, production and productivity of onion at different level (global, all India and State-level) and assess export and price fluctuations in major onion markets in India.

[1] Working paper no.5 of 2011- "Understanding Inflation and Controlling It" by Kaushik Basu-the Chief Economic Advisor to Finance Ministry and Working Paper no.2 of 2011 "Domestic Wheat Price Formation and Food Inflation in India" by Dasgupta, Dubey and Sathish- Department of Economic Affairs, Ministry of Finance

[2] http://finmin.nic.in/workingpaper/IMG%20on%20Inflation.pdf

b) To document the market structure of onion; that includes-(i) Market players, nature of market at various stage of the supply chain of onion, (ii) Regulatory framework for the market, types of market participants, their role and relationship. This will be done with a view to understand the volatility and price fluctuations.

c) To assess competition in selected onion markets; that includes-(i) a quantitative analysis on price-output and cost relationship in the selected markets, (ii) Comparative analysis of competition and efficiency in regulated *mandis* (iii) Analyze the causes of difference between the wholesale and retail prices of onion, and (iv) The supply chain of onion from producer to consumer in selected markets.

d) To provide policy recommendations based on the findings of the study.

### 1.3 Methodology:

The study is essentially empirical and has utilized both the secondary and the primary source of information. Secondary data is used to find out the historical and recent trends of onion production, area under onion cultivation and yield of the onion in India. The same has also been used to find the major onion markets in India- seasonality of onion arrivals and prices in the major markets, and wholesale and retail prices of the onion in these markets. The data has been gathered from websites of international organizations such as Food and Agriculture Organization (FAO), International Food Policy Research Institute (IFPRI) and World Bank Ministry of Agriculture, Ministry of Finance, Agriculture Marketing Departments of different states and websites of different institutes such like NAFED, NHRDF etc. Furthermore, the unpublished data has been collected through visiting agriculture and agriculture statistic departments of Maharashtra and Karnataka.

The primary data has been directly collected from all the stockholders participating in onion market processes. The data is collected to find out market structure, conduct of major players, and to assess the competitiveness of selected onion markets in India. The primary survey is carried out in Maharashtra and Karnataka selecting five largest markets (mandis) in Karnataka and six largest markets (mandis) in Maharashtra. Primary survey is carried out with a structured questionnaire for farmers, retail and wholesale traders and market functionaries. The detailed methodology of the primary survey is as follow.

**Selection of Market Functionaries/Players –**
Interviews were conducted with market players/functionaries like farmers, commission agents, wholesalers, retailers, consumers, Market Committee Members/APMC Secretary, transporters, retail chains and traders' associations- a. Nasik district onion traders association b. wholesale onion traders association, Belgaum.

**Table 1.1: Number of Farmers/Market Functionaries/Consumers Interviewed**

| Place | APMC | Farmers | Commission Agents (CA) and Wholesalers (WS) | | | Retailers | Consumers |
|---|---|---|---|---|---|---|---|
| | | | CA | WS | Total | | |
| **I. Maharashtra** | | | | | | | |
| 1) Ahmednagar | 1 | 25 | 17 | 3 | 20 | 10 | 10 |
| 2) Sangamner | 1 | 25 | 4 | 6 | 10 | 10 | 10 |
| 3) Yeola | 1 | 25 | 4 | 6 | 10 | 10 | 10 |
| 4) Lasalgaon /Pimplgoan | 1 | 25 | 9 | 11 | 20 | 10 | 10 |
| 5) Mumbai (Washi) | 1 | 15 | 18 | 2 | 20 | 10 | 10 |
| 6) Pune | 1 | 15 | 15 | 5 | 20 | 10 | 10 |
| ***Sub-Total*** | ***6*** | ***130*** | ***67*** | ***33*** | ***100*** | ***60*** | ***60*** |
| **II. Karnataka** | | | | | | | |
| 1) Davangere | 1 | 25 | 10 | 10 | 20 | 10 | 10 |
| 2) Gadag | 1 | 25 | 10 | 10 | 20 | 10 | 10 |
| 3) Hubli | 1 | 25 | 10 | 10 | 20 | 10 | 10 |
| 4) Bangalore | 1 | 25 | 10 | 10 | 20 | 10 | 10 |
| 5) Belgaum | 1 | 25 | 10 | 10 | 20 | 10 | 10 |
| ***Sub-Total*** | ***5*** | ***125*** | ***50*** | ***50*** | ***100*** | ***50*** | ***50*** |
| **III. Grand Total (I+II)** | **11** | **255** | **110** | **110** | **200** | **110** | **110** |

### Selection of Study Area

For the study purpose, markets were selected based on the production and consumption size. Mumbai, Pune and Bangalore are purely consumption oriented markets. These districts per se do not form significant production base, but draw supply from nearby or far markets, depending upon overall market demand conditions. Whereas, the remaining markets form significant share in the overall production of onion. In Maharashtra these include Lasalgoan-Pimplegoan, Ahmednagar, Sangamner and Yeola and in Karnataka, Davangere, Gadag, Hubli and Belgaum.

### 1.4 Limitations of the Study:

The main limitation of the study is that most of the commission agents and wholesaler were not willing to share their transaction/purchase and sale related information. The data of top ten commission agents and wholesalers as per transactions/ purchase and sale was not made available by most of the APMCs. The selection of retailer and consumer is based on the visit and willingness of the particular person to answer the questions, and thus has some limitations. The data collected from the farmers and market intermediaries is based on their memories and thus also has some limitations.

### 1.5 Organization of the Report:

In the introductory chapter, the objectives of the study are outlined on the basis of major concerns expressed over the recent undue price volatility noticed in the onion markets of India. The chapter also highlights some major marketing problems associated with onion markets. The overview of onion industry is provided in the second chapter. The chapter begins with examination of the changing trends in the area, production, yield and exports of onion and also analyse the pattern of seasonal arrivals and price volatility in onion at wholesale and retail level. The third chapter briefly reviews the market structure of onion in the background of the state of agricultural marketing in India in general and Karnataka and Maharashtra in particular. This takes in to account the problems faced by farmers in regulated markets, malpractices of traders and infrastructural bottlenecks observed in agricultural marketing of the selected states. The field data of market functionaries operating in supply chain of onion is analyzed in the fourth chapter. The chapter mainly attempts to understand the conduct of market functionaries in the supply chain and their role in blocking competition in the market. The final concluding chapter summerises the findings of the study and policy suggestions are offered for increasing competition and efficiency in onion marketing.

# Chapter 2

# Overview of Onion Industry in India

## 2.1 Introduction

In India, onion is largely grown in the western, northern and southern parts both in rabi and kharif seasons. Its supply is available throughout the year albeit with different volumes. India produces all three varieties of onion – red, yellow and white. In the northern part of the country, onion is usually grown in the winter (rabi) season. While in the southern and western states of Andhra Pradesh, Karnataka, Tamil Nadu, Gujarat and Maharashtra, it is grown in winter (rabi) as well as in the rainy (kharif) seasons. Currently, onion cultivation in kharif is gaining ground in the northern part of the country.

## 2.2 Current Scenario of Onion

### a) World Scenario

India is the second largest producer of onion in the world next to China (Table 2.1). According to 2010 FAO estimates, India contributes nearly 19.25 percent of world onion production. Though the second largest onion producer, India significantly lags behind in the productivity or yield of the onion. The Republic of Korea has the highest onion productivity of 63.84 tonnes/ha in the world followed, by USA (55.26 tonnes/ha), Spain (46.51 tonnes/ha), Japan (45.52 tonnes/ha) and Netherlands (45.10 tonnes/ha). The yield of onion in India (14.21 tonnes/ha) is lowest among 20 countries after Indonesia. Some of the reasons behind low productivity in India include poor irrigation facilities, use of local variety seeds, small land holding and poor economic background of farmers, lack of use of improved method of cultivation, less use of chemical fertilizers and pesticide, higher post-harvest losses and absence of good scientific storage facilities.

### b) All India Scenarios

The area, production and productivity of onion in India since 1980-81 to 2011-12 are presented in table 2.2. During the agricultural year 2011-12, onion was grown in an area of 1.04 million hectares with a production of 15.75 million tonnes in the country. As it is evident from the table, the area under onion cultivation has gone up consistently from 1980-81 to 2011-12. The onion yield in the country for the period 1980-81 to 2011-12 shows the similar improving trend. The onion yield in country has improved from 9961 kg per hectare in the year 1980-81 to 15106 kg per hectare in the 2011-12. In general, the compound growth rate (2000-01 to 2011-12) of area, production and productivity has shown an increasing trend.

### c) State-level Scenario

Table 2.3 shows the trend in the onion area under cultivation of onion, production and yield of onion/hectare in India since from 2009-10 to 2011-12. Although onion is cultivated almost all over the country, the major producing states are Maharashtra, Karnataka, Madhya Pradesh, Gujarat, Rajasthan, Andhra Pradesh, Uttar Pradesh, Orissa, and Tamil Nadu. Maharashtra is the leading producer of onion in the country with a contribution of 32.6 % of total onion production followed by Karnataka (17.6%), Gujarat (10%), and Bihar (7%). Due to unseasonal rains in 2009, both area under onion and production came down in the important states of Maharashtra, Karnataka, Gujarat and Haryana in 2009-10. The magnitude of decline in production of onion was the highest in Karnataka (25.5%), followed by Gujarat (24%) and Maharashtra (20%).

Table 2.4 shows the trends of onion production in four major producing states from 1975-76 to 2011-12. It is evident that the onion production in the states had improved nominally in the seventies and eighties except in Maharashtra, where it was almost stagnant. The 2000s, however, brought drastic improvement in onion production, improving production by several folds in all the major states. Comparing 2000-01 and 2011-12, the production increased from 1687.5 thousand MT to 5036 thousand MT in Maharashtra, 665.4 thousand MT to 2721.9 thousand MT in Karnataka, 131.2 thousand MT to 1535.5 thousand MT in Gujarat, and 665.4 thousand MT to 1298.4 thousand MT in Madhya

Pradesh. The significant increase in the production in the past decade was attributed to: increase in the area under horticultural crop, improved technology and the government efforts under National Horticultural Mission (NHM).

The growth rates of the area, production and productivity of onion in major states from 1974-75 to 2011-12 are given in table 2.5. Considering Compound Annual Growth Rate (CAGR) from 1974-75 to 2011-12, it is evident that the area under onion cultivation has grown by 3.36 per cent to 5.95 per cent in major onion producing states. Similar trend is observed in the production of onion which has grown by 4.94 per cent to 7.07 per cent. The productivity of the onion has grown from 0.51 per cent to 3.4 per cent.

**Table 2.1: Area, Production and Productivity of Onion in Major Onion (dry) Producing Countries in 2010**

| Sl. No. | Countries | Area | | Production | | Yield |
|---|---|---|---|---|---|---|
| | | ('000'ha) | % Share | (Million Tonnes) | % Share | Tonnes /ha |
| 1. | China | 956.21 | 23.70 | 22.06 | 28.09 | 23.07 |
| **2.** | **India** | **1064.00** | **26.38** | **15.12** | **19.25** | **14.21** |
| 3. | USA | 60.41 | 1.50 | 3.34 | 4.25 | 55.26 |
| 4. | Egypt | 61.54 | 1.53 | 2.21 | 2.81 | 35.88 |
| 5. | Iran | 55.74 | 1.38 | 1.92 | 2.45 | 34.50 |
| 6. | Turkey | 62.69 | 1.55 | 1.90 | 2.42 | 30.31 |
| 7. | Brazil | 70.43 | 1.75 | 1.75 | 2.23 | 24.89 |
| 8. | Pakistan | 124.70 | 3.09 | 1.70 | 2.17 | 13.64 |
| 9. | Russian Federation | 88.00 | 2.18 | 1.54 | 1.96 | 17.46 |
| 10. | Republic of Korea | 22.11 | 0.55 | 1.41 | 1.80 | 63.84 |
| 11. | Netherlands | 28.87 | 0.72 | 1.30 | 1.66 | 45.10 |
| 12. | Mexico | 44.84 | 1.11 | 1.27 | 1.61 | 28.24 |
| 13. | Myanmar | 78.90 | 1.96 | 1.14 | 1.45 | 14.42 |
| 14. | Morocco | 30.30 | 0.75 | 1.13 | 1.44 | 37.34 |
| 15. | Sudan (former) | 58.59 | 1.45 | 1.12 | 1.42 | 19.05 |
| 16. | Algeria | 44.90 | 1.11 | 1.11 | 1.41 | 24.75 |
| 17. | Spain | 23.80 | 0.59 | 1.11 | 1.41 | 46.51 |
| 18. | Indonesia | 109.63 | 2.72 | 1.05 | 1.34 | 9.57 |
| 19. | Japan | 23.00 | 0.57 | 1.05 | 1.33 | 45.52 |
| 20. | Ukraine | 59.60 | 1.48 | 0.91 | 1.16 | 15.25 |
| | **World** | **4033.93** | **100.00** | **78.53** | **100.00** | **19.47** |

Source: FAO (2012).

**Table 2.2: Area, Production and Productivity of Onion in India (1980-81 to 2011-12)**

| Year | Area | Production | Yield |
|---|---|---|---|
| | (Million ha) | (Million Tons) | (Kg/ha) |
| 1980-81 | 0.25 | 2.5 | 9961 |
| 1990-91 | 0.30 | 3.23 | 10686 |
| 2000-01 | 0.42 | 4.55 | 10786 |
| 2005-06 | 0.66 | 8.68 | 13118 |
| 2006-07 | 0.70 | 8.89 | 12655 |
| 2007-08 | 0.70 | 9.14 | 12974 |
| 2008-09 | 0.83 | 13.59 | 16260 |
| 2009-10 | 0.76 | 12.19 | 16039 |
| 2010-11 | 1.06 | 15.12 | 14264 |
| 2011-12* | 1.04 | 15.75 | 15106 |
| **CGR (%)** (2000-01 to 2011-12) | **11.5** | **16.5** | **4.5** |

Source: Directorate of Economics and Statistics for data till 2007-08 and National Horticulture Board M/o Agriculture for 2008-09 (www.nhrdf.org).

Table 2.3: Area, Production and Productivity of Onion in Major States in India

(Area 000 Ha; Production in 000 Metric Tonns; Yield Tons/Ha)

| State | 2009-10 | | | 2010-11 | | | 2011-12* | | |
|---|---|---|---|---|---|---|---|---|---|
| | Area | Prod | Yield | Area | Prod | Yield | Area | Prod | Yield |
| MAH | 200.0 | 3146.0 | 15.7 | 415 | 4,905.0 | 11.82 | 359 | 5,036.0 | 14.03 |
| | *(26.4)* | *(25.8)* | | *(39.0)* | *(32.4)* | | *(35.2)* | *(32.6)* | |
| KAR | 141.3 | 2266.2 | 16.0 | 190.5 | 2,592.2 | 13.61 | 200 | 2,721.90 | 13.61 |
| | *(18.7)* | *(18.6)* | | *17.9* | *(17.1)* | | *(19.6)* | *(17.6)* | |
| GUJ | 43.4 | 1078.6 | 24.9 | 62 | 1,514.1 | 24.42 | 64.1 | 1,535.5 | 23.95 |
| | *(5.7)* | *(8.8)* | | *5.8* | *(10.0)* | | *(6.3)* | *(9.9)* | |
| BIH | 53.0 | 972.0 | 18.3 | 53.3 | 1,082.0 | 20.3 | 53.3 | 1,082.0 | 20.3 |
| | *(7.0)* | *(8.0)* | | *5.0* | *(7.2)* | | *(5.2)* | *(7.0)* | |
| MP | 57.3 | 952.3 | 16.6 | 58.3 | 1,021.5 | 17.52 | 74.1 | 1,298.4 | 17.52 |
| | *(7.6)* | *(7.8)* | | *(5.5)* | *(6.8)* | | *(7.3)* | *(8.4)* | |
| Others | 261.8 | 3775.6 | 14.4 | 284.9 | 4003.1 | 14.1 | 270.3 | 3769.9 | 13.9 |
| | *(34.6)* | *(31.0)* | | *(26.8)* | *(26.5)* | | *(26.5)* | *(24.4)* | |
| Total | 756.8 | 12190.7 | 16.1 | 1064 | 15117.9 | 14.2 | 1020.8 | 15443.7 | 15.1 |
| | *(100)* | *(100)* | | *(100)* | *(100)* | | *(100)* | *(100)* | |

Note: Figures in parenthesis indicate percentage to all India total; * indicates advanced estimates
Source: www.nhrdf.org

Table 2.4: Production of Onion in the Four States of India

(Production (In '000' MT)

| Year | Maharashtra | Karnataka | Gujarat | Madhya Pradesh |
|---|---|---|---|---|
| 1975-76 | 743.0 | 145.3 | 312.3 | 120.4 |
| 1980-81 | 789.2 | 224.1 | 339.4 | 154.8 |
| 1990-91 | 840.1 | 328.9 | 424.4 | 212.6 |
| 2000-01 | 1687.5 | 665.4 | 131.2 | 272.7 |
| 2001-02 | 1307.0 | 721.0 | 640.2 | 324.6 |
| 2002-03 | 1427.0 | 535.8 | 717.4 | 345.0 |
| 2003-04 | 1645.0 | 360.5 | 1479.3 | 416.2 |
| 2004-05 | 1645.0 | 856.0 | 1223.0 | 535.6 |
| 2005-06 | 2469.0 | 870.0 | 2128.0 | 572.0 |
| 2006-07 | 2812.4 | 859.1 | 2128.0 | 629.7 |
| 2007-08 | 2713.3 | 1107.0 | 2059.0 | 559.7 |
| 2008-09 | 3932.5 | 3031.8 | 1409.6 | 881.8 |
| 2009-10 | 3146.0 | 2266.2 | 1078.6 | 952.3 |
| 2010-11 | 4905.0 | 2592.2 | 1514.1 | 1021.5 |
| 2011-12* | 5036.0 | 2721.9 | 1535.5 | 1298.4 |

Source: NHRDF (2012) **Note:** * indicates advanced estimates

Table 2.5: CAGR of Area, Production and Productivity of Onion in Major Onion Producing States in India (1974-75 to 2011-2012)

| States | Area | Production | Productivity |
|---|---|---|---|
| Andhra Pradesh* | 3.36 | 7.07 | 3.46 |
| Gujarat | 4.96 | 5.50 | 0.51 |
| Maharashtra | 5.33 | 4.94 | -0.36 |
| Madhya Pradesh | 5.63 | 6.77 | 1.08 |
| Karnataka | 5.95 | 7.04 | 1.02 |

**Note** - *The reason behind including Andhra Pradesh on the place of Bihar is that, AP is traditional onion growing state. Bihar on the other hand has started cultivating onion in recent decade.
**Source –** Based on Data from NHRDF (2012)

## 2.3 Export of Onion from India

India is a traditional exporter of fresh onion. Soon after Independence in 1951-52 the country was exporting over 5 thousand metric tonnes (MT) of onion worth Rs 106.69 lakh. Exports of onion started expanding rapidly during the 1960s and reached a high of 512 thousand MT in 1996-97. There was substantial increase in per unit value of onion from Rs 1733 per MT during 1981-82 to Rs 4078 per MT during 1990-91. Over the years there has been a progressive increase in the exports of onion from India and touched a peak of 1873 thousand MT during 2009-10. The quantum had touched a level of 1158 thousand MT during the financial year of 2010-11 up to November 2010. The large quantity of onion export is also one of the reasons for sudden spurt in the prices of onion during December 2010. Exports of onion from India are regulated and permitted only through certain designated canalising agencies. One of the prime agencies is the NAFED, which is the sole agency for exports of onion from India.

Although there has been an increasing trend in the quantum and value of exports of onion from the country, the exports are subject to wide fluctuations from year to year. This may be attributed to the fact that the exports of onion have not been free but are canalised through National Agricultural Cooperative Marketing Federation (NAFED) and now through some other agencies. Such agencies are protecting the domestic consumer and probably the producer from unduly high prices and gluts as well. The cause of fluctuations in the exports may be due to the occasional restriction put on exports (Sudhir 2004; NCAER, 2012), keeping in mind the domestic requirement. No doubt, exports of onion have fetched the country valuable foreign exchange and at the same time have given high price per tonne to the producer. The profitability and the potential offered by the exports of onion are evident from the fact that, on a national basis, the area, production and yield of onion have steadily increased by almost two and a half times between 1980-81 and 2008-09.

### 2.3.1 Growth in Export of Onion

Table 2.6 shows the data on quantity and value of onion exports from India from TE 1953-54 to 2011-12. The onion export from India has increased drastically in last sixty years and gone up from 39,848 MT in TE 1953-54 to 15,52,904 MT in year 2011-12, an increase by 38.97 times. The total value of the export has also gone up from Rs. 1.06 crores to Rs. 2141.43 crores in the same period, touching a peak export of 18, 73,002 MT in 2009-10. Unit value of onion export is increasing drastically due to excess demand for Indian onion in the international markets.

**Table 2.6: Export of Onion from India (1951-52 to 2011-12)**

| Year | Export | | |
|---|---|---|---|
| | Quantity | Value | Unit Value |
| | (MT) | (Rs lakhs) | (Rs/ MT) |
| TE1953-54 | 39848 | 106 | 267 |
| TE1962-63 | 106875 | 250 | 234 |
| TE1972-73 | 87085 | 372 | 427 |
| TE1982-83 | 181581 | 2959 | 1630 |
| TE1992-93 | 363733 | 14785 | 4065 |
| TE2002-03 | 460781 | 37407 | 8118 |
| 2005-06 | 778134 | 71597 | 9201 |
| 2006-07 | 1161062 | 113543 | 9779 |
| 2007-08 | 1101404 | 128582 | 11674 |
| 2008-09 | 1783820 | 224312 | 12575 |
| 2009-10 | 1873002 | 283429 | 15132 |
| 2010-11 | 1340771 | 215906 | 16103 |
| 2011-12 | 1552904 | 214143 | 13790 |

**Note: TE =** Triennium Ending Average;
**Source -** Based on Data from NHRDF (2012)

### 2.3.2 Monthly Export of Onion

Annexure 2.1 and Annexure 2.2 show the monthly quantity and value of Indian onion export from year 1991-92 to 2011-12. The months with above average export quantity in the particular year has been coloured with red colour. It is clearly evident that the quantity and the value of the Indian onion export have grown significantly in last two decades. Further the March, May, April and January are the highest onion export months.

### 2.3.3 The Marketing System: Institutional Support for Marketing and Trade

*Price Support Programmes*

For onion, NAFED intervenes in the domestic marketing whenever there is glut in the market and prices reach uneconomical levels. Prices prevailing in major markets all over the country are reviewed every day in this process. Procurement prices of onion are decided by NAFED on the basis of cost of production and procurement is initiated in the markets and from the farmers directly. This benefits the producers, particularly the small producers, who have low carrying capacity and are constrained to sell immediately after harvest on account of financial constraints.

In case of external trade, NAFED is responsible for fixing the minimum export price (MEP) of onion in collaboration with DGFT (Director General of Foreign Trade), which is done on 15 to a monthly basis. Factors such as market trends, world prices and domestic prices, and margins are considered for arriving at the MEP of onion.

*Technological and Extension Support*

A National Horticultural Research Development Foundation (NHRDF) has been set up by NAFED to undertake research on development of varieties of onion suitable for cultivation in different agro-climatic regions of the country as well as the development of suitable production practices. NAFED has also set up units for the production of bio-fertilizers and *rhizobium* culture. Besides NAFED, other public research agencies are also involved in technology development and upgradation for onion.

The technologies and package of practices developed are passed on to the producers through an extensive system of extension. Seed and, at times, other critical inputs are provided to farmers by NAFED. Plant protection operations have also been undertaken to provide protection against pest and disease infestations. Technical knowhow is extended to farmers to improve production and productivity. Seed production is undertaken by the NAFED sponsored National Horticultural Research Development Foundation and seed is sold by NAFED under its own name.

*External Trade Support*

From 1974 to January 1999, the NAFED was the sole canalizing agency for external trade and exports of onion from India. In January 1999, the new export - import policy of the GOI introduced certain changes in the system of onion trade by including 13 State Trade Enterprises as canalizing agencies for onion trade. Some of them are: Maharashtra Agricultural Marketing Board, Gujarat Agro Industries Corporation, Karnataka State Cooperative Marketing Federation, Andhra Pradesh Marketing Federation, etc. The government also allowed other agencies to enter in canalized exports of onion. The reasons for allowing other agencies is that the Government did not want any agency to acquire a monopoly position in this respect and also to facilitate the easy procurement, distribution and exports of the commodity from the widely distributed producing centers of the country. However, NAFED continues to be a monitoring agency as it shares around 50 of the total quantity exported. Each canalizing agency is allocated a quota for exports and inter-ministerial group comprising representative of ministries of Commerce, Consumer Affairs and Agriculture and NAFED decide the quotas for exports.

NAFED has set up modern state-of-the-art storage facilities in Maharashtra, Gujarat and Tamil Nadu near its major procurement centers. Onion requires storage facilities that require sufficient inflow of fresh air. Consignments are packed in hessian bags which allow air to pass through. Export consignments meant for long distance are transported by NAFED's associated shippers in specially equipped sea vessels in which air is blown in storage areas through fans and blowers.

## 2.4 Analysis of Onion Arrivals and Prices

In this section, we provide description of onion prices in major markets of India, Maharashtra and Karnataka. A comprehensive understanding about the role of prices shapes agricultural policies by guiding the decision making process of economic agents. We focus on three prime indicators in order to analyze trend of onion prices: seasonal index of onion arrivals and prices in major markets, volatility of onion prices and wholesale and retail prices of onion in major markets.

### 2.4.1. Seasonal Indices

Seasonal or inter-year variations in prices occur with some regularity on pattern during the year.

Seasonal price variations resemble a cycle covering a period of 12 months or less. The general pattern of general variations in prices, i.e. lower prices during the post harvesting months and higher prices during the pre-harvest of off-season months is a normal feature for many agricultural commodities and it is repeated year after year. Some of the factors that affect the extent of seasonality in prices include- extent of seasonal concentration in production, degree of perishability of the commodity, the cost of storage (including direct cost, losses in storage, risk involved), degree of seasonality in consumption, facility of storage available to farmers or public agencies, restrictions imposed on traders in terms of stock limits.

### Seasonal Index

Seasonal index of arrivals and prices from 2002 to 2011 has been worked out using Acharya and Agarwal (1994) methodology as also coefficient of variations (CV) of prices. Annexure figure 2.1 shows the seasonal index of onion arrivals and onion prices in the major markets of Maharashtra, Karnataka and rest of India (Kolkata, Ahmadabad, Hyderabad, and Chennai). The values of some of these seasonal indices and the summary of highest/lowest arrivals and prices of onion can be found in annexure table 323 and in table 2.7 respectively. From these tables and annexure figure, it is clearly evident that in most of the markets, some of the months with highest onion arrivals also have the highest prices of onion. This indicates presence of exploitative elements in the markets hindering the competition. In general condition, arrivals (supply) are expected to be inversely related to prices, but they are moving in same direction for some months, giving indication market intermediaries taking advantage of prevailing situation[3]. Further, our calculation of coefficient of correlation of daily arrivals and prices in the major markets provide much support to this paradoxical situation. It is clearly evident that the correlation of daily arrivals of onion with its daily prices is significantly low in all the markets (Table 2.8), meaning the prices of onion in these markets have no correlation or weakly correlated with the arrivals. In the ideal scenario, we would expect a negative correlation of higher degree between arrivals and prices of the onion[4]. But the results turns out to be almost zero for Kolkata, Mumbai, Delhi and Bangalore markets and normal for Jaipur. This clearly suggests that other exogenous factors like: hoarding, market cartels, etc are influencing the onion prices

The graphical representation of daily arrivals and minimum, maximum and modal wholesale prices in selected markets of Maharashtra and Karnataka (Figure 2.1) help us to reach to the following observations. The behaviour of arrivals and prices differ for metropolitan city markets (Bangalore, Mumbai and Pune) and primary wholesale assembling markets (Lasalgaon/pimpalgoan, Ahmednagar, Sangamner, Yeola, Gadag, Hubli and Davangere). The metropolitan city markets, even though with higher arrivals are showing higher prices. If we closely look at this phenomenon, it can be noticed that large wholesalers/traders mainly operates in metropolitan city markets and large number of farmers dispose their bulk of produce in nearby markets (primary wholesale assembling markets) immediately after the harvest. Most of the farmers, particularly marginal and small have less incentive to sell their produce in metropolitan city markets (due to higher transaction cost) and hold it for longer period of time. These farmers in fact are compelled to sell their produce immediately after the harvest due to absence of storage facility, their immediate cash need for repayment of earlier loans, family expenses, purchase of inputs for next season and their commitment to money-lenders on repayment of loan.

[3] However, it may be counter argued that if farmers respond to the higher prices and bring more produce to sale, then there may even exist positive relationship between arrivals (supply) and prices. This would be true if farmers are well-informed about price behavior, have storage facility and there is no compulsion to dispose their produce off immediately after the harvest. But these conditions hardly exist in country like India as a bulk of the agricultural produce finds its way to market often after the harvest of crop.

In standard or under ceteris paribus condition, price level in onion markets is determined by the volume of supply (here arrivals) as the demand (latent demand from consumers) remains reasonably constant throughout the year except the period of festivals/social ceremonies. Therefore, any increase (or decrease) in the volume of arrivals, should cause a decrease (or an increase) in price level. Here it is assumed that there is no hoarding or significant changes in exports/imports since these will put upward/downward pressure on prices.

[4] Refer above footnote.

Table 2.7: Seasonality in Onion Arrivals and Prices in Selected Markets of India

| Market | | Highest | Lowest |
|---|---|---|---|
| **Delhi** | **Arrivals** | **Nov., Dec.,** March & June | Jan, Sept., Oct. |
| | **Prices** | Oct., **Nov., Dec.** & Jan | April, May, June |
| **Kolkata** | **Arrivals** | **Dec.,** Feb, Jan | April, Nov., Oct. |
| | **Prices** | Oct., Nov., **Dec.,** Jan | April, March, May |
| **Ahmadabad** | **Arrivals** | **Dec.,** Feb, April | July, August, May |
| | **Prices** | Oct., Nov., **Dec.,** Jan | April, May, March |
| **Hyderabad** | **Arrivals** | Nov., Dec., May | Oct., Nov., Dec. |
| | **Prices** | August, June, July | April, March, May |
| **Chennai** | **Arrivals** | July, Jan, March & **Nov.** | April, August, Oct. |
| | **Prices** | Oct., Nov., Dec. & Jan | April, March, May |
| **Bangalore** | **Arrivals** | Sept., Oct., Nov., **Jan** | June, July, April & March |
| | **Prices** | **Jan,** Feb, August | April, May & March |
| **Mumbai** | **Arrivals** | **Dec., Jan,** Feb, March | August, May, Sept., Oct. |
| | **Prices** | Oct., Nov., **Dec.,Jan** | April, March, May, June |
| **Pune** | **Arrivals** | Jan, Feb, March & April | Nov., June & Oct. |
| | **Prices** | Nov., Oct., & Dec. | April, May & March. |
| **Ahmednagar** | **Arrivals** | **Nov., Dec.,** Jan, Feb | June, July, August, Sept. |
| | **Prices** | Sept., Oct., **Nov., Dec.** | March, April, may, June |
| **Lasalgaon** | **Arrivals** | **Dec., Jan,** Feb, May | August, Sept., Oct., Nov. |
| | **Prices** | Oct., Nov., **Dec. & Jan** | March, April, May & June |
| **Pimpalgaon** | **Arrivals** | **Jan** , Feb, May & **Dec.** | July, August, Sept., Oct. |
| | **Prices** | Oct. , Nov., **Dec. & Jan** | March, April, May, June |
| **Yeola** | **Arrivals** | **Jan,** Feb & March | Nov., June & Oct. |
| | **Prices** | Oct. , Nov., Dec. & **Jan** | Sept., Oct. & Nov. |
| **Sangamner** | **Arrivals** | March, June, August | Oct. & Dec. |
| | **Prices** | Oct., Nov. & Dec. | April, May, March & June |

**Note** – bold letters indicate peak points

**Source** – Based on Figure 2.1 and Annexure table 2.3

It is big traders operating in both primary wholesale assembling markets and metropolitan city markets are in position to buy large volume of onion in the post harvest season and tighten the supply through hoarding in lean season of production. The lean season also happen to be coincided with start of major festivals and ceremonies like marriages in India. This clearly manifests itself during months of September to January, in which the supply from onion producing regions is minimal and festivals like Dasera, Dipawali, Eid, Chrismas and marriages and other ceremonies put higher pressure on the demand of onion[5].

Table 2.8: Correlation of Daily Market Arrivals and Modal Prices (Year 2011)

| Market | Data Availability | Correlation of Arrivals and Modal |
|---|---|---|
| Kolkata | 268 | -0.0859 |
| Mumbai | 264 | -0.0535 |
| Delhi | 284 | -0.0254 |
| Bangalore | 263 | -0.07 |
| Jaipur | 204 | -0.416 |

**Source** – Based on online data from NHRDF (2012)

### 2.4.2 Volatility in Onion Prices

*Volatility: Concepts and Definitions*

Regular price fluctuations viz., "day-to-day" or "normal volatility" is both typical and requisite for competitive market functioning. The essence of the price system is that when a commodity becomes scarce its price rises, thus inducing a fall

[5] However, a point to be noted here that the case of hoarding cannot be diluted just because there has been pressure on demand due to festivals and social ceremonies. The long run (3-4) monthly data will give us enough idea about the extent of their impact on price deviation (Figure 2.2 gives a good idea of this. That is, the lengths of price spikes should have been more or less same). On the other hand, hoarding is concerted effort of traders (when regulation mechanism is already in place) for exploiting the situation for their advantages. In this case, deviation in prices will be large and irregular (to avoid a strict vigilance of regulatory authority). Since there have been significant decline in monthly exports during this period, its effect on price should have been negative. (See annexure table 2.1).

in consumption and signaling more investment in the production of that commodity. It is important to know why prices have risen in order to counteract the scarcity appropriately (Grossman, 1976). However, the efficiency of the price system begins to break down when price movements become increasingly uncertain and precipitous, and ultimately reaches the point of redundancy when prices undergo "extreme volatility" or "crisis".

With above explanation, volatility may seem a rather obvious concept, but a precise definition of volatility is elusive and its measurement is prone to much subjectivity. In mainstream economic theory, however, volatility connotes two principle concepts: ***variability and uncertainty,*** the former describing overall movements while the latter referring to unpredictable movement. As households and planning agencies are able to cope better with predictable variation, unpredictable changes or "shocks", which are of primary concern. When shocks surpass certain critical size or threshold and persist at those levels, traditional policy perceptions and coping mechanisms are likely to fail (Wolf, 2005). In addition to the distinction between normal and extreme volatility, price movements may be excessive relative to changes in "fundamentals"- i.e. shocks to demand and supply over and above that which is predicted by the efficient market hypothesis and is termed "excess volatility" (Shiller, 1981; LeRoy and Porter, 1981).

*Onion Price Volatility in Major Markets*

We have estimated the price volatility in different onion markets, using method of coefficient of variation for the period of four years (from 2008 to 2011). The estimates of coefficient of variations (CV) give us an idea about percentage spread/volatility of prices from its mean value. The overall variations in CV of prices may indicate the conduct of market functionaries, role of seasonal demand, export demand and other supply and demand factors at play. Since we begin with our earlier assumptions (see footnotes 3-5), we believe that a large amount of variations in CV is contributed by the conduct of market functionaries, particularly traders in most of the markets under consideration.

The coefficients of variations of onion prices in major markets for the period of 2008 to 2011 is given in table 2.9. It is clearly comes up with the following observations. First, the wholesale prices of the onion are more volatile than the retail prices in all major markets. If we consider the variation across the country, the wholesale prices in the Mumbai, Nashik, Bangalore, Ahmadabad and Chennai are more volatile than the remaining markets. In case of retail prices, Ahmedabad, Bangalore and Mumbai are more volatile than the remaining markets. Second, wholesale and retail prices in most of the markets are increasingly becoming more volatile since 2009 onwards. Figure 2.1 clearly highlights that price volatility is more common during the months of September to January.

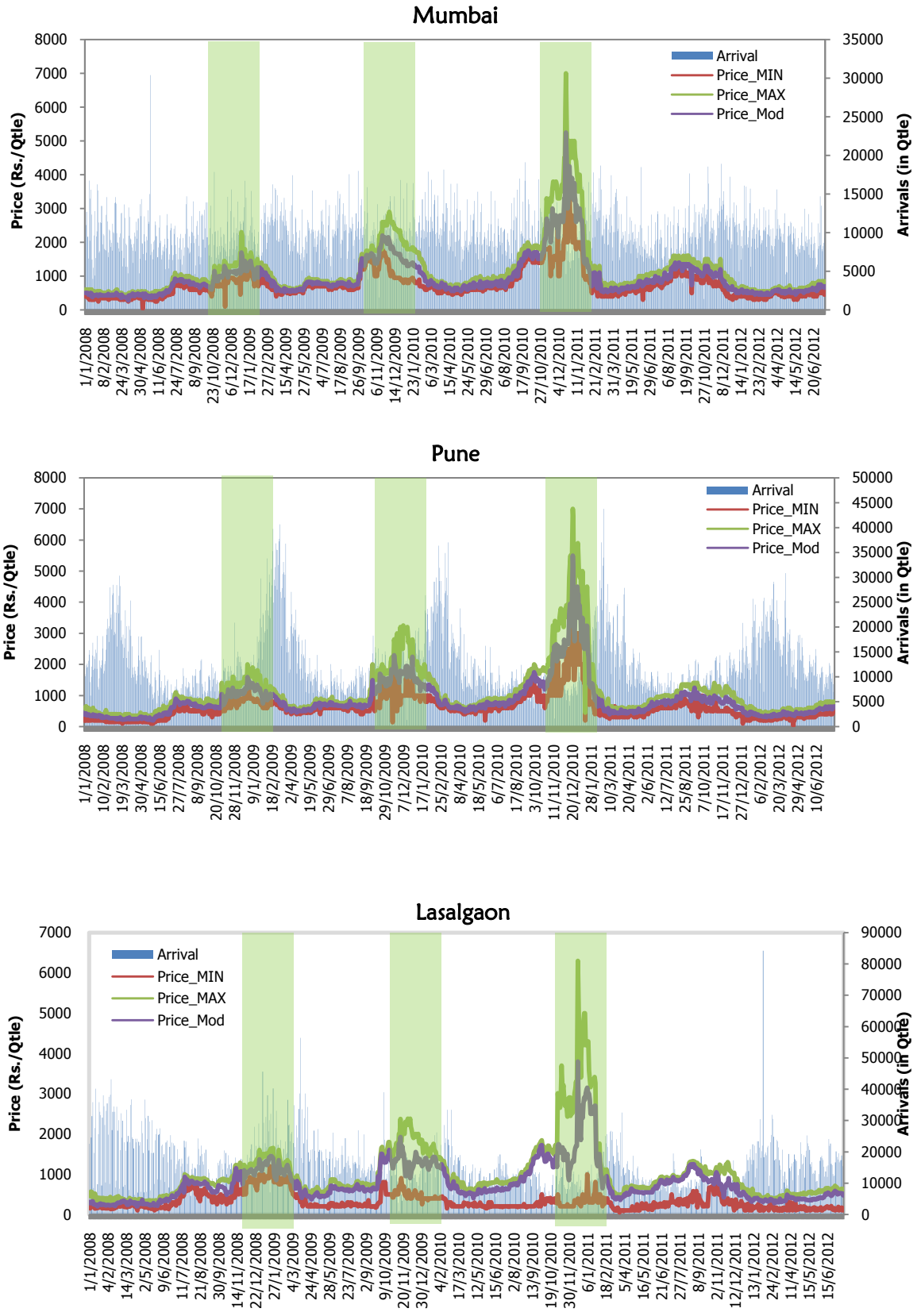
**Table 2.9: Coefficients of Variations of Onion Prices in Major Markets in India**

| Cities | Wholesale Prices | | | | | Retail Prices | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2008 | 2009 | 2010 | 2011 | All | 2008 | 2009 | 2010 | 2011 | All |
| Delhi | 44.25 | 41.00 | **51.35** | **65.92** | 57.02 | 30.89 | 33.58 | **46.37** | **53.57** | 46.98 |
| Kolkata | 35.15 | 40.21 | **52.83** | **54.92** | 54.14 | 30.41 | 38.64 | **43.72** | **53.45** | 47.05 |
| Jaipur | 44.31 | 32.29 | **53.78** | **65.28** | 55.45 | 35.70 | 15.98 | **34.07** | **52.54** | 38.11 |
| Ahmedabad | 49.70 | 25.95 | **30.23** | **70.65** | 48.48 | **64.47** | 25.97 | **30.54** | **61.25** | 49.65 |
| Hyderabad | 41.37 | 32.99 | **51.25** | 50.04 | 50.04 | 44.03 | 34.40 | **50.72** | **56.35** | 51.98 |
| Chennai | 44.74 | 39.52 | **52.97** | **57.92** | 52.74 | 30.53 | 33.23 | **45.96** | **48.83** | 45.24 |
| Bangalore | 44.16 | 46.52 | **63.65** | **72.11** | **63.92** | 34.95 | 37.04 | **46.73** | **58.80** | 50.32 |
| Mumbai | 21.09 | 48.60 | **62.46** | **58.51** | 53.90 | NA | 14.10 | **55.86** | **47.87** | 48.69 |
| LAS/PIM* | 42.34 | 42.68 | **54.26** | **56.64** | 56.83 | 31.02 | 35.39 | **47.86** | **46.83** | 47.15 |
| Nashik | 44.00 | 58.60 | **74.39** | **77.36** | **72.00** | 31.94 | 52.74 | **66.41** | **71.91** | **63.15** |
| Pune | 38.21 | 39.73 | **57.89** | 53.03 | 55.48 | 39.18 | 34.37 | **65.31** | **58.60** | **60.50** |

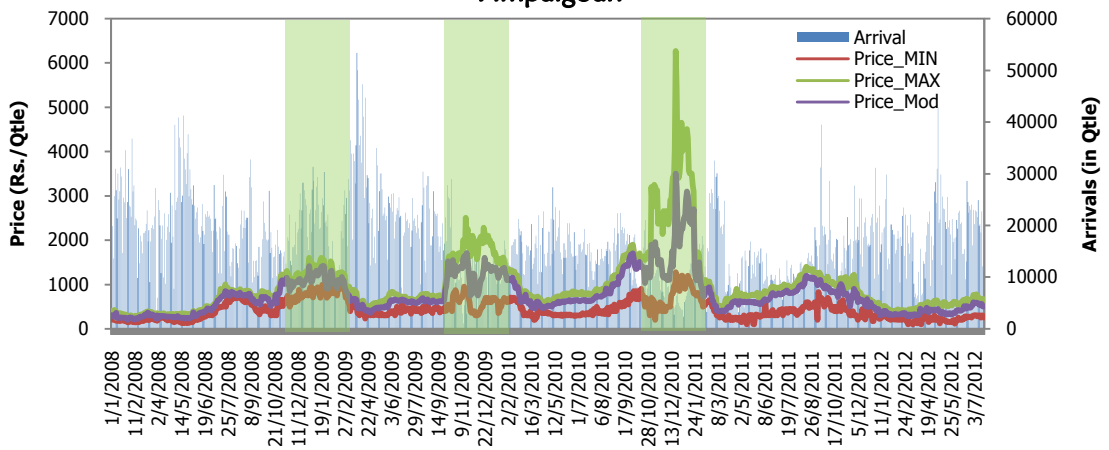
**Note - *** indicates CV of Weighted Average Prices of Lasalgaon and Pimpalgoan; NA = Not Available; All = June 2008 to December 2011.

**Source** – Based on online data from National Horticulture Board (2012)

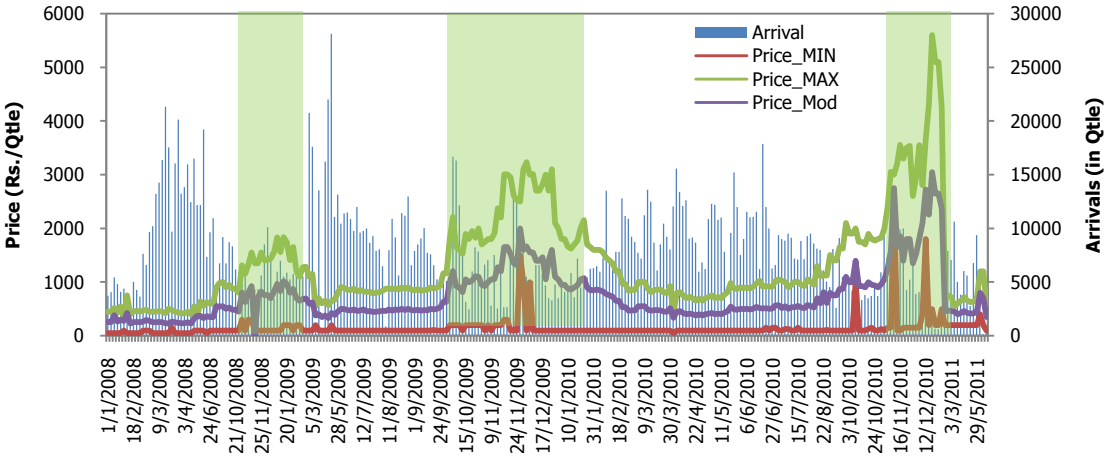
Figure 2.1: Daily Arrivals and Minimum, Maximum and Modal Prices in Selected Markets of Maharashtra and Karnataka



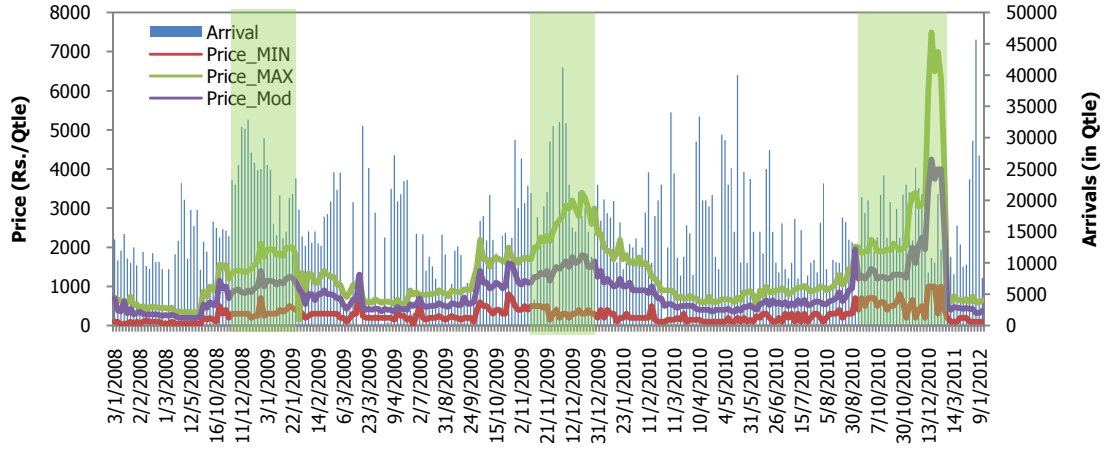
## Pimpalgoan

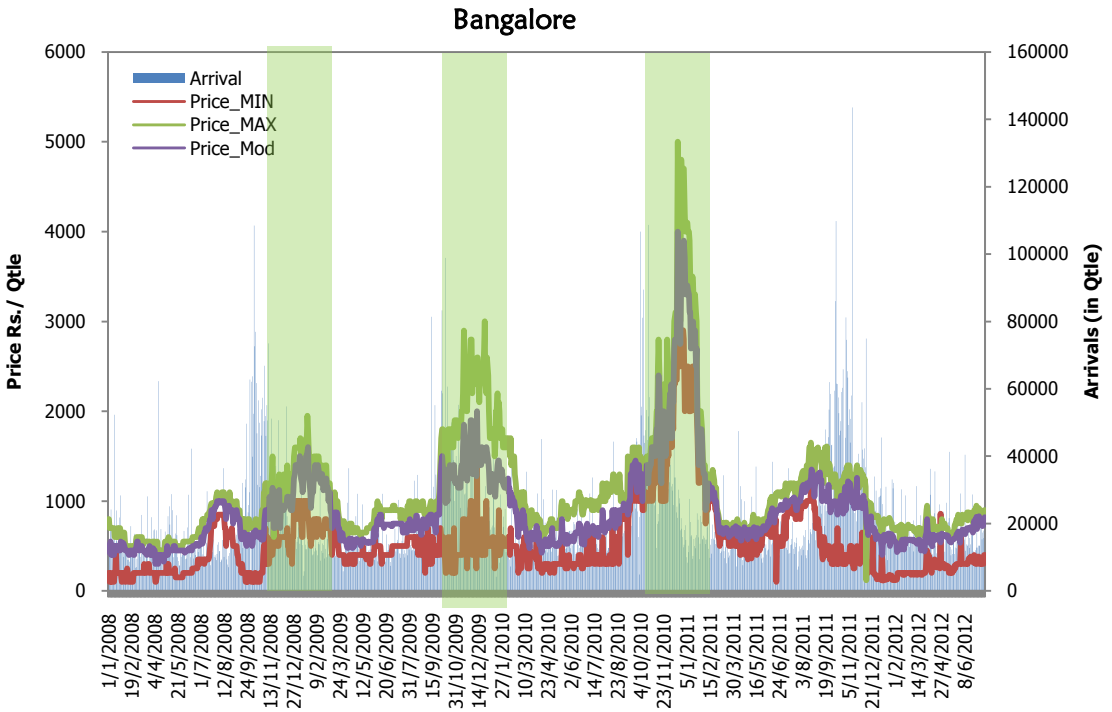


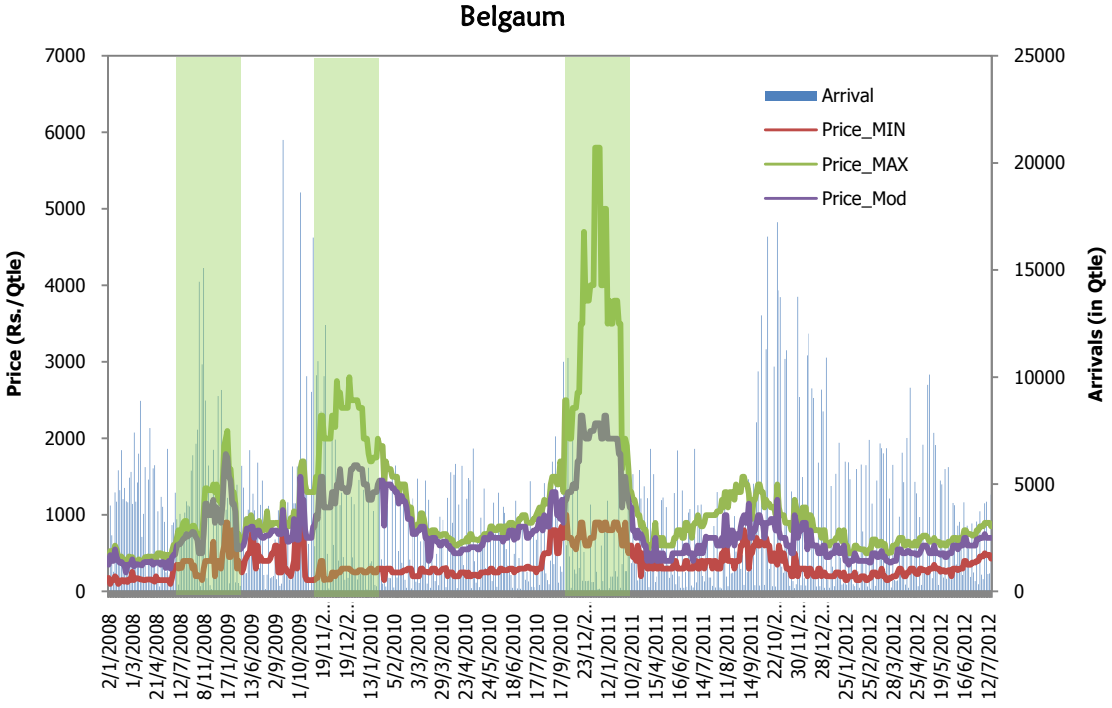

## Sangamner

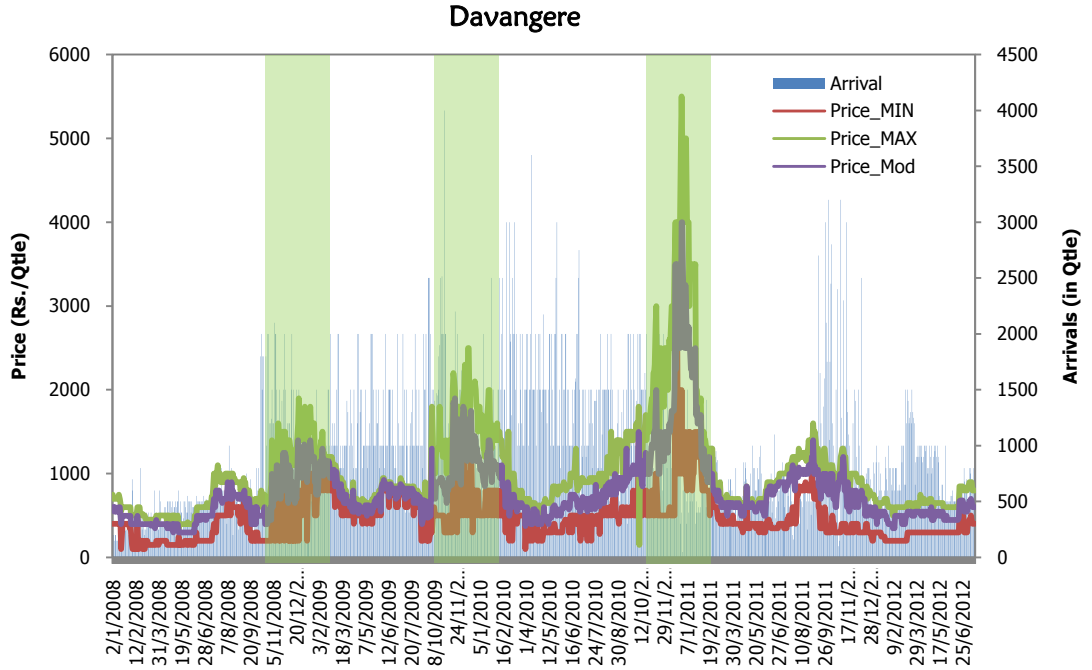


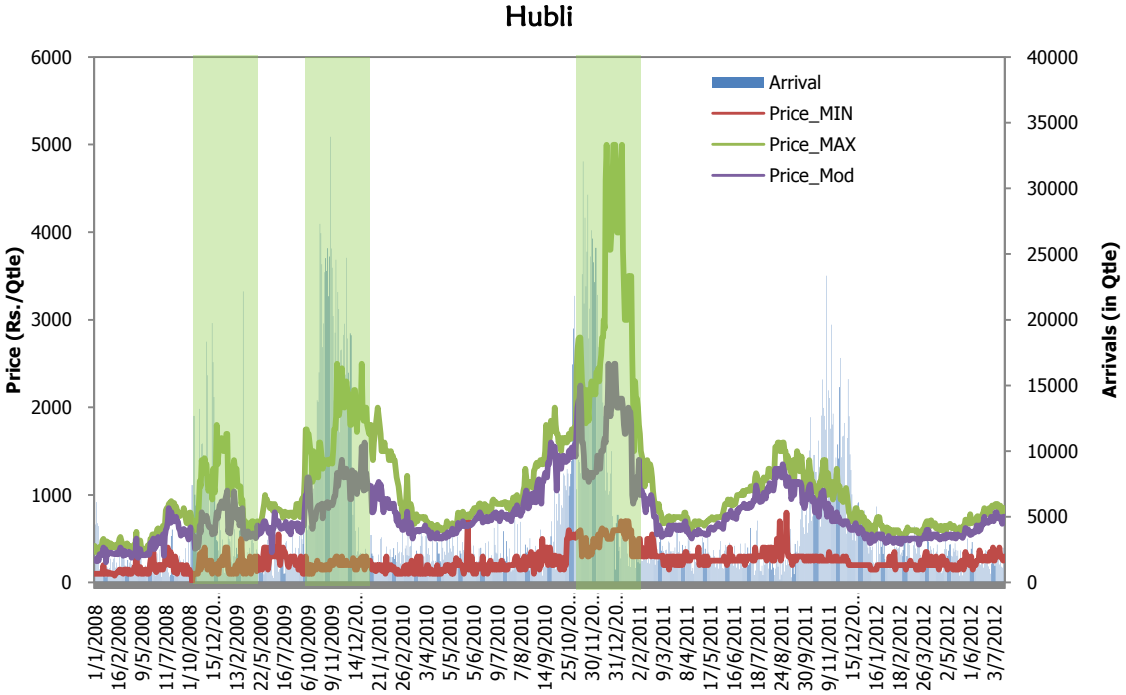

## Ahmednagar




Bangalore
Arrival
Price_MIN
Price_MAX
Price_Mod
Price Rs./ Qtle
Arrivals (in Qtle)
6000
5000
4000
3000
2000
1000
0
160000
140000
120000
100000
80000
60000
40000
20000
0
1/1/2008
19/2/2008
4/4/2008
21/5/2008
1/7/2008
12/8/2008
24/9/2008
13/11/2008
27/12/2008
9/2/2009
24/3/2009
12/5/2009
20/6/2009
31/7/2009
15/9/2009
31/10/2009
14/12/2009
27/1/2010
10/3/2010
23/4/2010
2/6/2010
14/7/2010
23/8/2010
4/10/2010
23/11/2010
5/1/2011
15/2/2011
30/3/2011
16/5/2011
24/6/2011
3/8/2011
19/9/2011
5/11/2011
21/12/2011
1/2/2012
14/3/2012
27/4/2012
8/6/2012


Belgaum
Arrival
Price_MIN
Price_MAX
Price_Mod
Price (Rs./Qtle)
Arrivals (in Qtle)
7000
6000
5000
4000
3000
2000
1000
0
25000
20000
15000
10000
5000
0
2/1/2008
1/3/2008
21/4/2008
12/7/2008
8/11/2008
17/1/2009
13/6/2009
2/9/2009
1/10/2009
19/11/2...
19/12/2...
13/1/2010
5/2/2010
3/3/2010
29/3/2010
23/4/2010
24/5/2010
18/6/2010
17/7/2010
17/9/2010
23/12/2...
12/1/2011
10/2/2011
15/4/2011
16/6/2011
14/7/2011
11/8/2011
14/9/2011
22/10/2...
30/11/2...
28/12/2...
25/1/2012
25/2/2012
28/3/2012
25/4/2012
19/5/2012
16/6/2012
12/7/2012




**Source** – Based on online data from NHRDF (2012)

### 2.4.3 Wholesale and Retail Prices in Different Markets

On December 23 of 2010 in The Times of India, a leading Indian newspaper daily ran an article titled "*The Great Indian Onion Robbery*". The starting paragraph of the article stated speculative traders are making super-profits by fixing prices in the onion trade while the government is playing around with *ad hoc* fixes. On Tuesday alone, wholesale traders in Delhi bought onion at about Rs.34 per kg while it was sold in retail at Rs. 80 per kg, the margin of Rs. 46 per kg or 135 per cent. The same article then went on investigating the amount fleeced from consumers by intermediaries and stated that the amount fleeced every day would be over Rs 4 crore in Delhi, Rs 81.4 lakh in Mumbai, Rs 10.5 crore in Bangalore, Rs 1.3 crore in Kolkata and so on. Of course, between the wholesaler buying the onion and the retailer getting it to the local market, there are transport costs, wastage and so on but can it be 135 per cent? What is an average margin that intermediaries make on onion sale in major markets? How justifiable the margin and can it be called robbery? These are some of the questions we would like to answer with secondary data on wholesale and retail prices in major markets

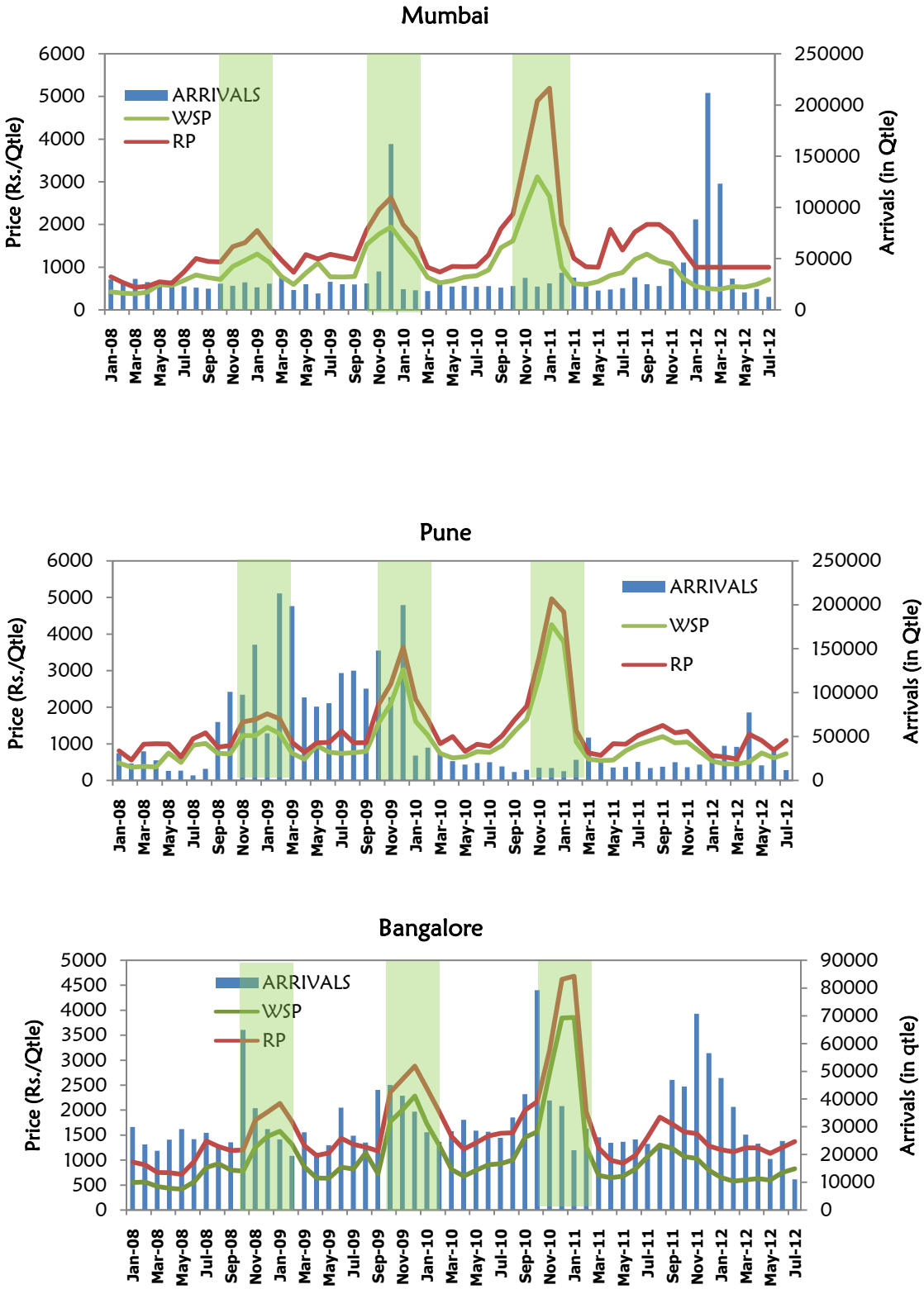
### The December 2010 Spurt in Onion Prices – Just Economics or More?-

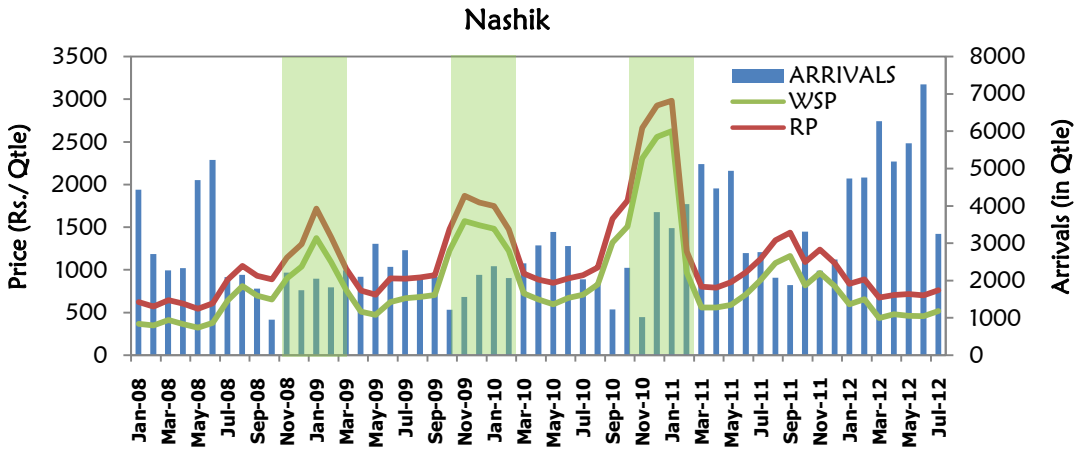
The December 2010 price spikes of onion in many ways cannot be explained fully by the fundamentals of demand-supply and hence underscores the need to delve into the agro-market structures and identify the real causes of price volatility in agricultural commodities.

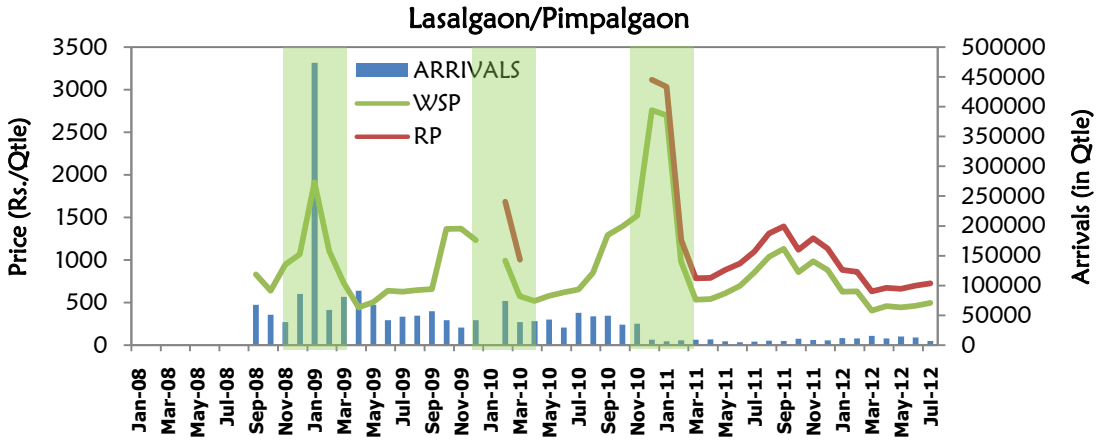
The graphs of wholesale and retail prices of onion in selected markets of Maharashtra and Karnataka are shown in Figure 2.2. It clearly shows that the prices charged by the wholesalers and retailers were highest during the period of November–December 2010. Without the markup of retailers, - the price of onion probably would not have gone even to 40 Rs/Kg. Therefore, giving indication retailers too do not remain behind in exploiting crisis situation for their profit. It is interesting to note that retailers' markup over the wholesale markets price ranged from 10 to 170 percent in almost all major markets of Maharashtra and Karnataka during 2008 to 2012 (Figure 2.3). In the crucial weeks of Nov-Dec., when wholesale prices remained high, retailers could not get higher margin due to low sale and lower incentives to push the price up. But, as soon as the wholesale prices start declining, most of the retailers particularly in metro cities shown strong rigidity in holding prices and earned margin ranging from 60 to 110 percent. Even if we consider their marketing cost between 40 to 90 percent, their profit margin is still quite high. This is peculiar problem originating from current market structure of onion in India.

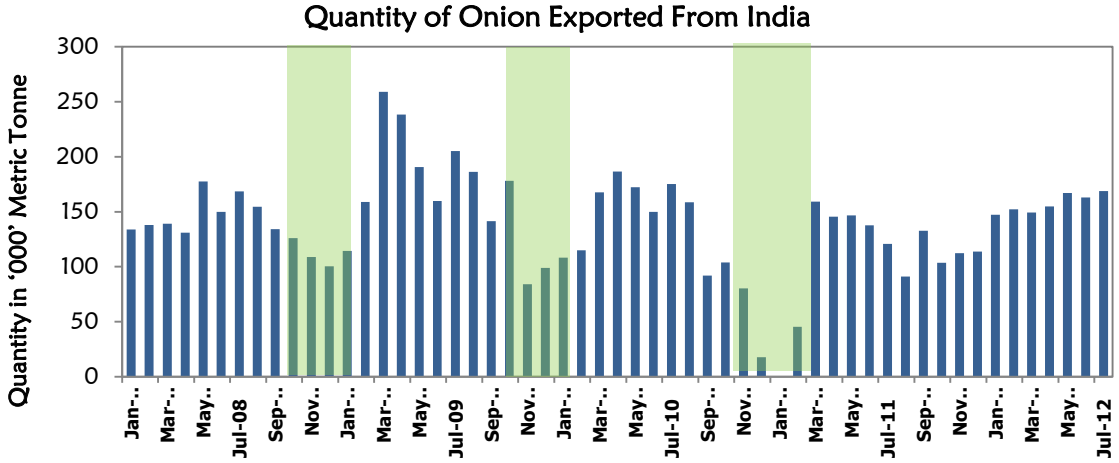
**This clearly shows that along with traders, retailers also exploit the situation of crisis for their own benefits.** At retail level there is still greater scope for increasing competition by allowing more number of private players, investment in retailing, storage and strengthening information dissemination system. If we take the analysis forward, the government policies also had a great role in the December 2010 high price episode. Unseasonal rains in late September and October 2010 destroyed the onion crop. Yet the government agencies allowed traders to export 1.33 lakh tones of Onion in October 2010. By the time the minimum export price was hiked to stop exports in November, the damage had already been done. Now, not having information of unseasonal rains in major onion producing area, which damaged around 35 per cent to 40 per cent of total product showed the negligence of government agencies. So the government also had its part in the December 2010 onion price episode.

Figure 2.2: Month-wise Total Arrivals, Wholesale Prices and Retail Prices in Selected Markets of Maharashtra and Karnataka and Quantity Exported from India: Jan 2008 to July 2012



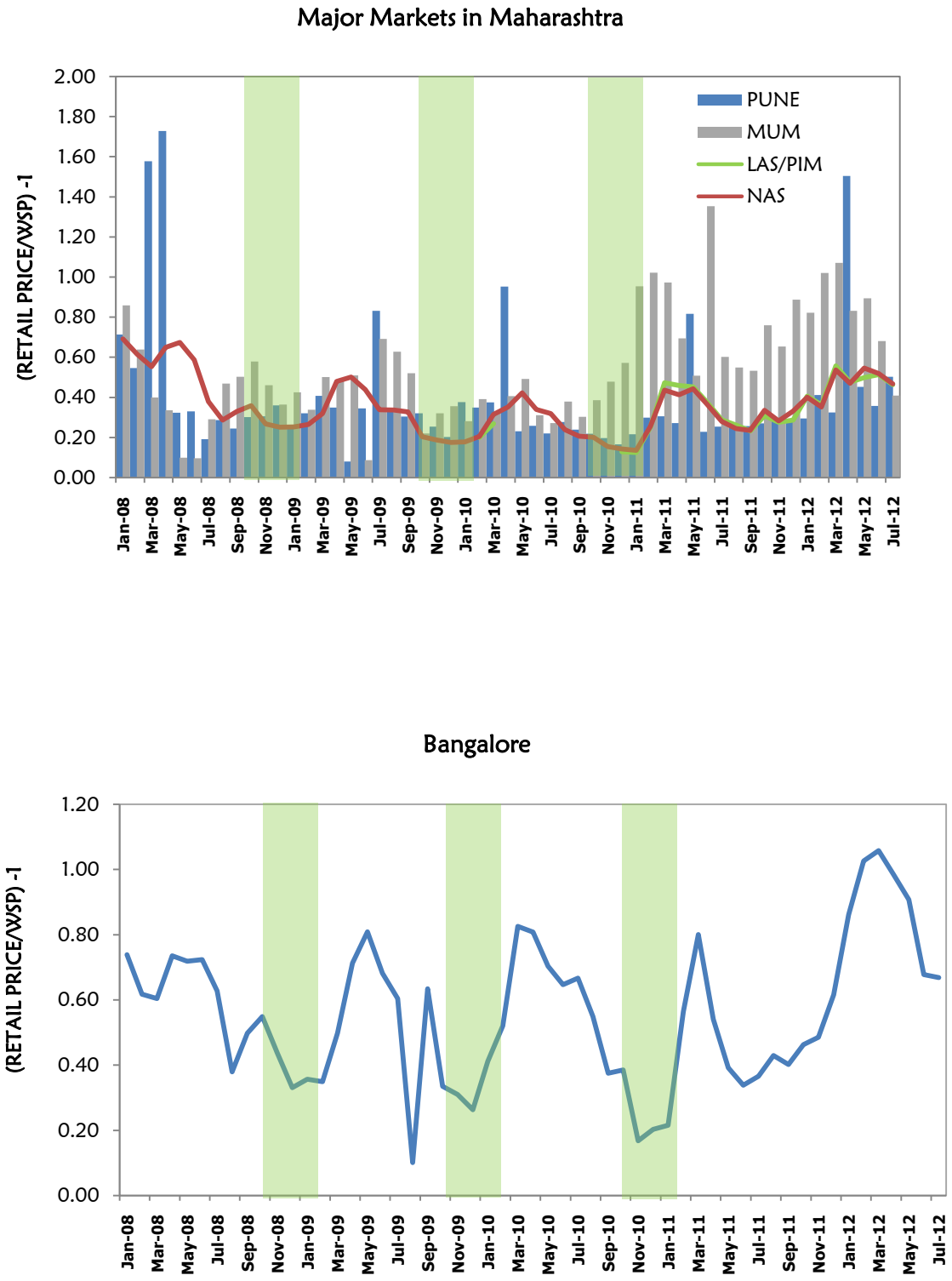


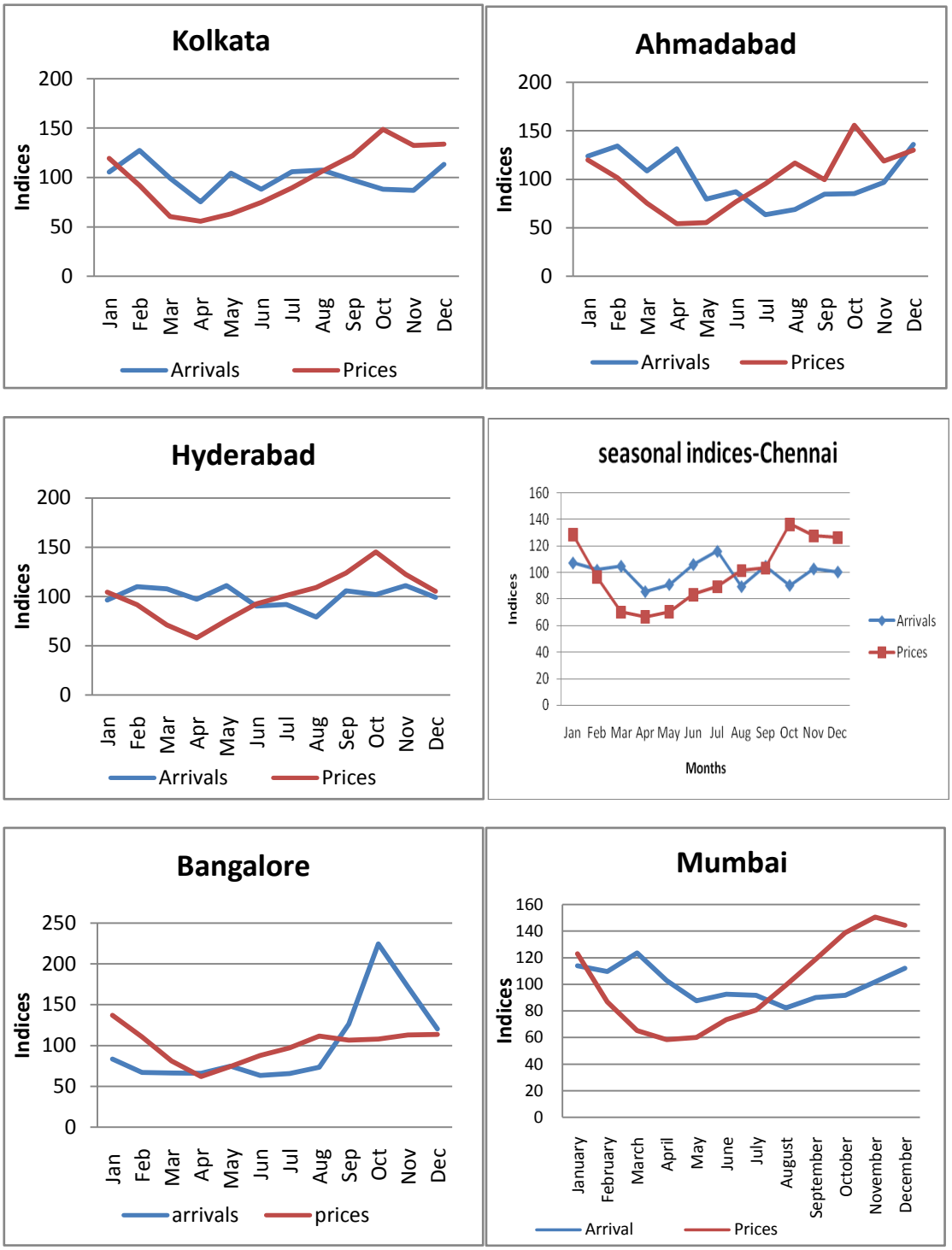

**Note** – breaks in trend line indicate data gap or non-availability of data
**Source** – Based on online data from National Horticultural Board (2012)

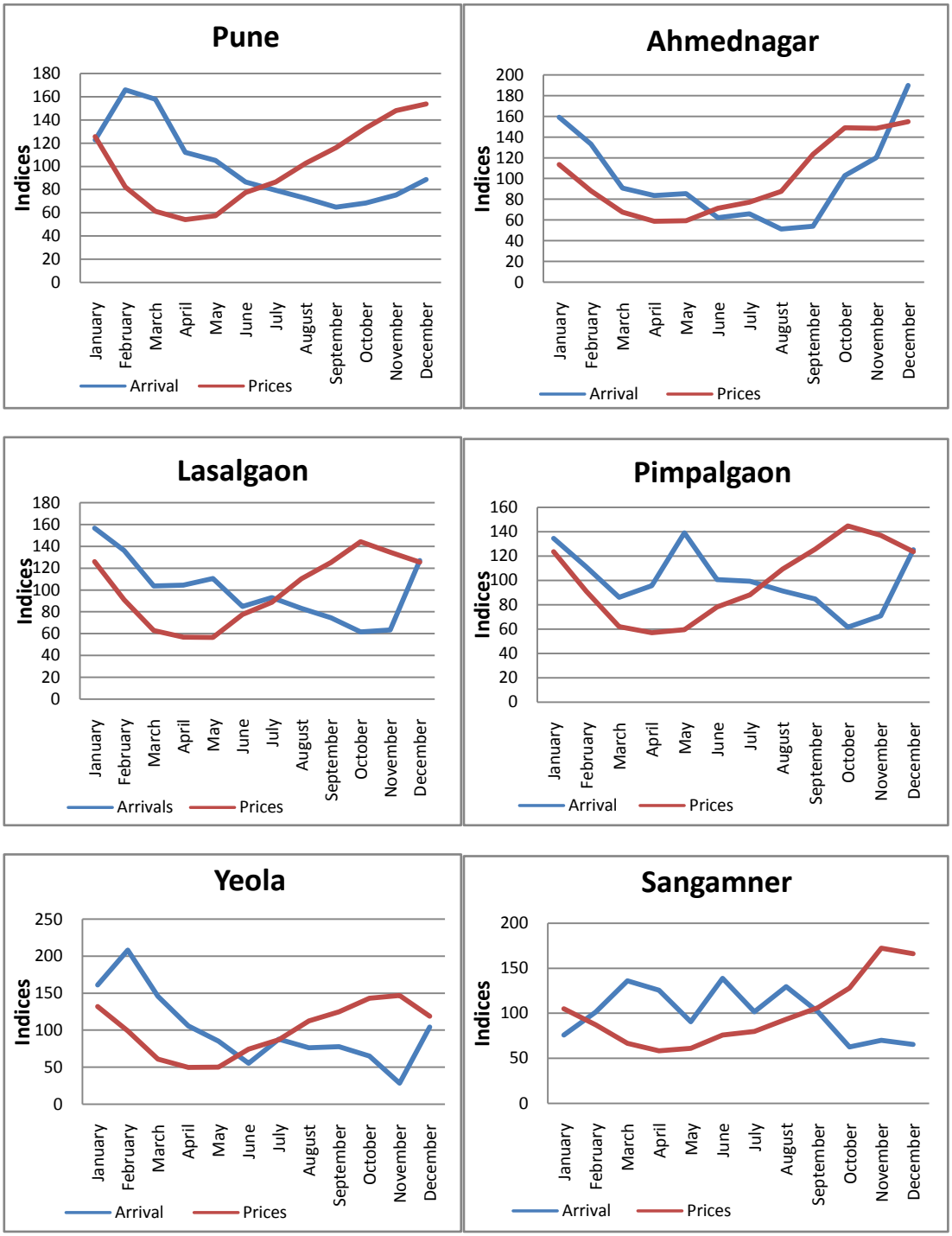
Figure 2.3: Retailers' Margins over Wholesale Prices in Selected Markets of Maharashtra and Karnataka – Jan 2008 to July 2012




**Source** – Based on online data from National Horticultural Board (2012)

Annexure Figure 2.1: Seasonal Index of Arrivals and Market Prices in Selected Markets of India






**Source** – Based on online data from NHRDF (2012)

## Annexure Table 2.1: Monthly Export of Onion from India

| | Monthly Export of Onion(Qty in MT) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | April | May | June | July | August | September | October | November | December | January | February | March |
| 1991-92 | 27020 | **42500** | 31030 | 30720 | 29828 | 23753 | 24317 | 33322 | 23817 | 33935 | **50288** | **55605** |
| 1992-93 | 33215 | **45372** | 30367 | 22582 | 29134 | **35813** | 30188 | 25614 | 22501 | 35025 | 31484 | **54390** |
| 1993-94 | 46549 | 45935 | **47768** | 37163 | **60953** | 37269 | 29139 | 10846 | 13441 | 21152 | 43161 | **55498** |
| 1994-95 | 58469 | 36210 | 42888 | 21567 | 37059 | 23825 | 21748 | 18947 | 45244 | **61737** | **59658** | **69529** |
| 1995-96 | 44573 | **52771** | 38659 | 29274 | 33181 | 25405 | 28235 | 15538 | 36015 | **45644** | 37405 | **47955** |
| 1996-97 | 45070 | 52693 | 30467 | 48215 | 50775 | 41222 | 33303 | 15880 | 30818 | **56881** | **53066** | **54490** |
| 1997-98 | **51713** | **54309** | 41958 | 45437 | 50070 | 40218 | 37760 | 35139 | 8832 | 7268 | 3486 | **70630** |
| 1998-99 | **70284** | **56765** | 40834 | 27853 | 15264 | 5486 | 537 | | | | 23908 | **57496** |
| 1999-2000 | **56305** | **70278** | 2235 | 50 | 25 | 1500 | | | 36830 | **58554** | 47952 | 44501 |
| 2000-01 | 19826 | 33635 | 21762 | 14805 | 17211 | **48034** | 23345 | 19308 | 34121 | 12093 | **41981** | **44086** |
| 2001-02 | 8385 | **77481** | 54056 | 58914 | 28540 | 26880 | 26057 | 20661 | 27542 | **70204** | 46229 | **61975** |
| 2002-03 | **59541** | **64311** | 41005 | 39448 | 36335 | 26619 | 25992 | 25276 | 49693 | 53770 | 57248 | **65973** |
| 2003-04 | 62636 | 69579 | 62811 | 49269 | 64464 | 63459 | 56242 | 72168 | **98580** | **100155** | 53495 | **87859** |
| 2004-05 | **93255** | 90154 | 86246 | **98317** | 78039 | 87785 | **90387** | 46690 | 70374 | 65525 | 64401 | 70275 |
| 2005-06 | **93798** | 56804 | 61081 | 65390 | 68519 | 45616 | 40646 | 47813 | 75477 | **82423** | 62094 | **78473** |
| 2006-07 | 88553 | 104343 | 92979 | 102603 | **115304** | 102163 | 88389 | **108170** | **123818** | 67194 | 73862 | 93684 |
| 2007-08 | 94167 | 84760 | 70976 | 61629 | 71320 | 64188 | 26067 | 58803 | **158734** | 133887 | **137781** | **139089** |
| 2008-09 | 131082 | **177626** | 149821 | **168498** | 154653 | 134246 | 125912 | 108907 | 100379 | 114317 | 158990 | **258849** |
| 2009-10 | **238234** | **190602** | 159765 | **205072** | 186144 | 141298 | 177962 | 84220 | 98921 | 108237 | 114983 | 167564 |
| 2010-11 | **186631** | **172188** | 149844 | **175034** | 158515 | 92078 | 103822 | 80314 | 17708 | 45409 | 159229 | |
| 2011-12 | 151179 | 116433 | 127903 | 94559 | 26640 | | | | | | | |

**Note-** Figures in bold and figures coloured with red represent months with significant and above average quantity exported in the particular year; Source- NHRDF

## Annexure Table 2.2: Value of Monthly Export of Onion

| | Value of the Monthly Export of Onion(Rs in Lakhs) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | April | May | June | July | August | September | October | November | December | January | February | March |
| 1991-92 | 1,088.6 | 1,472.6 | 1,118.6 | 1,387.8 | 1,661.1 | 1,766.9 | 1,417.8 | 1,674.9 | 920.1 | 1,042.0 | 1,503.4 | 1,242.9 |
| 1992-93 | 1,021.1 | 1,431.5 | 1,300.0 | 1,093.1 | 1,138.8 | 1,292.8 | 1,135.6 | 1,058.3 | 918.3 | 1,454.9 | 1,676.7 | 2,735.0 |
| 1993-94 | 2,426.0 | 1,974.9 | 2,214.4 | 1,602.5 | 2,607.3 | 1,922.7 | 2,077.4 | 910.7 | 1,517.3 | 2,061.9 | 2,511.2 | 2,584.9 |
| 1994-95 | 2,401.9 | 1,488.7 | 1,816.2 | 1,069.9 | 2,030.3 | 1,763.6 | 1,742.2 | 1,443.7 | 2,952.4 | 3,736.6 | 2,439.9 | 2,790.2 |
| 1995-96 | 2,001.8 | 2,715.0 | 2,331.0 | 2,178.1 | 2,727.3 | 2,749.2 | 2,518.7 | 1,801.6 | 3,863.2 | 3,136.4 | 1,948.3 | 2,903.1 |
| 1996-97 | 2,499.7 | 3,100.5 | 1,879.0 | 3,175.8 | 3,649.3 | 2,664.4 | 2,527.7 | 1,430.0 | 2,354.2 | 3,826.8 | 2,760.6 | 3,295.3 |
| 1997-98 | 2,737.8 | 2,619.0 | 2,280.6 | 2,301.9 | 2,699.5 | 2,484.6 | 2,241.7 | 2,902.4 | 1,211.2 | 1,405.3 | 608.7 | 6,032.9 |
| 1998-99 | 4,765.3 | 3,395.2 | 3,582.1 | 3,001.1 | 2,276.1 | 958.3 | 118.5 | | | | 2,816.4 | 5,523.3 |
| 1999-2000 | 5,510.1 | 7,237.6 | 219.6 | 6.1 | 3.5 | 144.2 | | | 2,995.1 | 4,628.0 | 3,156.5 | 2,802.9 |
| 2000-01 | 2,821.3 | 2,679.1 | 1,746.0 | 1,178.3 | 1,272.4 | 4,143.0 | 1,852.8 | 1,964.4 | 3,640.5 | 1,203.7 | 4,897.2 | 4,963.3 |
| 2001-02 | 801.2 | 5,532.7 | 3,692.0 | 4,134.0 | 2,211.2 | 3,390.6 | 2,458.8 | 2,192.3 | 2,883.7 | 5,724.3 | 3,469.1 | 4,650.7 |
| 2002-03 | 4,200.6 | 4,071.7 | 2,764.4 | 2,880.2 | 2,868.3 | 2,365.6 | 2,153.2 | 2,462.0 | 3,668.3 | 3,351.7 | 3,666.9 | 4,266.0 |
| 2003-04 | 4,677.6 | 5,547.8 | 4,729.7 | 4,232.4 | 5,706.5 | 6,060.9 | 5,841.2 | 8,142.6 | 9,621.9 | 12,074.1 | 6,303.8 | 9,184.0 |
| 2004-05 | 7,459.2 | 6,369.5 | 7,252.0 | 8,954.5 | 7,163.1 | 8,187.8 | 8,828.0 | 4,742.9 | 6,564.9 | 5,610.0 | 5,113.8 | 5,503.6 |
| 2005-06 | 7,216.4 | 4,636.7 | 5,355.1 | 5,924.6 | 6,893.6 | 4,962.3 | 4,449.3 | 5,347.8 | 8,042.8 | 7,434.2 | 5,056.5 | 6,277.4 |
| 2006-07 | 6,457.3 | 7,917.8 | 7,632.9 | 8,242.9 | 9,274.0 | 9,269.2 | 8,127.0 | 11,072.6 | 12,920.6 | 8,043.1 | 10,554.3 | 14,031.2 |
| 2007-08 | 11,160.8 | 8,114.0 | 7,690.0 | 8,334.6 | 10,905.7 | 11,952.8 | 5,238.4 | 10,804.7 | 19,288.6 | 13,213.2 | 11,101.0 | 10,778.6 |
| 2008-09 | 10,670.8 | 14,411.4 | 12,035.0 | 17,481.1 | 18,192.1 | 16,507.9 | 15,694.7 | 16,304.6 | 17,433.9 | 22,208.9 | 26,513.0 | 36,858.8 |
| 2009-10 | 27,454.5 | 18,989.3 | 16,619.5 | 23,717.4 | 22,117.2 | 17,672.1 | 26,202.7 | 19,182.4 | 23,542.0 | 25,825.6 | 26,721.4 | 35,384.1 |
| 2010-11 | 24,047.2 | 19,629.2 | 18,495.7 | 22,511.6 | 20,824.6 | 17,011.0 | 24,256.7 | 20,288.3 | 5,606.5 | 13,494.0 | 29,740.9 | |
| 2011-12 | 11,475.2 | 8,864.4 | 11,511.3 | 9,712.1 | 3,596.4 | 1,32,339.0 | 1,02,139.0 | 92,768.0 | 1,21,509.0 | 1,45,557.0 | 1,15,851.0 | |

Source- NHRDF

Annexure Table 2.3: Seasonal index of Arrivals and Prices in Major Markets (2002-2011)

| Markets | Seasonal index | Jan | Feb | March | April | May | June | July | August | Sept. | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangalore | Arrivals | ↓83.29 | ↓66.9 | ↓66.02 | ↓65.81 | ↓74.38 | ↓63.1 | ↓65.35 | ↓73.16 | →126.2 | ↑224.2 | ↑171.6 | →120 |
| | Prices | ↑136.8 | →110.4 | ↓80.79 | ↓61.87 | ↓74.29 | →87.61 | →96.94 | →111.4 | →106.2 | →107.7 | ↑112.6 | ↑113.4 |
| Ahmadabad | Arrivals | ↑123.7 | ↑134.2 | →108.7 | ↑131.4 | ↓79.53 | ↓87.22 | ↓63.57 | ↓68.9 | ↓84.8 | ↓85.15 | →96.9 | ↑135.9 |
| | Prices | →120.1 | →101.6 | ↓75.45 | ↓54.24 | ↓55.39 | ↓76.78 | →95.44 | →116.9 | →99.59 | ↑155.7 | →118.8 | ↑130 |
| Hyderabad | Arrivals | →96.24 | ↑109.9 | ↑107.7 | →96.98 | ↑110.9 | →90.25 | →91.69 | ↓79.04 | ↑105.6 | ↑101.8 | ↑110.9 | →99.1 |
| | Prices | →104.5 | →91.64 | ↓70.88 | ↓57.87 | ↓75.57 | →92.38 | →101.1 | →109.2 | ↑123.8 | ↑145.3 | ↑122.5 | →105.3 |
| Mumbai | Arrivals | ↑119.4 | ↑117.5 | ↑122.2 | →100.7 | ↓84.4 | →97.43 | →97.51 | ↓78.21 | ↓86.17 | ↓86.6 | →100.8 | ↑109.5 |
| | Prices | →114.9 | →86.81 | ↓64.4 | ↓56.87 | ↓67.02 | ↓79.44 | →86.76 | →107.7 | ↑123.8 | ↑145.2 | ↑136.5 | ↑130.6 |
| Delhi | Arrivals | ↓81.46 | ↓84.54 | →111.5 | →99.85 | →104.4 | ↑115.6 | →108.6 | ↓88.18 | ↓82.78 | ↓84.13 | ↑132 | →107 |
| | Prices | ↑127.4 | →103.8 | ↓81.84 | ↓64.4 | ↓72.65 | ↓74.71 | ↓81.01 | ↓91.2 | →108.2 | ↑147.3 | ↑126.3 | ↑121.2 |
| Kolkata | Arrivals | →105.7 | ↑127.5 | →99.33 | ↓75.4 | →104.5 | ↓88.09 | →105.8 | →107.7 | →97.65 | ↓88.07 | ↓87.02 | ↑113.4 |
| | Prices | ↑119.6 | →92.18 | ↓60.51 | ↓55.73 | ↓63.18 | ↓74.86 | →89.69 | →106.6 | ↑122.3 | ↑148.9 | ↑132.7 | ↑133.8 |
| Chennai | Arrivals | ↑107.3 | →101.9 | →104.8 | ↓85.44 | ↓90.84 | ↑106.1 | ↑116.1 | ↓89.3 | →104.8 | ↓90.21 | →102.8 | →100.4 |
| | Prices | ↑128.5 | →96.54 | ↓70.13 | ↓66.33 | ↓70.39 | ↓83.28 | ↓89.31 | →101.5 | →103.3 | ↑136.5 | ↑127.8 | ↑126.5 |

**Note**- the months with above average seasonal index has been coloured with yellow and red colour.

Annexure Table: 2.4 Wholesale Price, Retail Price and Arrivals

| Markets | | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangalore | Wholesale price | 2226 | 1288 | 629 | 550 | 499 | 589 | 780 | 905 | 1168 | 1372 | 1089 | 742 |
| | Retail price | 4683 | 1967 | 1242 | 995 | 939 | 1097 | 1461 | 1858 | 1724 | 1561 | 1530 | 1344 |
| | | ↓ 47.53 | → 65.48 | ↓ 50.64 | ↓ 55.28 | ↓ 53.14 | ↓ 53.69 | ↓ 53.39 | ↓ 48.71 | → 67.75 | ↑ 87.89 | → 71.18 | ↓ 55.21 |
| | Arrivals | ↓ 21500 | ↓ 29370 | ↓ 26190 | ↓ 24250 | ↓ 24550 | ↓ 25450 | ↓ 23820 | ↓ 23860 | → 46860 | → 44500 | ↑ 70700 | → 44600 |
| Mumbai | Wholesale price | 2660 | 994 | 614 | 596 | 663 | 802 | 874 | 1178 | 1305 | 1137 | 1078 | 823 |
| | Retail price | 5196 | 2009 | 1211 | 1010 | 1000 | 1887 | 1400 | 1825 | 2000 | 2000 | 1783 | 1520 |
| | | → 51.19 | ↓ 49.48 | → 50.70 | ↑ 59.01 | ↑ 66.30 | ↓ 42.50 | ↑ 62.43 | ↑ 64.55 | ↑ 65.25 | → 56.85 | ↑ 60.46 | → 54.14 |
| | Arrivals | ↓ 25874 | ↑ 36145 | → 31530 | ↓ 23095 | ↓ 18750 | ↓ 19840 | ↓ 21073 | → 31712 | ↓ 24951 | ↓ 23132 | ↑ 40401 | ↓ 19590 |
| Hyderabad | Wholesale price | 2875 | 1267 | 586 | 461 | 400 | 515 | 752 | 1243 | 1066 | 924 | 842 | 678 |
| | Retail price | 4417 | 1805 | 1052 | 879 | 848 | 1258 | 1208 | 1847 | 1556 | 1446 | 1391 | 1204 |
| | | ↑ 65.09 | ↑ 70.19 | → 55.70 | → 52.45 | ↓ 47.17 | ↓ 40.94 | ↑ 62.25 | ↑ 67.30 | ↑ 68.51 | ↑ 63.90 | → 60.53 | → 56.31 |
| | Arrivals | ↓ 9300 | ↓ 8598 | ↓ 11021 | ↓ 5738 | ↓ 6837 | ↓ 8009 | ↓ 8028 | → 15857 | ↓ 11567 | ↓ 10685 | → 18938 | ↑ 26376 |
| Kolkata | Wholesale price | 3353 | 1255 | 649 | 568 | 751 | 889 | 1166 | 1418 | 1468 | 1332 | 1203 | 1017 |
| | Retail price | 4952 | 2279 | 1308 | 1134 | 1320 | 1442 | 1787 | 2248 | 2400 | 2063 | 2080 | 1781 |
| | | ↑ 67.71 | ↓ 55.07 | ↓ 49.62 | ↓ 50.09 | → 56.89 | → 61.65 | ↑ 65.25 | ↑ 63.08 | → 61.17 | ↑ 64.57 | → 57.84 | → 57.10 |
| | Arrivals | ↓ 7426 | ↓ 18604 | ↓ 12024 | ↓ 10217 | ↓ 10180 | ↓ 15786 | → 23408 | ↓ 21380 | → 26672 | → 26592 | ↑ 52960 | ↓ 18048 |
| Delhi | Wholesale price | 3255 | 1162 | 693 | 570 | 559 | 681 | 935 | 1182 | 1285 | 1196 | 945 | 866 |
| | Retail price | 4422 | 2157 | 1638 | 1109 | 1040 | 1100 | 1265 | 1531 | 1664 | 1796 | 1635 | 1427 |
| | | ↑ 73.61 | → 53.87 | ↓ 42.31 | ↓ 51.40 | ↓ 53.75 | → 61.91 | ↑ 73.91 | ↑ 77.20 | ↑ 77.22 | ↑ 66.59 | → 57.80 | → 60.69 |
| | Arrivals | ↓ 15490 | ↓ 18983 | ↑ 27218 | → 21268 | → 24289 | ↑ 29025 | ↑ 26601 | → 23052 | → 24414 | → 23413 | ↑ 29971 | → 23030 |
| Chennai | Wholesale price | 3924 | 1589 | 880 | 1010 | 926 | 1056 | 1165 | 1388 | 1441 | 1476 | 1422 | 1433 |
| | Retail price | 5408 | 3530 | 1556 | 1500 | 1320 | 1504 | 1663 | 1945 | 2002 | 2039 | 1978 | 1750 |
| | | ↑ 72.56 | ↓ 45.01 | ↓ 56.56 | → 67.33 | ↑ 70.15 | ↑ 70.21 | ↑ 70.05 | ↑ 71.36 | ↑ 71.98 | ↑ 72.39 | ↑ 71.89 | ↑ 81.89 |
| | Arrivals | ↓ 11250 | → 12850 | ↑ 14480 | ↓ 10580 | → 13710 | ↓ 11860 | → 12710 | ↑ 16425 | ↑ 16410 | ↓ 11765 | ↓ 10861 | ↓ 9679 |
| Jaipur | Wholesale price | 2226 | 1288 | 629 | 550 | 499 | 589 | 780 | 905 | 1168 | 1372 | 1089 | 742 |
| | Retail price | 4192 | 2291 | 1014 | 905 | 828 | 965 | 1290 | 1483 | 2031 | 2487 | 1883 | 1235 |
| | | ↓ 53.10 | → 56.22 | ↑ 62.03 | ↑ 60.77 | ↑ 60.27 | ↑ 61.04 | ↑ 60.47 | ↑ 61.02 | → 57.51 | ↓ 55.17 | → 57.83 | ↑ 60.08 |
| | Arrivals | ↓ 3581 | → 6254 | ↑ 11580 | → 7261 | ↑ 9170 | ↑ 10304 | → 7324 | → 8498 | → 8771 | → 7775 | → 6408 | ↓ 6039 |

# Chapter 3

# Market Structure of Onion

## 3.1 Introduction

Agricultural marketing in India is operated by both private traders and government agencies. However, private traders largely dominate the sector. The objectives and form of government interventions have changed over time with the intention of protecting the interest of producers and consumers. A number of government agencies like Food Corporation of India (FCI), The National Agriculture Cooperative Marketing Federation of India (NAFED) and The Directorate of Marketing and Inspection (DMI), specialized marketing boards and a network of cooperatives at the local, state and national level involve themselves at different stages and with different responsibilities in marketing of agricultural produce. In order to improve the marketing system of farm products, wholesale markets were regulated extensively in the 1950s and 1960s with the implementation of Agricultural Produce Marketing Committee (APMC) Act. The APMCs were established in each state by the respective state governments with a view to regulate the marketing of agricultural produce in market areas. The regulation of markets had several positive features such as sale through auction method, reliable weighing, standardized market charges, payment of cash to farmers without undue deductions, dispute settlement mechanism, and reduction in physical losses of produce and availability of several amenities in market yards.

Despite several advantages that regulated markets have had, there still existed several limitations. A number of regulated markets could not function efficiently due to collusion/formation of cartels among traders (Banerji 2005; Banerji and Meenakshi 2002; Meenakshi Banerji 2005; Deshpande and Prachitha 2004; Raghunathan 2004;). There was similar collusion in the lack of prompt action by the Market Committee against breach of rules by any trader (Jha and Srinivasan 2004). The Market Committees for all practical purposes were dominated by traders' interest. Also, at times the proportion of village sales was so large that it made the operation of the APMC Act ineffective in providing fair price to the producer (Deshpande and Prachitha 2004). In some regulated markets, there was no elected Market Committee, nor a market yard of the Committee where produce could arrive and auctions take place. Hence sales often took place in the shop of the commission agent without any supervision. Further, the market fee collected by the APMC was barely used for development of the market and provision of modern facilities. There was often congestion in the market yard and farmers had to wait for long time to sell their produce. Also, there were no proper facilities for the farmer to wait till his produce was finally sold. Finally after disposing their produce off, deductions were made from the receipt of the produce on grounds that produce was not up to the mark. The regulated markets also led to the monopolization of trade by way of granting licenses to intermediaries that constrain the entry of new functionaries and charge self-determined rates for providing services (NCAER 2012).

In view of the uneven development of regulated markets, the inability to fight the vested interests of traders, the persistence of traces of collusion amongst traders in regulated markets deprived the farmer of his due share in the final consumer's price, besides facing other hardships during sale of his produce (Banerji 2005; Banerji and Meenakshi 2002; Meenakshi Banerji 2005; Deshpande and Prachitha 2004; NCAER 2012). Since economic reforms of 1991, these issues have become even more critical in the post liberalisation period where competition and efficiency are key drivers of economic growth and its sustenance. In new economic environment, agricultural marketing and exports of agricultural commodities are increasingly assuming greater importance and therefore need for efficient supply chain management, infrastructural facilities and free flow of market information. To address these bottlenecks, Government of India did introduce reforms in marketing sector like APMC Model Act 2003[6],

[6] The Act aims at complete transformation of agricultural marketing in India by making it more

future markets, direct marketing, private markets and contract farming, but its effectiveness in improving the efficiency of the marketing system, attracting private sector investment in agricultural marketing and giving due share of farmers in the consumer rupee back to them is yet to be seen.

The process of liberalization initiated in early 1990s has relaxed many controls on the agricultural markets and market-led commercialization is allowed to operate freely. Despite regulation of markets, these have never been favorable to the farmers and often the traders and traders' lobby dominated the market enterprises. As a result, even though the wholesale price index shows a small increase, the actual prices received by the farmers are far below the wholesale prices. Market imperfections are not only relative in the product market but have also spread in the factor market. All this led to the farmers and consumers being at the receiving end in the market. We hypothesize that the market forces and infrastructure in current situation has a role in imperfect outcomes for both the farmers and the consumers.

### 3.2 Market Structure of Onion

Market structure of Onion in India is summarized below.

- Small holding of farmers: Land holding of onion growers is very low. Most of the farmers own less land and due to unfavorable weather conditions and need to spread price risk over a period after harvest even one big vehicle is not available with a single farmer field at a given time. Such small availability implies that the individual farmers have a little say in the final price of the onion in the market.
- Marketing produce as per grade necessity: Different regions and markets of India have different requirements of Onion (while eastern India / Bangladesh etc. markets prefer small sized onion, North and West Indian markets prefer bigger sized onion). Traders buy small lots from the market yards and pool the produce for sorting / grading at their pack houses and sends different grades to different markets all over India depending upon the grade requirements and price at a particular market. Lack of trading expertise, market knowledge and risk bearing capacity has prevented most of the farmers to make a significant dent in onion trading. So, most of the trading is in private hands.
- Local markets act as a reference market to small growers: Farmers generally take reference of the local markets' rates, while traders compare rates of all markets, including major distant and export market and then decide where to send their produce of a particular grade. This brings greater profits to them.
- Non-sustainability of exclusive onion Associations: Because of various agro-climatic reasons, onion belt is in actually a scattered chunk of large number of smaller sub belts. For a particular distant market, for example Delhi or Bangalore, most of these sub belts are active for a short period as far as fresh onion flows are concerned. Active period in some cases is only a fortnight or a month. Because of this reason, exclusive onion associations (farmers associations, co-operatives) have not been successful as short period of business cannot sustain their yearlong expenses.
- Concentration of large storage capacities with traders. For historical and financial reasons, large storage capacities for onion have remained with private traders and that too in Nasik belt. Traders can buy the whole stored lots and provide sorted / graded produce to retailers or buyers as per their requirement at their risk and cost.
- Vertical Integration of various market functions by onion traders. Traders wear many hats by bending (not breaking) the APMC rules and bye laws. Many onion traders are commission agent cum wholesalers, order suppliers, forwarders cum store owners and some are even transport or railway agent too. They have different firms with or without licenses to handle same function, let's

market and growth oriented. It enables producers to undertake market-driven production planning, facilitate integration of farm production with domestic and global markets and attract massive investments for building up post-harvest infrastructure.

say 'being a commission agent". Such multiple roles by select few big traders have brought inequality between traders. So big have become very big which has created monopolistic conditions. This lack of capacity to conduct multiple roles prevents farmers, their organizations to compete with traders.

- Existence of established traders and barrier to new entry: In important onion markets, the commission agents and the traders dealing with onion are well established and have an average experience of 20 years. This shows the lack of new entries in the market as well as domination of the established market players.
- Less number of Active traders during slack season- the numbers of active traders are significantly low during the slack season of the year in all the markets. In Gadag market- only one trader is active for three to four months' slack season, in Belgaum the number is ten to fifteen and so on. Such reduced number of traders creates an oligopolistic situation

## 3.3 Market Infrastructure

Market infrastructure is important not only for the performance of various marketing functions and expansion of the size of the market but also to disseminate appropriate price signals to farmers. Given the appropriate irrigation and technology development, it is the efficient infrastructure, good roads, communication and markets etc., creates an enabling environment for farmers to realize a higher price and also benefits the consumer. Their proper developments lead to reduction in marketing costs.

The poor state of infrastructure is the main bottleneck in many areas. If a gradual trend towards commercialization and diversification of agriculture is to be sustained and promoted, rural infrastructure supporting trade in farm products and inputs and processing of the produce must be strengthened with an emphasis on its quality.

Availability of different marketing infrastructure affects the choice of technology to be adopted, reduces the cost of transportation produces powerful impetus to production and also affects income distribution in favour of small and marginal farmers by raising their access to the marketing. Looking to this, every nation poised for growth includes development of agricultural marketing infrastructure as part of its agricultural development strategy. Studies have shown that infrastructure and agricultural development is highly correlated. In the context of need of stepping up agricultural growth, emphasis should be given for developing rural infrastructure.

### 3.3.1 Agricultural Marketing and Market Infrastructure in Karnataka

#### *Agricultural Marketing System at the Primary Level*

Agricultural marketing system at the primary level in Karnataka involves four broad marketing channels, viz., (i) direct to consumers; (ii) through private wholesalers and retailers; (iii) through public agencies (regulated markets) or cooperatives; and (iv) through processors. The share of these channels in total marketed product varies from commodity to commodity and across regions. Marketing structure of the agricultural produce differs according to products. Among these channels, large quantity of produce is transacted through the regulated market channel. Food grains are mostly marketed at the primary village market or in the regulated market yard. The procurement of grains takes place only in the case of rice and through the processing mills. Oil-seeds are largely sold through the regulated markets and directly to the processors. But other commercial crops like onion, banana, arecanut, coconut, sugarcane and cotton have developed specific marketing channels.

A few changes have occurred in the agricultural marketing sector after the creation of marketing institutions and the infrastructure. These include: a) increase in the market arrivals as per cent to total output; b) reduction in the market inefficiencies in terms of unauthorised charges and irrational grading; c) dissemination of market information at the regulated market yard; d) storage facilities and place to stay created for the farmers; e) marketing charges payable by farmers either dropped, standardized

or liability shifted to the buyers; f) proportion of sale in villages reduced; and g) the proportion of distress sale significantly reduced.

*Marketing Structure and Regulations*

a) **Marketing Structure of Agricultural Commodities:** The present regulated marketing system involves five stages. As a first step, the farmer brings the produce at the market during harvest season. These are graded by the graders and then heaped in different places in the market during the second stage. The traders or their representatives enter the market and prepare a list of prices offered to different heaps of commodities marking the third step. The slips are then processed and the heaps of commodities are assigned to the highest bidder, which constitutes the next stage. Finally, the trader settles the transactions and takes away the produce.

b) **Market Regulations:** The Karnataka Agricultural Produce Marketing (Regulation) Act follows the model act given by Government of India and hence not very different in content as against the other States. The Act has clear provisions about bringing fairness in the sale of agricultural produce, providing marketing facilities, dispute settlements and utilising market funds for providing in-house infrastructural facilities and making available credit advances to farmers. The Market Committees govern marketing practices in the regulated markets and have jurisdiction over the entire market area. The Committee is empowered to implement the provisions of this Act and the rules and bye-laws made there under in the market area. It grants or renews the licenses for use of any place in the market area for the sale of the notified agricultural produce or for operating therein as market functionaries in relation to marketing, after making such enquiries as it deems fit. It has the power to levy market fee on the traders and also impose penalty where a trader fails to pay. The Committee is also entrusted with the maintaining of proper checks on all receipts and payments by its officers, proper execution of all works chargeable to the market committee funds, maintaining register of arrivals and fees collected, preparing plans and estimates for works, publishing a statement of assets and liabilities, preparing and adopting budget for the ensuring year and regulating expenditure according to the budget, providing marketing information and arranging for temporary storage or stocking of notified crops in the market yards.

*Market Infrastructure*

Inadequacy of market infrastructure has been the main reason for market imperfection. A few studies have shown that owing to the new impetus on the infrastructure front, there has been significant increase in horizontal and vertical integration of agricultural markets. It has also been pointed out that larger share of the marketable surplus reaches the market now and most of the markets have the needed basic facilities. However, lot remains to be done in creating adequate marketing infrastructure in rural areas. It is high time that the investment in this sector comes from private sources. The state has to take initiatives for creating conducive environment for attracting private investment. So far the case of Karnataka is concerned, the agricultural market infrastructure in the State has been inadequate to handle the situation squarely. It comes out from table 3.1 that the inadequate infrastructure significantly impacts turnover from the markets. In 2009-10, for every per lakh hectare of gross cropped area in the State, there were only 1.13 main-markets and 3.89 total markets. Notably, the density of main markets though increased at faster rate during 1994-95 to 2003-04, but thereafter started showing decline and it is hovouring around 1.13 per lakh ha.

The Department of Agricultural Marketing is continuously engaged in improving the functioning of the Agricultural Marketing System in the State. It has aimed to regulate the marketing of agricultural produce and create a competitive marketing environment for price stability of the notified agricultural produce in the State. The Department currently regulates 146 main markets and 355 sub-markets in the State and handles a turnover of Rs.17, 796.41 crores of agricultural produce (table 3.1 and annexure table 3.1). These markets have their own grading centres. But, despite of these, the department has been successful to eliminate all the imperfections existed in the markets. There are still some imperfections which include: (i)

post-harvest glut in the market due to low and consequent price collapse; (ii) inter-locking of credit and commodity markets; (iii) inefficiency in grading and packaging; (iv) non-issue of sale-slips to the farmers in some markets; (v) high-handedness of Agricultural Produce Market Committees (APMCs) in providing marketing services; and (vi) creating conditions such that the farmer cannot go back from the market yard without selling the product.

## Table 3.1: Agricultural Marketing Activities in Karnataka: Some Indicators

| Year | Main Markets | Sub Markets | Total Markets | Annual Turn-over Value | Markets per Lakh ha. of GSA | |
|---|---|---|---|---|---|---|
| | (Nos) | (Nos) | (Nos) | (Rs. in Crores) | Main | Total |
| 1990-91 | 116 | 295 | 411 | 595.63 | 0.99 | 3.50 |
| 1991-92 | 116 | 303 | 419 | 762.46 | 0.94 | 3.38 |
| 1992-93 | 120 | 304 | 424 | 745.82 | 0.98 | 3.47 |
| 1993-94 | 122 | 312 | 434 | 837.99 | 0.98 | 3.49 |
| 1994-95 | 124 | 312 | 436 | NA | 1.03 | 3.63 |
| 1995-96 | 128 | 324 | 452 | 4974.5 | 1.07 | 3.78 |
| 1996-97 | 133 | 329 | 462 | 5595.1 | 1.08 | 3.74 |
| 1997-98 | 137 | 332 | 469 | 5554.4 | 1.17 | 4.01 |
| 1998-99 | 137 | 332 | 473 | 6500.8 | 1.11 | 3.84 |
| 1999-00 | 140 | 333 | 473 | 6648.0 | 1.16 | 3.91 |
| 2000-01 | 141 | 343 | 484 | 7512.2 | 1.15 | 3.94 |
| 2001-02 | 141 | 342 | 483 | 7902.4 | 1.21 | 4.14 |
| 2002-03 | 144 | 343 | 487 | 8127.4 | 1.25 | 4.22 |
| 2003-04 | 145 | 350 | 495 | 8437.1 | 1.27 | 4.32 |
| 2004-05 | 145 | 347 | 492 | 8297.8 | 1.13 | 3.84 |
| 2005-06 | 145 | 350 | 495 | 9941.6 | 1.11 | 3.80 |
| 2006-07 | 146 | 352 | 498 | 11088.09 | 1.17 | 4.00 |
| 2007-08 | 146 | 352 | 498 | 13284.14 | 1.13 | 3.86 |
| 2009-10 | 146 | 355 | 501 | 17796.41 | 1.13 | 3.89 |

Sources: *Statistical Abstract of Karnataka* for Various Years, Directorate of Economics and Statistics, Bangalore.

### 3.3.2 Agricultural Marketing and Market Infrastructure in Maharashtra

***Amended Maharashtra Agricultural Produce Marketing (Regulation) Act, 1963***

As per the Model Act circulated by GoI, Maharashtra has made suitable amendments in its Maharashtra Agricultural Produce Marketing (Regulation) Act, 1963. The State amended the Act in June 2006 and framed rules in June 2007. In the amended Act, the concept of development was introduced along with regulation. The amended Act is entitled as "Maharashtra Agricultural Produce Marketing (Development and Regulation) (Amendment) Act, 2006. The following are the important amendments made in the Act:

1) **Introduction of greater competition:** Most of the agricultural markets in the state have always suffered due to dominance of certain market functionaries. Some of the provisions of Maharashtra APMC 1963 Act prohibited the farmers to enter into direct contact with the processors/manufacturers located outside the market area. The commodity sell was channelized through regulated markets and it led to inefficient market outcomes. However, as per the amended Act 2007, rules have been framed to allow greater freedom to farmers to sale their produce directly to consumers, processors or manufacturers. For this, the Act has made provision for establishment of private markets, farmer- consumer markets and direct marketing. In this, farmers can deal with any licensed person, partnership firm, co-operative society, NGO or companies who have established a private market as per stipulated conditions of DMI. Apart from this, provisions are also made to declare certain markets as special commodity markets on the basis of arrivals, turnover, and geographical area. This is to encourage development of specialized markets having modern infrastructure and storage facilities with private sector participations. This is a great step

particularly for promoting efficiency in onion markets.

2) **Contract Farming**: Contract farming has been considered to be one of the viable solutions to the problems of agricultural marketing in India, particularly to deal with the nexus between traders and officials, collusiveness among traders and inadequate marketing facilities. An amendment APMC Act 2007 makes provision for contract farming. Under this provision, farmers are allowed to make advance contracts under no compulsion with known buyer on the delivery of certain commodity at specified price, location and on the maturity of crop. The act also allows big private players to open and operate in agricultural markets, where famers can sell their produce. Since there is no compulsion for farmers to bring their produce to the market yard, they can directly sell the produce to private players, food processing industries and retailers. This in some extent is expected to bring an end to monopolies of organized traders and commission agents currently operating in the regulated markets and improve overall the overall market efficiency.

***Implementation of Agricultural Marketing Reforms under amended Act:***

The Maharashtra APMC Act, 1963, has been amended so as to promote competitive marketing. After the amendment, the State has issued 72 licenses under direct marketing, gave approval to 7 private markets, identified 33 locations for Farmer-Consumer Markets, facilitated contract farming under 1 lakh hectares, organized 20 festivals for promoting special commodity markets and given licenses to 09 private players under Single License System. State has also made some efforts to promote Public Private Partnership and has proposed to set up terminal market for fruits and vegetables at Mumbai, Nasik and Nagpur. The project will be implemented by competitive bidding process. The key objective of terminal market is to ensure a more transparent, efficient and modern marketing system for perishable fruits and vegetables with few or no middlemen so that farmers/growers/producers can receive more remunerative prices for their produce. The terminal markets provide multiple options to farmers for disposal of produce. Such markets are expected to reduce post harvest losses and increase farmer's realization.

Marketing infrastructure in the state has also undergoing major changes. Under MARKNET project, computerization of 291 APMCs and 54 submarkets is completed. Agri-Export Zones (AEZ) have been set up in the state and six facility centers for export have been created. The concept of AEZs aims at strengthening the entire value chain in a comprehensive manner for an identified crop coming from a geographically contiguous manner. Rural godowns, and onion storage structures are being constructed and grading and standardization of produce is encouraged. Television to disseminate arrival and price information of agricultural commodities has made inroads to strengthen infrastructure. A Memorandum of Understanding (MoU) between Reuters and MSAMB was signed in May 2007 to provide information about market arrivals, prices, weather forecast, and market guidelines to farmers through mobile telephones. More than 10,000 farmers have subscribed to this facility.

It can be observed that under amended APMC Act, there exists scope for private investment in agricultural markets and also direct buying of produce from farmers by traders and processors. Thus the monopoly of APMC controlled markets has been restricted and the scenario related to agricultural marketing has begun to change. In view of the changes made in APMC Act, direct marketing, contract farming, corporate entry into agricultural markets etc. have begun to make inroads into agricultural marketing. The Act of 1963 led to the supply chain in India becoming inefficient because of the presence of a large number of intermediaries in agricultural marketing. The presence of intermediaries in India is a substitute for infrastructure. These intermediaries perform the distribution function as produce is normally consolidated at the village markets and reconsolidated again by intermediaries at least two to three times before it reaches the final consumer. The supply chain is dominated by traders who operate on high margins for no value addition. In such a process there is wastage and huge losses besides both the farmer and consumer lose in terms of price. A more integrated market structure where the farmer is provided by both backward and forward linkage as incorporated in the amended Act will therefore help to minimize on inefficiencies in the marketing system.

Corporate units like Reliance, Godrej, Deepak Fertilisers and Petro Chemicals Ltd, ITC, Bharati group, etc. have entered agricultural markets to capitalize on opportunities such as processing, marketing and export of agricultural products. These companies have linkages with small and large farmers to source the produce, besides procuring through contract farming. The company besides procuring produce from farmers also provides cost effective technology to registered farmers. Thus it can be observed that changes are taking place in agricultural marketing with corporate entry and amendments made in APMC Act.

### *Present Status of Infrastructure in Maharashtra*

In Maharashtra, the agricultural marketing is more or less entirely in the hands of the middle men, they are called link agents, subagents, processors, and so on (Kalamkar, 2006). It is predominantly traditional in as much as it does not have strong network of post-harvest services, infrastructural facilities and amenities and marketing system (GOM, 1991).

Situation in rural areas of Maharashtra in this respect is far from satisfactory. Many producers of perishable commodities like vegetables, fruits, flowers, etc., and others receive unjustifiably low prices for their produce and are not assured of even the minimum stable return over their cost of production. At the end of March 2010, there were 3500 primary rural markets scattered across the State (http://agmarknet.nic.in/). In case of regulated markets, the state does not find itself well placed (Annexure Table 3.2). Though State has second highest number of regulated markets in the country, the area covered by each market (349.65 sq. km) and population served by each market (1.099 lakhs) in very less as compared to the other states in India. Area served per regulated markets and village served by each market too reveal lot of variation among the districts (Annexure Table 3.3). It is varies from 603 kilometer for Mumbai to 4804 kilometer for Gadchiroli district. And what is most striking, most of these are not equipped with basic facilities like platforms for sale and auction, electricity, drinking water, link roads, traders' premises, facilities for post harvest management etc. Therefore, these markets require attention for price competitive marketing to attract more buyers (GOI, 2002). These indicate that there is a strong case for increased investment in rural infrastructure in the relatively backward and neglected area and even more so in high growth potential but infrastructurally under developed area like Vidarbha region (Sawant, *et al*, 1999).

The Maharashtra State Agricultural Marketing Board (MSAMB) is having an important role in developing and coordinating agricultural marketing system in the State of Maharashtra. The MSAMB has established MARKNET (Agricultural Market Intelligence Network in Maharashtra State), a network of APMCs in the State. Under this project, APMCs have been computerized and connected through the Internet for information exchange. Presently MARKNET has 93 nodes (computers) all over the State. The process of computerization and connectivity of the remaining APMCs is in progress. Daily market arrival and price information is being entered into the computer at the APMCs level and being sent to a central communication server located at MSAMB, through modem and telephone. The newly received information is processed automatically with the help of software installed on the server, and the processed information is downloaded by APMCs for further dissemination through notice board or Projection TV. The results after implementation of the project are encouraging and show signs of an optimistic future for information culture in agricultural marketing through Regulated Markets. Day to day market trade information on agricultural commodities is collected at all important APMC in the state. All district centres of NIC are being used as data entry points and for reporting. This data is also made available on the NIC System installed at New Delhi through NICNET for easy access by any other APMC.

## 3.4 Conclusions:

The agricultural marketing suffers from many handicaps in India. Though sector has largely been controlled by the state, it is private players who dominate the sector. The agricultural markets are imperfect in nature. Infrastructural facilities in and around of these markets are not up to the mark and are heavily underinvested. The uneven development of regulated markets, the inability to fight the vested interests of traders, the persistence of traces of collusion amongst traders in regulated markets have

deprived the farmer of his due share in the final consumer's price, besides facing other hardships during sale of his produce. The marketing situation in Karnataka and Maharashtra is not different from the country in general. In fact, these, lag far behind as compared to their counterparts, Tamil Nadu, Kerala, Punjab, and Haryana. The traders' cartel, barriers on new entrants and the institutional failures still exist in many markets. Similar is the story of the factor markets. Throughout the policy initiatives, there is hardly any attention paid to some of the operations in the factor market.

In Karnataka and Maharashtra, the agricultural marketing is more or less entirely in the hands of the intermediate market functionaries. Both the states do not have strong network of post-harvest services, infrastructural facilities & amenities and dynamic marketing system. The poor state of infrastructure in many underdeveloped districts is even more worrisome. Maharashtra is one of the progressive and industrial states in the country. But in terms of relative infrastructural facilities, the state is far behind Punjab, Haryana, Tamil Nadu, Kerala and Uttar Pradesh. As per the CMIE infrastructure index, both Karnataka and Maharashtra states have a good compatible score, but in case of facilities necessary for marketing, the condition seems rather poor. Maharashtra and Karnataka stand comparatively at well position (2$^{nd}$ and 6$^{th}$ respectively) in total number of regulated markets in the country, but their position in area covered by each market and population served by each market are far below than the other states. Considering the uneven spread of regulated markets in these states, the farmers still continue to face lot of difficulties while selling their produce. Exploitations by middlemen from the farmers have been continuing due to inadequate marketing facilities. The state of agricultural marketing in these states and the rural infrastructure in the relatively backward areas is in very bad shape. These states need active initiatives for greater capital formations in this sector, either from public or private sector.

## Annexure Table 3.1: Regulated Markets by Districts: Year 2000-01& 2009-10

| Districts | Main Markets | | Sub Markets | | Total | | Turnover (Rs in Crores) | |
|---|---|---|---|---|---|---|---|---|
| | 2000- | 2009-10 | 2000-01 | 2009- | 2000- | 2009- | 2000-01 | 2009-10 |
| **Belagam** | **10** | **10** | **33** | **37** | **43** | **47** | **343.9** | **665.34** |
| Tumkur | 10 | 9 | 23 | 25 | 33 | 34 | 239.9 | 688.67 |
| Gulburga | 7 | 7 | 22 | 22 | 29 | 29 | 183.7 | 1345.69 |
| U.Kannada | 8 | 8 | 27 | 20 | 35 | 28 | 308.4 | 381.55 |
| Kolar | 8 | 9 | 15 | 15 | 23 | 24 | 150.8 | 456.21 |
| Hassan | 6 | 6 | 16 | 17 | 22 | 23 | 139.7 | 415.52 |
| **Gadag** | **5** | **5** | **17** | **17** | **22** | **22** | **166.5** | **424.87** |
| Shimoga | 4 | 4 | 15 | 18 | 19 | 22 | 724.3 | 1151.15 |
| Bagalkote | 5 | 5 | 15 | 15 | 20 | 20 | 159.3 | 137.59 |
| Bellary | 6 | 6 | 14 | 15 | 20 | 21 | 229.3 | 914.91 |
| Haveri | 6 | 7 | 12 | 12 | 18 | 19 | 410.7 | 1061.70 |
| Bijapur | 3 | 3 | 13 | 14 | 16 | 17 | 177.0 | 252.19 |
| Koppal | 4 | 4 | 13 | 13 | 17 | 17 | 587.4 | 449.30 |
| **Dharwad** | **5** | **5** | **12** | **12** | **17** | **17** | **207.3** | **534.07** |
| Mandya | 4 | 6 | 9 | 10 | 13 | 16 | 159.4 | 510.42 |
| Chikkamagalur | 5 | 6 | 10 | 9 | 15 | 15 | 107.2 | 235.40 |
| Mysore | 7 | 7 | 7 | 8 | 14 | 15 | 315.7 | 752.60 |
| Raichur | 4 | 4 | 11 | 13 | 15 | 17 | 540.6 | 449.30 |
| Bangalore (R) | 3 | 4 | 11 | 10 | 14 | 14 | 45.3 | 241.05 |
| Bidar | 5 | 5 | 9 | 9 | 14 | 14 | 117.0 | 199.96 |
| Chitradurga | 4 | 4 | 10 | 10 | 14 | 14 | 218.9 | 572.54 |
| **Davangere** | **6** | **6** | **8** | **8** | **14** | **14** | **274.6** | **944.91** |
| **Bangalore (u)** | **2** | **2** | **6** | **7** | **8** | **9** | **1061.2** | **3222.83** |
| D Kannada | 5 | 5 | 3 | 9 | 8 | 14 | 405.9 | 563.64 |
| Chamrajanagara | 3 | 3 | 4 | 4 | 7 | 7 | 64.2 | 104.82 |
| Kodagu | 3 | 3 | 3 | 4 | 6 | 7 | 109.2 | 155.48 |
| Udipi | 3 | 3 | 4 | 3 | 7 | 6 | 64.7 | 113.64 |
| Total | 141 | 146 | 342 | 355 | 483 | 501 | 7512.2 | 17796.41 |

Source- Karnataka at Glance 2001-02 and 2009-10

## Annexure Table 3.2: Spread of Regulated Markets in the Major States of India (March 31, 2010)

| Name of the State/UT | Area in Sq. Kms. | Total Population | Total Regulated Markets | Area covered / Market (Sq. Km) | Requirement of Markets | Population Served/ Market |
|---|---|---|---|---|---|---|
| Andhra Pradesh | 275045 | 7.57 | 901 | 305.27 | 3501 | 84048 |
| Assam | 78438 | 2.66 | 226 | 347.07 | 998 | 117869 |
| Bihar | 94163 | 8.29 | Act * | 0 | 1198 | 0 |
| Jharkhand | 79714 | 2.69 | 201 | 396.59 | 1015 | 133878 |
| Gujarat | 196024 | 5.06 | 414 | 473.49 | 2495 | 122215 |
| Haryana | 44212 | 2.11 | 284 | 155.68 | 563 | 74236 |
| Himachal Pradesh | 55673 | 0.61 | 47 | 1184.53 | 709 | 129303 |
| Jammu & Kashmir | 222236 | 1.01 | 0 | 0 | 2829 | 0 |
| **Karnataka** | **191791** | **5.27** | **501** | **382.82** | **2441** | **105257** |
| Madhya Pradesh | 308346 | 6.04 | 513 | 601.06 | 3924 | 117710 |
| Chhattisgarh | 135100 | 2.08 | 184 | 734.24 | 1719 | 113022 |
| **Maharashtra** | **307690** | **9.68** | **880** | **349.65** | **3916** | **109946** |
| Orissa | 155707 | 3.67 | 314 | 495.88 | 1982 | 116901 |
| Punjab | 50362 | 2.43 | 488 | 103.2 | 641 | 49773 |
| Rajasthan | 342239 | 5.65 | 430 | 795.9 | 4356 | 131333 |
| Tamil Nadu | 130058 | 6.21 | 292 | 445.4 | 1655 | 212708 |
| Uttar Pradesh | 238566 | 16.61 | 605 | 394.32 | 3036 | 274468 |
| Uttarakhand | 55845 | 0.85 | 58 | 962.84 | 711 | 146199 |
| West Bengal | 88752 | 8.02 | 687 | 129.19 | 1130 | 116770 |
| All India | 3287240 | 102.7 | 7157 | 28982.67 | 41836 | 5850385 |

Note - * repealed; Source: www.agmarknet.nic.in

## Annexure Table 3.3: District wise Regulated Markets and Road Infrastructure in Maharashtra

| District | Infra. Index | Regulated Markets (2000-01) | | | Road Infrastructure *(in km)* (2000-01) | | | |
|---|---|---|---|---|---|---|---|---|
| | | No. of regulated markets | Villages served/ market | Area served/ regulated market (Sq.km) | Road length/ 100sq kms. | Road length/ lakh population | Villages linked with roads | |
| | | | | | | | Number | % |
| Mumbai | 142.17 | 1 | 6 | 603 | 8 | 0.49 | 0 | 0 |
| Thane | 90.29 | 7 | 168 | 1365 | 60 | 114 | 1629 | 97.02 |
| Raigad | 94.18 | 9 | 182 | 794 | 63 | 92 | 1774 | 95.84 |
| Ratnagiri | 88.28 | 1 | 1515 | 8208 | 74 | 400 | 1493 | 98.29 |
| Sindhudurg | 113.95 | 1 | - | - | 103 | 732 | 724 | 98.37 |
| Nasik | 101.54 | 13 | 138 | 1194 | 88 | 550 | 1792 | 98.84 |
| Dhule | 89.64 | 4 | 129 | 1637 | 62 | 452 | 664 | 99.70 |
| Nandurbar | 89.64 | 6 | 129 | 1637 | 87 | 465 | 836 | 99.97 |
| Jalgaon | 102.83 | 12 | 123 | 980 | 82 | 304 | 1488 | 100.0 |
| Ahmednagar | 97.69 | 13 | 114 | 1311 | 75 | 819 | 1535 | 98.65 |
| Pune | 106.08 | 11 | 108 | 1422 | 88 | 329 | 1765 | 95.92 |
| Satara | 110.02 | 9 | 166 | 1164 | 84 | 360 | 1503 | 97.16 |
| Sangli | 110.0 | 5 | 154 | 1714 | 94 | 366 | 716 | 100.0 |
| Solapur | 216.49 | 10 | 107 | 1489 | 77 | 353 | 1127 | 100.0 |
| Kolhapur | 110.01 | 4 | 293 | 1921 | 82 | 209 | 1159 | 99.06 |
| Aurangabad | 73.86 | 8 | 168 | 1263 | 100 | 415 | 1288 | 99.08 |
| Jalna | 93.24 | 5 | 154 | 1543 | 45 | 284 | 947 | 99.06 |
| Parbhani | 77.33 | 9 | 104 | 849 | 66 | 308 | 793 | 98.14 |
| Hingoli | 77.33 | 6 | 104 | 849 | 58 | 354 | 651 | 97.46 |
| Beed | 96.64 | 9 | 137 | 1337 | 75 | 437 | 1215 | 94.48 |
| Nanded | 88.06 | 18 | 85 | 701 | 94 | 540 | 1478 | 97.56 |
| Osmanabad | 77.42 | 7 | 97 | 1081 | 69 | 406 | 707 | 55.71 |
| Latur | 87.78 | 8 | 106 | 119 | 68 | 296 | 708 | 98.88 |
| Buldhana | 75.61 | 13 | 103 | 878 | 43 | 223 | 1100 | 84.68 |
| Akola | 86.54 | 7 | 130 | 813 | 55 | 168 | 763 | 86.90 |
| Washim | 86.54 | 6 | 130 | 813 | 48 | 379 | 639 | 91.81 |
| Amaravati | 85.33 | 12 | 164 | 1017 | 51 | 283 | 1638 | 95.24 |
| Yavatmal | 77.22 | 15 | 139 | 905 | 50 | 394 | 1610 | 95.78 |
| Wardha | 90.56 | 7 | 140 | 900 | 50 | 294 | 860 | 88.93 |
| Nagpur | 96.58 | 10 | 204 | 989 | 69 | 210 | 1547 | 95.26 |
| Bhandara | 126.33 | 5 | 143 | 931 | 96 | 361 | 777 | 99.11 |
| Godiya | 126.33 | 5 | 143 | 931 | 83 | 407 | 846 | 97.24 |
| Chandrapur | 107.95 | 11 | 156 | 1040 | 65 | 386 | 1502 | 100.0 |
| Gadchiroli | 97.47 | 4 | 436 | 4804 | 38 | 747 | 1379 | 91.81 |
| Maharashtra | 106.77 | 271 | 161 | 1266 | 71 | 286 | 38930 | 96.33 |

**Sources:** GOM (2007), Statistical Abstract of Maharashtra State 2001, DE&S, Mumbai; CMIE (2000)

## Annexure Table 3.4: Relative Infrastructure Development Index in States of India (All India =100)

| States | 1980-81 | 1993-94 | 2000 |
|---|---|---|---|
| Andhra Pradesh | 98.1 | 96.1 | 104.01 |
| Assam | 77.7 | 78.9 | 104.39 |
| Bihar | 83.5 | 81.1 | 91.31 |
| Gujarat | 123.0 | 122.4 | 105.33 |
| Haryana | 145.5 | 141.3 | 133.12 |
| Himachal Pradesh | 83.5 | 98.8 | 113.88 |
| **Karnataka** | **94.7** | **96.9** | **106.12** |
| Kerala | 158.1 | 157.1 | 162.42 |
| Madhya Pradesh | 62.1 | 75.3 | 86.66 |
| **Maharashtra** | **120.1** | **107.0** | **106.77** |
| Orrisa | 81.5 | 97.0 | 101.45 |
| Punjab | 207.3 | 191.4 | 171.92 |
| Rajasthan | 74.4 | 83.0 | 87.27 |
| Tamilnadu | 158.6 | 144.0 | 145.62 |
| Uttar Pradesh | 97.7 | 103.3 | 112.04 |
| West Bengal | 110.6 | 94.2 | 102.09 |
| All India | 100.0 | 100.0 | 100.0 |

Source: CMIE (1997 and 2000).

# Chapter 4

# CONDUCT FOR COMPETITION ANALYSIS: An Analysis of Field Data of Market Functionaries

## 4.1 Introduction

Given the poor state of agricultural marketing in many parts of the country, the situation of farmers in the market is quite often referred with the following anecdote - *the APMCs which have been represented by the farmers' representatives did not favor the farmers. It is almost proverbial when a farmer enters a market; he has to come out of it only selling the product at whatever may be prices offered. The traders' cartel, access to market and the institutional failures contribute significantly in this situation.* In this background, an attempt is made in this chapter to analyze the supply chain of onion and observe the benefits as well as constraints faced by farmers and market functionaries, using data collected from APMCs, farmers, commission agents, wholesalers, retailers and the consumers.

## 4.2 Basic Characteristics of Sample APMCs and Market Functionaries

### 4.2.1 Sample APMCs

The details of selected APMCs for the study are presented in table 4.1. The table indicates significant variations in area under market, number of villages severed and number of registered intermediaries in the markets across the selected APMCs in Maharashtra and Karnataka. In Maharashtra, Pune APMC has the largest area under market yard, while Sangamner APMC serves highest number of villages. The numbers of registered intermediaries are more in Pune and Ahmednagar APMCs compared to other APMCs. Among the selected APMC, market Committee doesn't exist in Pune market since 2003. In Karnataka, Hubli has the largest area under market while Davangere serves highest numbers of villages. Bangalore APMC has highest number of commission agents and wholesale traders operating in the market.

**Table 4.1: Details of Sample APMCs in Maharashtra and Karnataka**

| APMC/ Place of Market | Total Market Area/Yard (Ha) | Market Jurisdiction (Taluk) | No. of villages | Number of Registered Intermediaries in Market@ | |
|---|---|---|---|---|---|
| | | | | CA* | WS**/ Traders |
| **Maharashtra** | | | | | |
| Ahmednagar | 11.31 | Ahmednagar | 115 | 1332 | 397 |
| Sangamner | 6.27 | Sangamner | 147 | 51 | 335 |
| Yeola | 10.0 | Yeola | 123 | 100 | 147 |
| Lasalgaon | 6.78 | Nifad | 62 | 209 | 206 |
| Pimplagaon | 4.20 | Nifad | 69 | 207 | 227 |
| Washi | 69.0 | Greater Mumbai, taluka of Thane & Raigad | 30 | 317 | 252 |
| Pune | 72.94 | Pune and Haveli | 101 | 890 | 5889 |
| **Karnataka** | | | | | |
| Bangalore | 85.09 | Bangalore North, South, East & Anekal | 728 | 1406 | 1689 |
| Belgaum | - | Belgaum | 119 | 176 | 333 |
| Hubli | 434.04 | Hubli | - | 724 | 816 |
| Gadag | 166.23 | Gadag | 141 | 221 | 443 |
| Davangere | - | Davangere | 918 | 420 | 784 |

**Note** – @ dealing only in agricultural commodities; *stands for Commission Agents; ** Wholesalers

The market fees, commission and other charges paid by buyers and farmers show significant difference in Maharashtra and Karnataka (tables 4.2a and 4b). Notably, the commission and weighting charges are paid by the farmers in Maharashtra. The market fees and development cess charged to the buyers (commission agents and traders) in the State are much less (1.5 percent). On the contrary, in Karnataka commission charges are included in the market fees and buyers have to pay market fees and weighting charges.

**Table 4.2a: Market Fee, Commission Charges and Other Charges at APMCs in Maharashtra**

| APMC | Buyer/Purchaser | | Farmer/Commodity Seller | | | |
|---|---|---|---|---|---|---|
| | Market fee* | Development Cess/ Supervision charges | Commi-ssion** | Weighing charges (Rs per qtl) | Hamali | Warai |
| Ahmednagar | 1 | 0.05 | 6.00 | 2.58 | 2.11 | - |
| Sangamner | 1 | 0.05 | 6.00 | 2.35 | 3.22 | - |
| Yeola | 1 | 0.05 | 6.00 | 2.12 | 2.68 | 0.9 |
| Lasalgaon | 1 | 0.05 | 4.00 | 2.12 | 2.68 | 0.87 |
| Pimplagaon Basant | 1 | 0.05 | - | 2.12 | 2.68 | 0.9 |
| Washi | 1 | 0.05 | 6.50 | 1.51 | 3.95 | - |
| Pune | 1 | 0.05 | 6.00 | 2.4 | 3.60 | 2.04 |

Notes: * on total value of commodity. Rs. 1 per Rs.100 value; **on total value of commodity; Rs. 6 per Rs.100 value

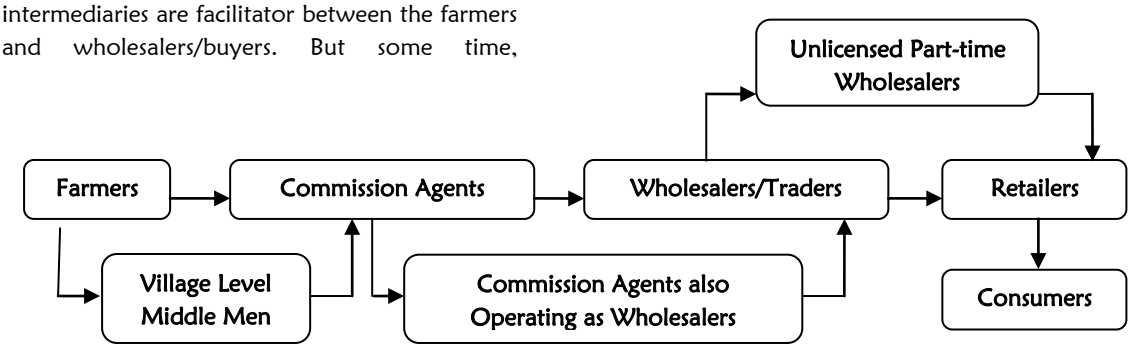
**Table 4.2b: Market Fee, Commission Charges and other Charges at APMCs in Karnataka**

| APMC | Buyer/Purchaser | | | Farmer/Commodity Seller | |
|---|---|---|---|---|---|
| | Market Fee* | Development Cess/Super-vision tax | Weighing charges (Rs. Per qtls) | Hamali | Warai |
| Bangalore | 6 | 0 | 1.60 | 4 | 0 |
| Belgaum | 6 | 0 | 1.60 | 4 | 0 |
| Hubli | 6 | 0 | 1.60 | 4 | 0 |
| Gadag | 6 | 0 | 1.60 | 4 | 0 |
| Davangere | 6 | 0 | 1.60 | 4 | 0 |

Note: * on total value of commodity. Rs. 1 per Rs. 100 value + Commission (on total value of commodity)

### 4.2.3 Marketing Channel

The main purpose of regulated markets is to create conditions for sale which are conducive for all market functionaries involved in marketing. Farmers often go through different marketing channels for the sale of their produce. They generally have to go through village level middlemen or commission agents. These market intermediaries are facilitator between the farmers and wholesalers/buyers. But some time, commission agents who are operating as wholesalers or traders directly deal with farmers. Generally, retailers purchase from wholesalers or in some cases they also buy directly from unlicensed part-time wholesalers working within or outside markets. The supply chain ends when the product reaches the consumer who is the final user of the commodity.



#### 4.2.3.1 Farmers

For supply chain analysis, information was collected from 130 farmers in Maharashtra and 125 farmers in Karnataka. The detailed list of number of farmers selected across the APMCs is provided in the first chapter (Table 1.1). The landholding size and irrigation status are important factors in determining the economic status and bargaining power of the farmers. Table 4.3 indicates that most of the sample farmers are marginal and small farmers. On an average, each sample farmer owned 2.41 acres in Maharashtra and 3.09 acres in Karnataka. Notably, sample farmers from Maharashtra owned higher proportion of irrigated land than that of Karnataka, but in terms of irrigation, farmers from both the states depended largely on groundwater.

**Table 4.3: Area Owned by Sample Farmer in Maharashtra and Karnataka**

(Area in Acres)

| Place | Dry Land | Irrigated Land | | | Total Land |
|---|---|---|---|---|---|
| | | Surface | Ground | Total | |
| **Maharashtra** | | | | | |
| Ahmednagar | 0.39 | 0.00 | 1.82 | 1.82 (82.4) | 2.21 |
| Sangamner | 0.65 | 0.11 | 1.29 | 1.40 (68.3) | 2.05 |
| Yeola | 0.26 | 0.00 | 2.67 | 2.67 (91.4) | 2.92 |
| Lasalgaon/Pimpalgaon | 0.56 | 0.03 | 2.54 | 2.57 (82.1) | 3.13 |
| Washi (Mumbai) | 0.69 | 0.05 | 1.47 | 1.52 (68.8) | 2.21 |
| Pune | 0.43 | 0.05 | 1.03 | 1.08 (71.1) | 1.52 |
| ***Average*** | ***0.49*** | ***0.04*** | ***1.89*** | ***1.93 (80.1)*** | ***2.41*** |
| **Karnataka** | | | | | |
| Bangalore | 3.91 | 0.23 | 1.94 | 2.17 (35.7) | 6.08 |
| Belgaum | 1.22 | 0.10 | 1.41 | 1.52 (55.5) | 2.74 |
| Hubli | 1.78 | 1.25 | 0.82 | 2.07 (53.8) | 3.85 |
| Gadag | 2.79 | 0.00 | 0.50 | 0.50 (15.2) | 3.29 |
| Davangere | 0.66 | 0.16 | 1.76 | 1.92 (74.4) | 2.58 |
| ***Average*** | ***2.07*** | ***0.35*** | ***1.29*** | ***1.63 (52.8)*** | ***3.09*** |

**Note –** Figures in parenthesis are percentage to total land (irrigated + unirrigated)

#### 4.2.3.2 Commission Agents

The details on the years of experience, method of purchase and category of shop owned by market functionaries provide us a better information on the nature of market functioning. If higher years of experience is considered to be a proxy of market functionaries' hold on the market[7], then table 4.4 clearly brings out the fact that commission agents in all sample markets except Belgaum, Hubli, Sangamner and Ahmednagar are having strong hold on the functioning of these markets. The average years of experience of commission agents in these markets varied from 19 to 35 years. Apart from these, it also comes out from the table that most of commission agents owning shops had extended trading and storage area along with a separate space for a small office. This is another indicator of strong hold of market functionaries having over the market as one could expect higher years of experience help them to strengthen their position in getting space for extended trading and storage. When these two parameters are strong, even method of purchase in open auction matter less in weakening the hold of commission agents.

#### 4.2.3.3 Wholesalers

Interestingly, when we extend our above analysis to wholesale traders the observations do not significantly change from the commission agents (Table 4.5). In fact, the average years of experience of selected wholesalers in onion trade was higher than commission agents, indicating strong hold of wholesale traders too and at the same time possibility of wholesale traders operating as commission agents. The combination of these two certainly gives undue advantage to the traders having huge turnover capacity. It also helps them in strengthening their monopolistic position in the market, and more by restricting others from entering or getting new licenses.

[7] Hold in terms of their ability to restrict new entrants, their linkages with officials in getting licenses to their keen or relatives or blocking licenses to new entrants.

Table 4.4: Commission Agents in Maharashtra and Karnataka

| Place | No. of Commission agents | Years of Experience | Methods of Onion Purchase@ | | | | | Category of shop owned@@ | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | A | B | C |
| **Maharashtra** | | | | | | | | | | |
| Ahmednagar | 17 | 12.8 | 17 | 0 | 0 | 0 | 0 | 16 | 1 | 0 |
| Sangamner | 4 | 9.2 | 4 | 0 | 0 | 0 | 0 | 2 | 2 | 0 |
| Yeola | 4 | 35.0 | 4 | 0 | 0 | 0 | 0 | 3 | 1 | 0 |
| Lasalgaon/Pimlg | 9 | 23.6 | 9 | 0 | 0 | 0 | 0 | 8 | 1 | 0 |
| Washi (Mumbai) | 18 | 21.4 | 2 | 2 | 0 | 14 | 0 | 17 | 1 | 0 |
| Pune | 15 | 23.3 | 6 | 0 | 0 | 6 | 3 | 15 | 0 | 0 |
| **Total/Average** | **67** | **20.0** | **42** | **2** | **0** | **20** | **3** | **61** | **6** | **0** |
| **Karnataka** | | | | | | | | | | |
| Bangalore | 10 | 22.3 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| Belgaum | 10 | 7.5 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| Hubli | 10 | 14.0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| Gadag | 10 | 19.0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| Davangere | 10 | 22.7 | 10 | 0 | 0 | 0 | 0 | 7 | 3 | 0 |
| **Total/Average** | **50** | **17.1** | **50** | **0** | **0** | **0** | **0** | **47** | **3** | **0** |

**Notes**: Codes stand for 1 = Open Auction, 2=Secret Bidding 3= E-Auction, 4= Negotiation 5=Other Mode (Both 1 and 4); A= category of shops have an extended trading and storage area in addition to a separate space for a small office; B = category of shops have much smaller trading areas and a much smaller sitting area, instead of a separate office; and C = category of shops have even smaller trading areas and no designated sitting area.

Table 4.5: Wholesalers in Maharashtra and Karnataka

| APMC | No. of Wholesaler | Years of Exp | Methods of Onion Purchase | | | | | Category of shop owned@@ | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | A | B | C |
| **Maharashtra** | | | | | | | | | | |
| Ahmednagar | 3 | 34.0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Sangamner | 6 | 14.5 | 6 | 0 | 0 | 0 | 0 | 5 | 1 | 0 |
| Yeola | 6 | 26.7 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| Lasalgaon/Pimlg | 11 | 19.2 | 11 | 0 | 0 | 0 | 0 | 10 | 1 | 0 |
| Washi | 2 | 34.0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 |
| Pune | 5 | 23.2 | 2 | 0 | 0 | 3 | 0 | 5 | 0 | 0 |
| **Total** | **33** | **22.6** | **29** | **0** | **0** | **4** | **0** | **31** | **2** | **0** |
| **Karnataka** | | | | | | | | | | |
| Bangalore | 10 | 24.0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| Belgaum | 10 | 26.0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| Hubli | 10 | 30.5 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| Gadag | 10 | 19.0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| Davangere | 10 | 22.7 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| **Total** | **50** | **24.4** | **50** | **0** | **0** | **0** | **0** | **50** | **0** | **0** |

**Notes**: Refer notes of table 4.4

#### 4.2.3.4 Retailers

Details about the type of retail establishment of selected retailer in Maharashtra and Karnataka are presented in annexure table 4.3. It can be seen that all the retailers have wet market (local market largely dealing with fresh fruits & vegetables) retail establishment. The average retail outlet area is highest in Karnataka (648.46 Sq.ft) as compared with Maharashtra (52.5 Sq.ft). Within Maharashtra, Washi (Mumbai) and Ahmednagar have the highest retail outlet area of approximately 70 Sq.ft and it is lowest in Pune (27.8 Sq.ft). In Karnataka, Bangalore and Hubli have the highest retail outlet area of 1755 Sq.ft and 826 Sq.ft, respectively and it is lowest in Davangere (148.8 Sq.ft). To conclude, the lowest area of retail outlets directly relates to the quantity of transaction in the markets.

#### 4.2.3.5 Consumers

Details of the sampled consumers in Maharashtra and Karnataka are presented in annexure table 4.4. The average size of selected sampled consumers was more or less same, 4.7 persons in Maharashtra and 4.6 persons in Karnataka. Their average age was 38 years in Maharashtra and 42 years in Karnataka and most of them are male consumers. The average annual family income of the selected consumers in Maharashtra ranged between Rs. 26600 (Yeola) to Rs. 127000 (Mumbai). In Karnataka, these figures ranged between Rs. 24000 (Gadag) to 112000 (Bangalore).

### 4.3 Analysis of Market Intermediaries

#### 4.3.1: Farmers

Proper functioning of marketing and facilities available in and around the markets assume a significant importance in assuring better value for farmers produce. Keeping this in mind, some questions were addressed to farmers in Maharashtra and Karnataka to get details on their production decision, perception on marketing infrastructure and other issues related to marketing of onion. These are discussed below.

#### *4.3.1.1 Average Season-wise Area under Onion in 2010-11*

Season-wise average area allotted to onion crop by per farmer is given in table 4.6. It can be observed from the table, that on an average sample farmer in Maharashtra allotted 1.15 acres for onion, of which, almost one third of total area was allotted in kharif season. In Karnataka, cultivation of onion was entirely in kharif. The table also reflects one of the important facts that most of the farmers growing onion are small and marginal farmers. On an average each sample farmer in Maharashtra allotted 38.04 per cent of its gross cropped area (GCA) to onion. The corresponding figure for Karnataka was relatively high at 41.34 percent.

**Table 4.6: Season-wise Average Area Allotted to Onion in Maharashtra and Karnataka**

| Market | Average Area under Onion during the year 2010-11 (Acres) | | | | % to GCA |
|---|---|---|---|---|---|
| | Kharif | Rabi | Summer | Total | |
| **Maharashtra** | | | | | |
| Ahmednagar | 1.04 | 0.45 | 0 | 1.50 | 52.01 |
| Sangamner | 0.58 | 0.27 | 0 | 0.85 | 32.22 |
| Yeola | 0.82 | 0.45 | 0.06 | 1.32 | 35.48 |
| Lasalgaon/Pimpalgaon | 0.87 | 0.34 | 0 | 1.21 | 31.15 |
| Washi (Mumbai) | 0.32 | 0.71 | 0 | 1.03 | 38.10 |
| Pune | 0.37 | 0.43 | 0 | 0.80 | 41.96 |
| **Average** | **0.72** | **0.42** | **0.01** | **1.15** | **38.04** |
| **Karnataka** | | | | | |
| Bangalore | 2.05 | 0 | 0 | 2.05 | 43.40 |
| Belgaum | 0.79 | 0 | 0 | 0.79 | 32.54 |
| Hubli | 1.07 | 0 | 0 | 1.07 | 53.92 |
| Gadag | 2.1 | 0 | 0 | 2.1 | 47.00 |
| Davanagere | 0.81 | 0 | 0 | 0.81 | 24.29 |
| **Average** | **1.3** | **0** | **0** | **1.3** | **41.34** |

#### *4.3.1.2 Factors Governing the Decision of Cultivating Onion*

Table 4.7a presents the factors governing the decision in cultivation of onion in Maharashtra. Farmers were asked to list out the major factors that they took into account before cultivating onion crop. Majority of the sample farmers (78 per cent) from Maharashtra indicated that weather suitability, short duration of crop and onion being as a cash crop were main factors behind their decision to cultivate onion. The sample farmers from Ahmednagar and Pune however, cited that sufficient rain was also an

important component of their decision along with the above factors, in cultivation of onion. Surprisingly, the price factor mattered less important in the decision making of the farmers from Maharashtra, but rather important to the farmers from Karnataka. Almost 43 per cent of the farmers from Karnataka decided to cultivate onion based on last years' price (Table 4.7b). Apart from this, availability of water and labour mattered a lot for the sample farmers (30 per cent) of the State in the decision to cultivate onion. These have serious implication for the stability of onion production and its prices. If farmers decide to grow onion based on last years' price, then higher prices certainly force them to grow the crop, causing bumper crop production and a cycle of lower cultivation/production and higher prices and vice-versa in the subsequent years.

**Table 4.7a: Factors Governing the Decision of Cultivating Onion in Maharashtra**

(% to total)

| Market | Suitable weather; Cash Crop; Short duration Crop | Good Price | Sufficient Rain | No Comments |
|---|---|---|---|---|
| Ahmednagar | 28 | 4 | 64 | 4 |
| Sangamner | 100 | 0 | 0 | 0 |
| Yeola | 100 | 0 | 0 | 0 |
| Lasalgaon/Pimpl | 100 | 0 | 0 | 0 |
| Washi (Mumbai) | 100 | 0 | 0 | 0 |
| Pune | 40 | 6.67 | 40 | 13.33 |
| **Average** | **78** | **1.54** | **16.92** | **2.31** |

**Table 4.7b: Factors Governing the Decision of Cultivating Onion in Karnataka**

(% to total)

| Market | Last year Price | Availability of Water & Labour | Market Availability | Other |
|---|---|---|---|---|
| Bangalore | 48.0 | 36.0 | 4.0 | 12.0 |
| Belgaum | 43.0 | 35.0 | 2.7 | 18.0 |
| Hubli | 47.1 | 30.0 | 5.6 | 16.9 |
| Gadag | 47.2 | 15.5 | 6.6 | 35.5 |
| Davangere | 30.0 | 30.0 | 10.0 | 30.0 |
| **Average** | **43.06** | **29.3** | **5.78** | **22.48** |

### *4.3.1.3 Cost of Production of Onion*

Structure of cost of cultivation of onion in Maharashtra and Karnataka are given in tables 4.8a and 4.8b respectively. From these tables, it can be observed that the average operational cost of onion production in Maharashtra (Rs 28,876 per acre) was almost 94 per cent higher than that of Karnataka (Rs. 14,875 per acre). While explaining the reason for such high cost, the sample farmers from Maharashtra reported that the crop during last 2010-11 was badly affected by unseasonal rainfall particularly at the time of harvesting which resulted in to low yield and high cost.

The highest cost of production in Maharashtra was observed in Pune and lowest in Ahmednagar. In Karnataka, it was highest in Davangere and lowest in Gadag. In Maharashtra, out of total cost, land preparation, seed and transplanting covered almost most 39 per cent of the total cost followed by 41 per cent on fertilizers & manure, pesticides, weeding and irrigation, and 20 per cent on harvesting and post harvest marketing activities. On an average, per quintal cost of production of onion is Rs. 505 among the sample respondents. Notably in Karnataka, the proportion of the cost incurred on harvesting and post harvest marketing activities was much higher (38.6 per cent) than that of Maharashtra, indicating a greater need for the development of harvest and post harvest technology & infrastructure in the State.

Table 4.8a: Structure of Cost of Cultivation of Onion in Maharashtra

(% to total cost)

| Operations | Ahmed nagar | Sangam-ner | Yeola | Lasalgaon/ Pimpl | Washi (Mumbai) | Pune | Total |
|---|---|---|---|---|---|---|---|
| Land Preparation | 14.16 | 13.93 | 12.59 | 13.90 | 14.16 | 13.93 | 12.59 |
| Seed | 11.30 | 10.47 | 11.19 | 13.57 | 11.30 | 10.47 | 11.19 |
| Transplanting | 14.30 | 13.66 | 15.19 | 14.18 | 14.30 | 13.66 | 15.19 |
| Fertilizers/Manure | 16.19 | 18.49 | 16.34 | 14.97 | 16.19 | 18.49 | 16.34 |
| Pesticides | 7.29 | 8.91 | 7.50 | 7.30 | 7.29 | 8.91 | 7.50 |
| Weeding | 8.12 | 8.03 | 8.43 | 9.71 | 8.12 | 8.03 | 8.43 |
| Irrigation | 6.03 | 4.36 | 8.80 | 5.96 | 6.03 | 4.36 | 8.80 |
| Harvesting | 10.99 | 8.17 | 7.93 | 11.58 | 10.99 | 8.17 | 7.93 |
| Cutting of shoots / cleaning | 4.23 | 4.93 | 8.55 | 4.27 | 4.23 | 4.93 | 8.55 |
| Grading, Storage & transportation | 5.02 | 5.39 | 2.15 | 2.17 | 5.02 | 5.39 | 2.15 |
| Others | 2.36 | 3.68 | 1.32 | 2.40 | 2.36 | 3.68 | 1.32 |
| **Total*** | **100.00 (23991)** | **100.00 (31800)** | **100.00 (31549)** | **100.00 (26860)** | **100.00 (31158)** | **100.00 (32241)** | **100.00 (28876)** |

Note - * Figures in parenthesis are Rs Cost/ per acre

Table 4.8b: Structure of Cost of Cultivation of Onion in Karnataka

(% to total cost)

| Operations | Bangalore | Belgaum | Hubli | Gadag | Davangere | Total |
|---|---|---|---|---|---|---|
| Land Preparation | 7.67 | 13.50 | 10.70 | 14.19 | 11.19 | 11.47 |
| Seed | 7.76 | 7.30 | 8.80 | 7.80 | 12.97 | 8.90 |
| Transplanting | 5.70 | 9.10 | 8.30 | 7.02 | 15.05 | 9.17 |
| Fertilizers/Manure | 14.30 | 11.40 | 13.50 | 13.23 | 11.56 | 12.80 |
| Pesticides | 4.10 | 8.80 | 5.20 | 3.27 | 6.60 | 5.60 |
| Weeding | 7.00 | 7.30 | 11.70 | 16.90 | 9.99 | 10.60 |
| Irrigation | 6.80 | 0.55 | 0.79 | 0.17 | 0 | 1.60 |
| Harvesting | 7.60 | 14.2 | 14.03 | 15.16 | 11.67 | 12.55 |
| Cutting of shoots/cleaning | 1.70 | 2.40 | 2.50 | 3.32 | 3.22 | 2.65 |
| Grading, Storage & transportation | 24.80 | 14.11 | 14.23 | 8.83 | 8.56 | 14.11 |
| Others | 12.10 | 10.80 | 4.80 | 9.90 | 8.67 | 9.29 |
| **Total*** | **100.00 (16199)** | **100.00 (16419)** | **100.00 (13976)** | **100.00 (6539)** | **100.00 (21244)** | **100.00 (14875)** |

Note - * Figures in parenthesis are Rs Cost/ per acre

### *4.3.1.4* Cost of Marketing

While selling their produce either in village or APMC, farmers have to incur certain marketing costs. These costs incurred for our sample farmers are presented in table 4.9. From the table, it clearly comes out that farmers in Maharashtra sold their entire produce in APMCs. In Karnataka, some farmers, however, sold their produce in nearby villages. On an average, bagging and loading cost farmers Rs 7.2 per quintal in APMC in Maharashtra and Rs 5 per quintal in village sale in Karnataka. The transportation cost depends upon the distance of the market from production location and means of transportation. In our survey, we can notice that farmers selling their produce in Washi APMC in Maharashtra and Bangalore APMC in Karnataka incurred higher cost on transportation as compared to the farmers selling in other APMCs. The sample farmers in Karnataka, however, incurred higher transportation cost in general. Notably, in Maharashtra commission charges are borne by the farmers and it is quite high. It can also be observed that the average marketing cost incurred by farmers in Karnataka (Rs.85.6/qtle) is lower than that of Maharashtra (Rs. 102.2/qtle).

Table 4.9: Marketing Cost of Sale in APMC/Village in Maharashtra and Karnataka

(Rs/qtle)

| Market | Bagging and loading | | Transportation | | Unloading | | Commission | | Others | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | V | A | V | A | V | A | V | A | V | A | V |
| **Maharashtra** | | | | | | | | | | | | |
| Ahmednagar | 9.5 | - | 22.7 | - | 2.1 | - | 74.4 | - | 0.5 | - | 109.2 | - |
| Sangamner | 6.2 | - | 18.9 | - | 3.2 | - | 58.7 | - | 0.6 | - | 87.6 | - |
| Yeola | 1.7 | - | 17.3 | - | 2.7 | - | 50.2 | - | 1.7 | - | 73.5 | - |
| Lasalgaon/Pimpl | 7.0 | - | 23.8 | - | 2.7 | - | 32.0 | - | 8.3 | - | 73.8 | - |
| Washi | 10.4 | - | 50.1 | - | 4.0 | - | 73.8 | - | 0.4 | - | 138.6 | - |
| Pune | 11.0 | - | 28.7 | - | 3.6 | - | 72.2 | - | 0.5 | - | 116.0 | - |
| **Average** | **7.2** | **-** | **25.5** | **-** | **3.0** | **-** | **64.3** | **-** | **2.2** | **-** | **102.2** | **-** |
| **Karnataka** | | | | | | | | | | | | |
| Bangalore | - | 4.9 | 107.1 | 2.9 | 5.4 | - | - | - | - | - | 112.5 | 7.8 |
| Belgaum | - | 5.9 | 94.6 | 10.7 | 6.3 | - | - | - | - | - | 110.8 | 16.6 |
| Hubli | - | 4.9 | 85.5 | 8.0 | 4.9 | - | - | - | - | - | 86.5 | 12.9 |
| Gadag | - | 5.5 | 64.5 | 10.2 | 5.5 | - | - | - | - | - | 70.2 | 15.7 |
| Davangere | - | 4.0 | 54.5 | 7.3 | 4.7 | - | - | - | - | - | 59.2 | 11.3 |
| **Average** | **-** | **5.0** | **81.2** | **7.8** | **4.4** | **-** | **-** | **-** | **-** | **-** | **85.6** | **12.8** |

**Note** – A= APMC; V= Village

### *4.3.1.5 Method of Sale of Onion by Sample Farmers*

Table 4.10 presents the method of sale of onion in Maharashtra and Karnataka. From the table it can be observed that in almost all the APMCs except Pune and Washi the entire sales were made through open auction. In Washi and Pune APMCs, almost 80-93 per cent sale was done through negotiation between the wholesalers and the commission agents in front of farmers. Interestingly, in Washi APMC, few farmers reported the case of secret bidding. Our discussion with farmers from Maharashtra revealed that they did not received price for their produce as expected.

Table 4.10: Method of Sale of Onion in Maharashtra and Karnataka (%)

| Markets | Open Auction | Secret Bidding | E-Auction | Negotiations |
|---|---|---|---|---|
| **Maharashtra** | | | | |
| Ahmednagar | 100 | 0 | 0 | 0 |
| Sangamner | 100 | 0 | 0 | 0 |
| Yeola | 100 | 0 | 0 | 0 |
| Lasalgaon/Pimpl | 100 | 0 | 0 | 0 |
| Washi (Mumbai) | 0 | 6.67 | 0 | 93.33 |
| Pune | 20 | 0 | 0 | 80 |
| **Average** | **70** | **1.1** | **0** | **28.9** |
| **Karnataka** | | | | |
| Bangalore | 100 | 0 | 0 | 0 |
| Belgaum | 100 | 0 | 0 | 0 |
| Hubli | 100 | 0 | 0 | 0 |
| Gadag | 100 | 0 | 0 | 0 |
| Davangere | 100 | 0 | 0 | 0 |
| **Average** | **100** | **0** | **0** | **0** |

### *4.3.1.6 Reasons for Preferring Sale in APMC and Source of Price Information*

Farmers' preferences towards selling their produce in particular market provide us a good amount of information on constraints they face and opportunities that market provide in getting maximum benefits. Among the prominent reasons why farmers preferred to sell in APMC markets are quick disposal, cash payment,

Table 4.11: Reasons for Preferring Sale in APMC by Sample Farmers in Maharashtra and Karnataka (%)

| Market | No Other Option/ Substitute | Relatively better price @ | Cash Payment; quick disposal | Proximity | Transportation facility | Superior infrastructure | Low cost of Marketing | Commit-ment to repay loan* |
|---|---|---|---|---|---|---|---|---|
| **Maharashtra** | | | | | | | | |
| Ahmednagar | 0 | 60 | 100 | 80 | 56 | 40 | 76 | 4 |
| Sangamner | 20 | 44 | 85 | 84 | 52 | 41.7 | 56 | 8 |
| Yeola | 0 | 60 | 100 | 80 | 60 | 36 | 64 | 16 |
| Lasalgaon/Pimpl | 0 | 60 | 100 | 84 | 64 | 56 | 84 | 8 |
| Washi (Mumbai) | 0 | 46.7 | 87.5 | 46.7 | 66.7 | 33.3 | 20 | 20 |
| Pune | 10 | 60 | 70 | 80 | 80 | 46.7 | 53.3 | 6.7 |
| **Average** | **2.6** | **55.4** | **90.4** | **77.7** | **61.5** | **42.6** | **62.3** | **10.0** |
| **Karnataka** | | | | | | | | |
| Bangalore | 100 | 100 | 100 | 4 | 68 | 66 | 24 | 72 |
| Belgaum | 100 | 96 | 100 | 28 | 88 | 48 | 36 | 56 |
| Hubli | 100 | 100 | 100 | 88 | 76 | 60 | 36 | 64 |
| Gadag | 100 | 100 | 100 | 100 | 80 | 40 | 60 | 72 |
| Davangere | 100 | 100 | 100 | 84 | 72 | 48 | 100 | 56 |
| **Average** | **100** | **99.2** | **100** | **60.8** | **75.2** | **50.4** | **51.2** | **65.6** |

**Note** @ than price available at local market; *taken from Commission Agents/Traders

proximity to the markets[8] and transportation facility (Table 4.11). Almost all the sample farmers from Karnataka received their payment within 12 hours of sale while 63 per cent of sample farmers from Maharashtra received payment within 12 hours of sale and 30 per cent received within 24 hours (Annexure Table 4.5). Relatively better price in APMC (as compared to village/local market) figures out as one of prominent reasons in Karnataka (99.2 per cent). ***However, this need careful interpretation as most of the sample farmers in the state had no other option/substitute and prices prevailing in APMCs may have been misunderstood as a better price.*** The mixed responses on superior marketing infrastructure and low marketing cost indicate the level of satisfaction of sample farmers on the available market infrastructure[9]. Interestingly, in Karnataka many farmers (65.6 per cent) had personal relations with commission agents and trades. This ensured the farmers timely advance credit, ***but also created a space for their exploitation***.

With respect to principal source of price information, it was observed that personal information received through mobile phones (49.4 per cent) and information collected from friends and others (34.4 per cent) were important sources for sample farmers in Karnataka (Table 4.12). However, in Maharashtra the sample farmers largely depended upon commission agents (60.8 per cent) and their friends and people who regularly visit to these markets (24.6 per cent). Almost all sample farmers in the state received the price information at the time of sale for which they agreed too. ***Most of these famers felt that they received price lower than expected. Even in Maharashtra where farmers were less depended on commission agents/traders for price information and credit, they had to sell their produce on the prices decided by commission agents and traders and many of them were not happy with price they received. This clearly indicates the strong hold of market intermediaries in market functioning***.

[8] However, sample farmers from Bangalore, Belgaum and Washi complained that markets are not in proximity to their villages.

[9] Almost all farmers felt that storage/godown facilities were not available. Other facilities such as auction arrangement, loading facilities, weighing facilities and banking and payment facilities were of average quality. More than half the farmers in the sample felt that rest houses were not available.

Table 4.12: Sources and Time of Price Information Received to the Farmers in Maharashtra and Karnataka (%)

| | Source from which the price information was obtained | | | | Time of receipt of price information | | Did you received the price you expected | | | Time of price agreement | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Personal Information | Speaking with friends/ other people | Speaking with commission agent | Speaking with officials | At the time of sale | Some days before sale | Lower than expected | Similar to what expected | Higher than expected | At the time of sale | By Previous agreement |
| **Maharashtra** | | | | | | | | | | | |
| Ahmednagar | 40 | 40 | 20 | 0 | 84 | 16 | 84 | 4 | 12 | 100 | 0 |
| Sangamner | 80 | 16 | 0 | 4 | 100 | 0 | 88 | 12 | 0 | 100 | 0 |
| Yeola | 60 | 40 | 0 | 0 | 92 | 8 | 94 | 6 | 0 | 100 | 0 |
| Lasalgaon/Pimpl | 52 | 36 | 12 | 0 | 84 | 16 | 92 | 6 | 2 | 100 | 0 |
| Washi (Mumbai) | 13.3 | 40 | 46.7 | 0 | 80 | 20 | 86.7 | 13.3 | 0 | 100 | 0 |
| Pune | 46.7 | 33.3 | 20 | 0 | 100 | 0 | 93.3 | 6.7 | 0 | 100 | 0 |
| **Average** | **49.4** | **34.4** | **15.7** | **0.8** | **90** | **10** | **89.7** | **8.0** | **2.3** | **100** | **0** |
| **Karnataka** | | | | | | | | | | | |
| Bangalore | 20 | 12 | 68 | 0 | 100 | 0 | 80 | 20 | 0 | 100 | 0 |
| Belgaum | 24 | 16 | 60 | 0 | 100 | 0 | 88 | 12 | 0 | 100 | 0 |
| Hubli | 12 | 24 | 64 | 0 | 100 | 0 | 92 | 8 | 0 | 100 | 0 |
| Gadag | 8 | 30 | 62 | 0 | 100 | 0 | 100 | 0 | 0 | 100 | 0 |
| Davangere | 9 | 41 | 50 | 0 | 100 | 0 | 84 | 16 | 0 | 100 | 0 |
| **Average** | **14.6** | **24.6** | **60.8** | **0** | **100** | **0** | **88.8** | **11.2** | **0** | **100** | **0** |

#### *4.3.1.7* Other Issues Related to Marketing of Onion

The market imperfections observed/experienced by the farmers are presented in table 4.13. From the table, it can be noticed that almost 65.6 percent of the sample farmers in Karnataka were victims of interlocked market. About 55.2 per cent sample farmers experienced problems related to weighment and more than one fourth noticed unreasonable grading and anomalies in price fixation. Though these problems were not prominent in Maharashtra, some farmers did observe the problems like market entry restrictions, anomalies in price fixation and interlocked market on small extent. For instance, evidence of market imperfection, particularly collusion was observed during price formation in Ahmednagar market amongst traders. While bidding on certain lots was taking place, traders started with about Rs 300 per quintal and kept bidding higher prices till one trader quoted Rs 400 per quintal and another bid at Rs 405 per quintal. The commission agent stopped the auction and said that the two bidders should equally share the produce that was being auctioned. Perhaps the commission agent could have waited for a slightly higher bid (i.e above Rs 405 per quintal) and then sold the produce. But bidding was immediately stopped at Rs 405 per quintal and produce was shared between two wholesalers.

**Table 4.13: Market Imperfections Observed/Experienced by Farmers in Maharashtra and Karnataka (%)**

| | Interlocking of Market | Unreasonable Grading | Weighment Problems | Special Preferences by the buyers | Market entry restrictions | Anomalies in price fixation |
|---|---|---|---|---|---|---|
| **Maharashtra** | | | | | | |
| Ahmednagar | 4 | 0 | 0 | 0 | 16 | 28 |
| Sangamner | 8 | 4 | 0 | 0 | 36 | 14 |
| Yeola | 16 | 0 | 4 | 0 | 4 | 20 |
| Lasalgaon/Pimpl | 8 | 0 | 0 | 4 | 4 | 14 |
| Washi (Mumbai) | 20 | 0 | 0 | 13.3 | 20 | 13.3 |
| Pune | 6.7 | 0 | 0 | 0 | 0 | 26.7 |
| **Average** | **10.0** | 0.8 | 0.8 | 2.3 | 13.9 | 19.66 |
| **Karnataka** | | | | | | |
| Bangalore | 72 | 13 | 48 | 4 | 16 | 12 |
| Belgaum | 56 | 48 | 32 | 0 | 0 | 8 |
| Hubli | 64 | 36 | 60 | 8 | 0 | 12 |
| Gadag | 72 | 24 | 56 | 0 | 0 | 100 |
| Davangere | 56 | 12 | 76 | 0 | 0 | 20 |
| **Average** | **65.6** | 26.4 | 55.2 | 2.4 | 3.2 | 30.4 |

Asymmetric information has been one of the key concerns in the debate of market failure. And, farmers in particular have found themselves the biggest victim of this. Table 4.14 presents farmers awareness about marketing channels in Maharashtra and Karnataka. As observed in our field survey, about 94.6 per cent of the sample farmers in Maharashtra and 86.4 per cent in Karnataka were not aware about marketing channels in APMC and were also not aware of other options to sell their produce.

The extent of awareness among the sample farmers on how to get higher price for their sale was also abysmally low in Maharashtra and Karnataka (Table 4.15). Most of farmers in these states opined that they do not know about the ways of realising higher prices. There were, however, a few farmers in Maharashtra (12.31 per cent) and Karnataka (17.6 per cent) aware of export option. The figures on the extent of awareness about Minimum Support Price (MSP) are close to the figures of NSS situation assessment survey 2003, indicating despite realizing the problem much less has been done on dissemination of market information. Only 3.08 per cent sample farmers from Maharashtra and 11.2 per cent from Karnataka were aware of MSP.

**Table 4.14: Farmers Awareness about Marketing Channels in Maharashtra and Karnataka**

| Markets | Awareness about Marketing Channels | | | | | |
|---|---|---|---|---|---|---|
| | Do not know | CA | CA and Wholesaler | CA, Wholesaler and retailer | Wholesaler, Retailer and Consumer | Total |
| **Maharashtra** | | | | | | |
| Ahmednagar | 92 | 0 | 4 | 4 | 0 | 100 (25) |
| Sangamner | 92 | 4 | 0 | 0 | 4 | 100 (25) |
| Yeola | 100 | 0 | 0 | 0 | 0 | 100 (25) |
| Lasalgaon/Pimpl | 88 | 8 | 4 | 0 | 0 | 100 (25) |
| Washi Mumbai) | 100 | 0 | 0 | 0 | 0 | 100 (15) |
| Pune | 100 | 0 | 0 | 0 | 0 | 100 (15) |
| **Average** | **94.62** | **2.31** | **1.54** | **0.77** | **0.77** | **100 (130)** |
| **Karnataka** | | | | | | |
| Bangalore | 80 | 0 | 12 | 8 | 0 | 100 (25) |
| Belgaum | 84 | 8 | 0 | 0 | 8 | 100 (25) |
| Hubli | 92 | 0 | 8 | 0 | 0 | 100 (25) |
| Gadag | 88 | 8 | 4 | 0 | 0 | 100 (25) |
| Davangere | 88 | 4 | 0 | 8 | 0 | 100 (25) |
| **Average** | **86.4** | **4** | **4.8** | **3.2** | **1.6** | **100 (125)** |

Note: Figures in Parenthesis indicate sample; CA= Commission Agents

**Table 4.15: Extent of Awareness among the Farmers for Getting Higher Sale Price in Maharashtra and Karnataka**

| Market | Do not know | Export Onion | Govt. must fix MSP and it must enter when commission agent does not purchase onion | Freedom to send onion to other state to get good profit | Total |
|---|---|---|---|---|---|
| **Maharashtra** | | | | | |
| Ahmednagar | 80 | 12 | 0 | 8 | 100 (25) |
| Sangamner | 88 | 4 | 8 | 0 | 100 (25) |
| Yeola | 60 | 28 | 4 | 8 | 100 (25) |
| Lasalgaon/Pimpl | 76 | 12 | 4 | 8 | 100 (25) |
| Washi (Mumbai) | 93 | 7 | 0 | 0 | 100 (15) |
| Pune | 93 | 7 | 0 | 0 | 100 (15) |
| **Average** | 80 | 12.31 | 3.08 | 4.62 | 100 (130) |
| **Karnataka** | | | | | |
| Bangalore | 60 | 32 | 0 | 8 | 100 (25) |
| Belgaum | 80 | 4 | 16 | 0 | 100 (25) |
| Hubli | 60 | 16 | 16 | 8 | 100 (25) |
| Gadag | 68 | 16 | 8 | 8 | 100 (25) |
| Davangere | 64 | 20 | 16 | 0 | 100 (25) |
| **Average** | 66.4 | 17.6 | 11.2 | 4.8 | **100 (125)** |

Note: Figures in the Parenthesis indicate number of sample selected

Onion prices are subject to severe fluctuations. Sometimes glut in the market leads to highly unremunerative prices, while in certain year crop failure causes a significant price rise. Income of the farmers, therefore, fluctuates and remains quite unstable. In this background, we asked sample farmers what they suggest if the government could help them to obtain competitive prices for their produce (Table 4.16). In our sample, on average about 54 per cent farmers in Maharashtra and 72 per cent in Karnataka felt that the government should purchase or help them in selling or exporting their onion or at least help them in getting a price of Rs.1000 per quintal. A number of farmers (25 per cent in Maharashtra and 38 per cent in Karnataka) revealed that fixing a price at Rs 1000 per quintal would help them to cover their cost of production and earn a reasonable return on cultivation of onion.

Table 4.16: Farmers' Suggestions to Get Higher Price for Produce/ to Reduce Margin the of Intermediaries in Maharashtra & Karnataka

| | No Suggestions | Govt. should purchaser or help to sell and export onion | Govt. help getting price/ Min Rs.1000/- or above | Need to reduce the number of agents from market | Fertiliser Prices Should be reduced | Other* | Total |
|---|---|---|---|---|---|---|---|
| **Maharashtra** | | | | | | | |
| Ahmednagar | 44 | 32 | 20 | 0 | 0 | 4 | 100 |
| Sangamner | 24 | 40 | 20 | 0 | 0 | 16 | 100 |
| Yeola | 40 | 7 | 20 | 4 | 0 | 29 | 100 |
| Lasalgaon/Pim | 32 | 20 | 33 | 4 | 4 | 7 | 100 |
| Washi | 12 | 40 | 28 | 0 | 20 | 0 | 100 |
| Pune | 36 | 36 | 28 | 0 | 0 | 0 | 100 |
| **Average** | 31 | 29 | 25 | 2 | 4 | 9 | 100 |
| **Karnataka** | | | | | | | |
| Bangalore | 28 | 42 | 30 | 0 | 0 | 0 | 100 |
| Belgaum | 12 | 58 | 30 | 0 | 0 | 0 | 100 |
| Hubli | 20 | 20 | 48 | 12 | 0 | 0 | 100 |
| Gadag | 12 | 12 | 53 | 12 | 4 | 7 | 100 |
| Davangere | 24 | 38 | 30 | 0 | 8 | 0 | 100 |
| **Average** | 19.2 | 34 | 38 | 4.8 | 2.4 | 1.6 | 100 |

Note - * indicate other suggestions selling directly to consumers and keeping prices constant

### 4.3.2 Commission Agents:

Commission agents have an important role to play in regulated markets, a questionnaire was addressed to them regarding marketing practices and infrastructure. In selected APMCs, 117 commission agents have been interviewed, to observe if any insights can be revealed regarding marketing of agricultural produce with special reference to onion.

#### 4.3.2.1 Average Monthly Transactions of the Commission Agent

The monthly transactions by per commission agent and the average price at which these transactions were made are indicated in annexure tables 4.6 and 4.7 respectively. Results indicate that average (weighted) onion transaction is higher in the month of March in Maharashtra, whereas it is December in Karnataka. This might be attributed partly to the differences in seasonal production patterns in the two states and to some extent erroneous information provided by commission agents. Comparing monthly transaction, we did not find significant variation in quantity transacted by the commission agent in Maharashtra, whereas these increased linearly in Karnataka. The average quantities transacted by commission agent were significantly higher in Karnataka as compared to Maharashtra, indicating either their greater hold on market tractions or over-reported figures.

The average price of onion (weighted by transactions) transacted by commission agent in season 2011 (Jan to Dec) in Maharashtra though comes out to be Rs. 1159 per quintal and in Karnataka Rs.1083 per quintal, the distribution of monthly prices show wide variations from the state averages. In most of the months (8 in Maharashtra and 11 in Karnataka) the prices were lower than the weighted average prices for the entire season, indicating very unstable and high prices in few months. The table clearly shows that the prices of onion though remained quite high during the months of Jan to March but continued to decline upto June 2011 in both the states. However, the price trends took departure from each other from the month of July. During this period, the prices have shown an increasing trend in Maharashtra, and a declining trend in Karnataka.

#### 4.3.2.2 Transaction Pattern during Very High and Low Prices of Onion

It is quite obvious and expected that the information provided by sample commission

agents may not be true and likely to give erroneous picture of their tractions and practices. To check the validity of the figures provided by them, we posed them a few questions regarding their transactions behaviour during very high and low prices of onion. The results of these are presented in table 4.17. In the selected sample, about 83.6 per cent of commission agents in Maharashtra and 71.5 per cent in Karnataka stated that they did not change their transaction pattern even in extremely high and low price situation. The statement seems to be too far from the reported figures on prices and quantities transacted (see Annexure Tables 4.6 and 4.7). In Maharashtra and Karnataka commission agents purchased/transacted lower quantities when prices were very low and increased the purchase moderate to high when prices were very high.

**Table 4.17: Commission Agents' Response during Very High and Low Prices of Onion in Maharashtra and Karnataka (%)**

| | Changed Transaction Pattern in the times of high & low Price | If Respond, then how (%) | | | |
|---|---|---|---|---|---|
| | | If Lower price, purchase are reduced | More Purchase when Prices are high | Do not Purchase | Total |
| **Maharashtra** | | | | | |
| Ahemadnagar | 17.6 | 66.7 | 33.3 | 0 | 100 |
| Sangamner | 25 | 0 | 33.3 | 66.7 | 100 |
| Yeola | 25 | 0 | 100 | 0 | 100 |
| Lasalgaon/Pimpl | 33.3 | 100 | 0 | 0 | 100 |
| Washi (Mumbai) | 11.1 | 100 | 0 | 0 | 100 |
| Pune | 6.7 | 0 | 0 | 100 | 100 |
| **Average** | **16.4** | **45.5** | **27.3** | **27.3** | **100** |
| **Karnataka** | | | | | |
| Bangalore | 45 | 74 | 26 | 0 | 100 |
| Belgaum | 35 | 65 | 35 | 0 | 100 |
| Hubli | 25 | 100 | 0 | 0 | 100 |
| Gadag | 25 | 100 | 0 | 0 | 100 |
| Davangere | 20 | 100 | 0 | 0 | 100 |
| **Average** | **28.5** | **87.8** | **12.2** | **0** | **100** |

The above indicates us that more than 16.4 per cent commission agents in Maharashtra and 28.5 per cent in Karnataka responded with changing their transaction pattern in the extreme price situation. Most of the sample commission agents had to adjust their purchase when prices were very low and high by either reducing or increasing quantity purchase and by limiting it to a few quantity purchases.

#### 4.3.2.3 Source of Price Information

To understand on what basis the commission agents decide their purchase price to be paid to the farmers, how they get information on prices and how much knowledge they have about farmers' awareness regarding different sources of prices we addressed them few questions. The details of these are presented in table 4.18. In the sample response, About 59 per cent commission agents in Maharashtra and 22 per cent in Karnataka reported that they decided the purchase price based on prices prevailing in their market. In Karnataka, about 42 per cent of the commission agents mentioned the influence of outside market price in deciding the purchase price. Particularly, about 60 per cent the commission agents from Belgaum, Hubli and Gadag have taken into account the prices outside the market. The commission agents from Maharashtra except, Ahmednagar (47.1 per cent) gave little importance to prices outside the markets. If these results are read along with the access of information on outside market prices, it comes out that most of the commission agents are well connected with wholesalers within and outside markets. Almost 43.3 per cent commission agents in Maharashtra and 53 per cent in Karnataka had access to prices prevailing in various other markets. This also indicates they are well aware of the prices outside markets despite their limited role in market tractions between wholesalers and farmers. ***As argued earlier, in such a situation the possibility of collusiveness among commission agents and wholesalers and a few dominant traders acting as commission agents cannot be ignored.***

Table 4.18: Knowledge of the Commission Agent about the Price of the Onion in Maharashtra and Karnataka (% to sample size)

| Particulars | Maharashtra | | | | | | | Karnataka | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A'nagar | Sangamner | Yeola | Lasalgaon/ Pimpalgaon | Washi (Mumbai) | Pune | All | Bangalore | Belgaum | Hubli | Gadag | Davangere | All |
| **A. From where you get the prevailing price quotations** | | | | | | | | | | | | | |
| From various markets | 35.3 | 25 | 0 | 22.2 | 66.7 | 53.3 | **43.3** | 50 | 60 | 60 | 60 | 35 | **53** |
| ***B. On what basis do you decide the purchase price to be paid to the farmer?*** | | | | | | | | | | | | | |
| No Answer | 29.4 | 25 | 0 | 11.1 | 27.8 | 26.7 | **20** | 30 | 20 | 20 | 10 | 30 | **22** |
| Demand and supply/price prevailing in the APMC | 23.5 | 75 | 75 | 66.7 | 61.1 | 53.3 | **59.1** | 40 | 10 | 10 | 30 | 20 | **22** |
| Prices in outside markets | 47.1 | 0 | 25 | 0 | 11.1 | 0 | **13.9** | 0 | 60 | 60 | 60 | 30 | **42** |
| Quality /grade of onion | 0 | 0 | 0 | 0 | 0 | 20 | **3.3** | 30 | 10 | 10 | 0 | 20 | **14** |
| Rate prevailing on previous days | 0 | 0 | 0 | 22.2 | 0 | 0 | **3.7** | 0 | 0 | 0 | 0 | 0 | **0** |
| ***C. Are the farmers aware of the price at which the produce is likely to be sold in the market?*** | | | | | | | | | | | | | |
| Yes | 58.8 | 75 | 75 | 55.6 | 72.2 | 63.2 | **79.1** | 70 | 40 | 40 | 25 | 30 | **41** |
| | | | | | | | | | | | | | |
| ***D. What is the source of information about the price to Farmers?*** | | | | | | | | | | | | | |
| Do Not Know | 41.2 | 0 | 0 | 11.1 | 50 | 53.3 | **26** | 20 | 15 | 0 | 40 | 50 | **25** |
| Direct Contact with CA/Wholesaler through mobile | 23.5 | 75 | 75 | 66.7 | 33.3 | 40 | **52.3** | 20 | 50 | 50 | 20 | 15 | **31** |
| Enquiry over phone- APMC | 0 | 0 | 0 | 11.1 | 0 | 0 | **1.8** | 0 | 0 | 0 | 0 | 0 | **0** |
| Fellow Farmer | 0 | 25 | 25 | 0 | 0 | 0 | **8.3** | 40 | 20 | 35 | 30 | 20 | **29** |
| Newspaper/Radio | 35.3 | 0 | 0 | 11.1 | 16.7 | 6.7 | **11.6** | 20 | 15 | 15 | 10 | 15 | **15** |
| ***E. Do they contact you for the price before bringing the product to the Market?*** | | | | | | | | | | | | | |
| Yes | 64.7 | 100 | 75 | 88.9 | 88.9 | 93.3 | **83.6** | 30 | 45 | 40 | 60 | 55 | **46** |

When we focus on their knowledge about farmers' awareness about sources of price information, we get much different response from what farmers reported in table 4.12. Interestingly, according to commission agents almost 52 per cent farmers in Maharashtra and 31 per cent in Karnataka get price information from them and wholesalers through mobile and telephones. The figures seem to be underreported for Karnataka and over-reported for Maharashtra. This may be partly due to some commission agents shown their ignorance (rather refusing to budge with information). But also when read carefully table 4.12, it comes out that most of the farmers relied upon information collected from friends and others in the markets on the time of sale.

#### 4.3.2.4 Perceptions and Suggestions for the Improvement of Infrastructure Facilities

The view of the commission agents was obtained on various aspects of the prevailing marketing infrastructure in the APMCs. About 45 percent of the commission agents felt that the location of the market was good. Also commission agents were satisfied with certain facilities such as auction arrangement, supervision of sale, loading facilities, weighing facilities, price display and banking facilities. However, they were dissatisfied with certain features. In Pune market, some of them felt that storage facilities, sorting facilities, parking facilities, cold storage and waste disposal facility were not satisfactory or not available.

Commission agents' suggestions to state governments in Maharashtra and Karnataka are given in table 4.19. Most of the respondents have no comments/suggestions for the government. However, very few commission agents have asked for allowing continuous exports which government should consider since the export ban affect the market tractions.

**Table 4.19: Commission Agents' Suggestions to State Governments in Maharashtra and Karnataka (%)**

| | Suggestions to the Government to improve market facilities | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | No Comments | Allow export | No Control on APMC | Provide Godown facility | Provide Rest Room | Provide Subsidies for Transport | Provide subsidy for Storage | Supervise Transactions of APMC |
| **Maharashtra** | | | | | | | | |
| Ahmednagar | 70.6 | 17.6 | 5.9 | 0 | 0 | 0 | 0 | 5.9 |
| Sangamner | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Yeola | 25 | 25 | 25 | 0 | 25 | 0 | 0 | 0 |
| Lasalgaon/Pimpl | 55.6 | 33.3 | 0 | 0 | 0 | 11.1 | 0 | 0 |
| Washi (Mumbai) | 88.9 | 0 | 0 | 5.6 | 0 | 0 | 5.6 | 0 |
| Pune | 86.7 | 6.7 | 0 | 6.7 | 0 | 0 | 0 | 0 |
| **Average** | **76.1** | **11.9** | **3** | **3** | **1.5** | **1.5** | **1.5** | **1.5** |
| **Karnataka** | | | | | | | | |
| Bangalore | 80 | 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| Belgaum | 75 | 25 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hubli | 80 | 12 | 0 | 0 | 0 | 0 | 8 | 0 |
| Gadag | 78 | 22 | 0 | 0 | 0 | 0 | 0 | 0 |
| Davangere | 88 | 12 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Average** | **80.2** | **18.2** | **0** | **0** | **0** | **0** | **1.6** | **0** |

### 4.3.3: Wholesalers

In regulated markets wholesalers are the main buyers of the produce. Wholesalers are required to have a license in order to purchase in APMCs. The commission agent acts as a facilitator between farmer and wholesaler and ensures that the farmer receives the price at which his produce is sold, although he may receive payment from wholesaler much later, even after a couple of months.

#### 4.3.3.1: Monthly Transaction Pattern and Transaction Price of Wholesalers

The details of monthly transactions by wholesaler and the average price at which these transactions were made are shown in annexure tables 4.8 and 4.9 respectively. From table 4.8, it is quite evident that quantities transacted by wholesalers were quite high in volumes in Yeola and Lasalgaon/ Pimpalgaon in Maharashtra and

Bangalore and Hubli in Karnataka. The monthly purchases made by them though remained more or less same (albeit with some marginal fluctuations) in Maharashtra, it continued to increase in Karnataka. In fact, the purchases made by wholesalers in Bangalore linearly increased from Jan to Dec., and in Belgaum, Hubli, Gadag and Davangere these shown a declining trend during the months of January to July and an increasing trend during the months of August to December.

The average price of onion (weighted by transactions) transacted by wholesalers during the season of 2011 (Jan to Dec) and the distribution of monthly prices shows more or less similar trends as observed in the case commission agents. The average price of onion transacted by wholesaler was Rs. 1129 per quintal in Maharashtra and Rs.1083 per quintal in Karnataka. The distribution of monthly prices manifested wide variations from the state averages. In most of the months (8 in Maharashtra and 11 in Karnataka) the prices were lower than the weighted average prices for the entire season, indicating very unstable and high prices in few months. Notably, the prices of onion during the month of January and February (2011) were substantially high in all the markets of both the states as the crop was affected by unseasonal rains. The prices of onion though were higher than normal during the months of Jan to March, these shown a declining trends during all the months of 2011 in Karnataka and upto June in Maharashtra. In the subsequent months, the prices followed an increasing trend in Maharashtra and rose substantially during the months of October to December, particularly in Ahmednagar, Sangamner, Washi and Pune.

In Karnataka, wholesalers from Belgaum and Bangalore realized higher prices for their purchased produce, whereas in Maharashtra these were from Pune and Ahmednagar. The higher prices can be partly attributed to the greater hold of wholesalers in the markets and partly to better quality of onion with good packing. The sorted and graded onion generally command higher prices. For instance in Lasalgaon, Pimplegaon and Yeola markets, the produce arrives without packing in gunny bags and no grading is done by farmers. Hence the produce commands a lower price in these markets. The main marketing costs borne by wholesaler are loading produce in truck, and market and supervision fees. Besides, the wholesaler has to also bear transport costs and taxes, and other incidental and establishment costs.

To understand whether there exist elements of collusive behaviour among the traders and commission agents or whether they rely upon hoarding to get higher profits, we made a few visits to the markets and engaged in the discussions with concerned market functionaries. From our discussions, it was quite clear that traders stored onion in anticipation of higher prices. After making purchases from farmers, they stored the onion instead of immediate sales. Further, some commission agents reported that they have license to operate as wholesaler and purchase onion. They were normally the 'A' class commission agents and played a dual role in purchasing as well as facilitating the transactions. These commission agents also indicated that they store onion. However, when an attempt was made to find out the quantity store by them, they were very reluctant to disclose the information.

#### 4.3.3.2: Transaction Pattern during Very High and Low Prices of Onion

About 30 per cent of wholesalers in Maharashtra and 60 per cent in Karnataka reported that they adjusted their purchase and sale pattern in times of very high or low prices (Table 4.20). The wholesalers in Yeola and Washi are well equipped with information and connected with other markets. Therefore, the response given by them cannot be taken for granted. Even in Pune there seems to be underreporting of the figures given by wholesalers. Most of the wholesalers who responded during the high and low prices reported that they adjusted their transaction pattern considering the size of demand and availability of working capital. Some wholesalers stated that they stop trading or purchase fewer volumes of transactions. It seems that most of these must be small wholesalers in the having not enough capital base.

Table 4.20: Wholesalers' Response during Very High and Low Prices of Onion in Maharashtra and Karnataka (%)

| Markets | Respond by Changing Purchase and Sale Pattern | If respond, how | | | |
|---|---|---|---|---|---|
| | | Depends on Order/Demand | If Prices are unstable, We Stop Trading | Depends on working Capital | Less Purchase when prices fluctuate |
| **Maharashtra** | | | | | |
| Ahmednagar | 66.7 | 100 | 0 | 0 | 0 |
| Sangamner | 50 | 0 | 66.7 | 33.3 | 0 |
| Yeola | 0 | 0 | 0 | 0 | 0 |
| Lasalgaon/Pimpl | 36.4 | 25 | 25 | 0 | 50 |
| Washi (Mumbai) | 0 | 0 | 0 | 0 | 0 |
| Pune | 20 | 100 | 0 | 0 | 0 |
| **Average** | **30.3** | **40** | **30** | **10** | **20** |
| **Karnataka** | | | | | |
| Bangalore | 75 | 35 | 0 | 65 | 0 |
| Belgaum | 90 | 100 | 0 | 0 | 0 |
| Hubli | 60 | 100 | 0 | 0 | 0 |
| Gadag | 20 | 60 | 30 | 10 | 0 |
| Davangere | 35 | 55 | 24 | 21 | 0 |
| **Average** | **60** | **75** | **18** | **25** | **0** |

#### 4.3.3.3: Source of Price Information and Determinants of Purchase Price

Table 4.21 gives details of sources of price information and the basis for purchase price to be paid to the farmers by wholesalers in Maharashtra and Karnataka. ***Almost all the wholesalers in Maharashtra and Karnataka get the information on the prices of the onion from contacting commission agents and wholesalers operating in various markets.*** This indicates the existence of strong networks between wholesalers and commissions agents, not only in the market they are operating, but also with the market functionaries in distant markets.

In Maharashtra and Karnataka, a good number of wholesalers reported that the prices realized by farmers were normally determined by demand and supply conditions. That is, the purchase prices of onion were decided on the basis of demand and supply existing in given market. Interestingly, higher percentage of wholesalers in Karnataka (77.8 per cent) attributed to market supply and demand for price determination as compared with Maharashtra (58.7 per cent). The prices prevailing in other markets were less important for the wholesalers in Karnataka; however, significant basis for wholesalers in Maharashtra (25 per cent) in deciding the purchase prices.

Wholesalers' perceptions on awareness of farmers about market price and sources of information about the prices available to them in Maharashtra and Karnataka are presented in table 4.22. In Maharashtra and Karnataka by and large the wholesalers felt that farmers were aware of the prices in the market. However, when asked to wholesalers about from which sources farmers get price information, about 60.6 per cent wholesalers in Karnataka and 21.2 in Maharashtra had no idea. Most of the wholesalers believed that farmers get information from newspapers, television and mobile in Maharashtra and from commission agents operating in the markets.

Table 4.21: Source of Price Information Available to Wholesalers and Basis for Purchase Price to be Paid to the Farmers by Wholesalers in Maharashtra and Karnataka (%)

| | Source of Information (%) | Basis for Purchase Price to be Paid to the Farmers | | | | |
|---|---|---|---|---|---|---|
| | By contacting commission agent and fellow wholesalers in various markets | Market Demand and Supply | Prices in Other Markets | Open Auction | Import Export Prices of Onion | No Comments |
| **Maharashtra** | | | | | | |
| Ahmednagar | 100 | 66.7 | 33.3 | 0 | 0 | 0 |
| Sangamner | 100 | 50 | 33.3 | 16.7 | 0 | 0 |
| Yeola | 100 | 50 | 50 | 0 | 0 | 0 |
| Lasalgaon/Pimpl | 100 | 45.5 | 36.4 | 0 | 9.1 | 9.1 |
| Washi (Mumbai) | 100 | 100 | 0 | 0 | 0 | 0 |
| Pune | 100 | 40 | 0 | 0 | 0 | 60 |
| **Average** | **100** | **58.7** | **25.5** | **3** | **2** | **11.5** |
| **Karnataka** | | | | | | |
| Bangalore | 100 | 75 | 5 | 5 | 15 | 0 |
| Belgaum | 100 | 80 | 10 | 10 | 0 | 0 |
| Hubli | 100 | 78 | 0 | 22 | 0 | 0 |
| Gadag | 100 | 76 | 0 | 24 | 0 | 0 |
| Davangere | 100 | 80 | 0 | 20 | 0 | 0 |
| **Average** | **100** | **77.8** | **3** | **16.2** | **3** | **0** |

Table 4.22: Wholesalers Perceptions on Awareness of Farmers about Market Price and Source of information about the Price Available to them in Maharashtra and Karnataka (%)

| Market | % Farmers Aware about Market Price | Source of Information (%) | | | | | |
|---|---|---|---|---|---|---|---|
| | | APMC | Contacting Commission Agents | News-paper, TV, Mobile | Other Markets | Neighbour Farmer & relatives | No Idea |
| **Maharashtra** | | | | | | | |
| Ahmednagar | 100 | 33.3 | 0 | 66.7 | 0 | 0 | 0 |
| Sangamner | 16.7 | 0 | 0 | 83.3 | 0 | 0 | 16.7 |
| Yeola | 50 | 16.7 | 16.7 | 33.3 | 0 | 16.7 | 16.7 |
| Lasalgaon/Pimpl | 72.7 | 18.2 | 0 | 36.4 | 9.1 | 9.1 | 18.2 |
| Washi (Mumbai) | 100 | 0 | 0 | 100 | 0 | 0 | 0 |
| Pune | 40 | 0 | 0 | 40 | 0 | 0 | 60 |
| **Average** | **57.6** | **3** | **3** | **51.5** | **3** | **3** | **21.2** |
| **Karnataka** | | | | | | | |
| Bangalore | 90 | 0 | 12 | 30 | 0 | 30 | 28 |
| Belgaum | 95 | 0 | 20 | 15 | 0 | 0 | 65 |
| Hubli | 90 | 0 | 25 | 0 | 0 | 0 | 75 |
| Gadag | 50 | 0 | 30 | 0 | 0 | 0 | 70 |
| Davangere | 40 | 0 | 25 | 10 | 0 | 0 | 65 |
| **Average** | **73** | **0** | **22.4** | **11** | **0** | **6** | **60.6** |

#### 4.3.3.4: Wastage of Onion in Transaction

Wastage as a percentage of purchases was observed to be 5 per cent on an average across all markets in Maharashtra and 3 per cent in Karnataka (Annexure table 4.10). It was highest in Lasalgaon market, followed by Yeola, perhaps because the crop is not of very good quality and farmers do not do grading. Also from Lasalgaon, the produce is transported to distant markets and hence wastage is likely to be more. As the

produce in Ahmednagar is of good quality and farmers already do grading and sorting, the wastage is likely to be low. In Mumbai market, no wastage was observed, perhaps because the produce is sold immediately to the retail outlets

#### 4.3.3.5: Perception of Wholesalers on Infrastructure Facilities

With respect to the infrastructure, wholesalers across the markets noted that grading, packing and sorting facilities are not upto their expectations. Storage facilities in the markets are also poor. By and large, it appears that the wholesalers did not face major difficulties in purchasing onion from the farmers and do not face any problem in the market yard. However, wholesalers, especially in Lasalgaon felt that transport was not easily available and there is need for railway wagons. Sometimes commission agents also have licensee as wholesaler and purchase farmers' produce. Therefore, we asked few questions to wholesale about whether they provided any help to the farmers. From our discussion, we found that wholesalers did not play any significant role in providing facilities to farmers. In few cases, cleaning, grading and packing facilities are provided by the wholesaler. However, it is on very small scale.

### 4.3.4: Retailers

In the supply chain, retailers normally purchase from wholesalers or in some cases they also buy directly from farmers through APMC. As it is well known, there are different types of retailers through which the product finally reaches to consumer. A questionnaire was therefore addressed to 60 retailers, 10 in each of the selected districts, in order to observe the most popular type of retail outlet and other related issues. The observations are presented below-

#### 4.3.4.1 Type of Retail Establishment

As discussed in the earlier section, out of the 50 retail establishments selected, it was observed that 91.7 per cent of them were wet (local fresh fruits & vegetable) markets, while 6.7 per cent were Kirana shops. Wet markets are normally located in several places and consumers find it convenient to make their purchases from such markets. Kirana shops, besides keeping groceries also tend to keep a stock of onion for the convenience of their customers. In some APMCs like Pune, many push carts purchase a bag of onion and sell during the course of the day by moving around. Push carts, therefore, create place and time utility for consumers and also minimize on their transport costs.

#### 4.3.4.2 Purchase Pattern of Retailers

The details of average monthly purchases made by retailer in Maharashtra and Karnataka are presented in annexure table 4.11. On an average each retailer purchased annually 223.2 quintals in Maharashtra and 91.73 quintals in Karnataka. The quantity purchased by retailer in Pune (625.9 quintals), Washi (331.1 quintals), Bangalore (280.3 quintals), Hubli (196.16 quintals) and Belgaum (175.7 quintals) were much higher than the retailer from rest of selected markets due to relatively higher urbanization and concentration of hotels in these areas. The lowest purchases were observed in Lasalgaon/Pimpalgaon. This is expected because of its size of population (merely 12,525) and most consumers may also be producers of onion retaining some amount for self consumption. Our field survey indicated that several wet markets for fruit and vegetables do not keep onion or keep them in very limited quantities. However, wet markets in Pune and Mumbai have a huge onion. On an average retailer in Karnataka purchases 7.64 quintal per month, much lower than that of Maharashtra (18.6 quintals).

#### 4.3.4.3 Net Margin Earned by Retailer

From the table 4.23, it is quite evident that on an average retailer in Karnataka (Rs. 524 per quintal) earned more on the transactions of onion than the retailer of onion in Maharashtra (Rs.408 per quintal). Though there are wide variations in the net margin earned by retailers across the markets, retailer from urban centers like Bangalore (Rs.704 per quintal) and Pune (Rs. 620 per quintal) got much higher margins per quintal. Notably, retailers from these centers not only benefited in terms of higher margin but also on the account of large quantity sale. Even though discount for wastages and marketing cost incurred by retailer, net margin earned by retailer may not change significantly.

Table 4.23: Average (Weighted) Onion Price Paid by Retailer to Wholesaler and Average Sale Price of Retailer in Maharashtra and Karnataka

(Rs/qtls)

| Market | Price Paid by Retailer to Wholesaler (Jan to Dec 2011) | Average Sale Price of Retailer (Jan to Dec 2011) | Margin |
|---|---|---|---|
| **Maharashtra** | | | |
| Ahmednagar | 1431 | 1832 | 401 |
| Sangamner | 1413 | 1795 | 382 |
| Yeola | 1065 | 1427 | 362 |
| Lasalgaon/Pimpl | 904 | 1121 | 217 |
| Washi (Mumbai) | 1150 | 1513 | 363 |
| Pune | 1291 | 1911 | 620 |
| **Average** | **1239** | **1647** | **408** |
| **Karnataka** | | | |
| Bangalore | 1276 | 1980 | 704 |
| Belgaum | 1188 | 1678 | 490 |
| Hubli | 1098 | 1587 | 489 |
| Gadag | 1385 | 1837 | 452 |
| Davangere | 973 | 1435 | 462 |
| **Average** | **1201** | **1725** | **524** |

#### 4.3.4.4 Wastage of Onion

Across all six districts, it was observed that about 4 per cent of onion purchased by retailers was wasted in Maharashtra and 12.41 per cent in Karnataka (Annexure table 4.12). Some lessons can be shared among these states to reduce wastages at retailer level. Retailers normally have a quick turnover and do not keep stocks for long. In fact, they regularly purchase from APMC according to their estimated demand. Hence wastage was also observed to be low.

#### 4.3.4.5 Problems Faced by Retailers

In Maharashtra and Karnataka, retailers face problems while marketing their produce. The problems faced by retailers are indicated in annexure table 4.13. Though most of the retailers did not face problems in purchasing of onion in Maharashtra (87 percent) and Karnataka (91 per cent), many of them felt that there were fewer customers and therefore their sales were low. This was largely noticed in upcountry markets like Ahmednagar, Sangamner and Lasalgaon, as their average quantity sale was not much.

### 4.3.5: Consumers

The supply chain ends when the product reaches the consumer, the final user of the commodity. It was therefore thought necessary to address a few questions to consumers to gain insights on the marketing of onion. The sample covered 60 consumers, 10 from each district.

#### 4.3.5.1 Details on Consumers' Choice of Place, Frequency of Purchase and Others

Annexure table 4.14a presents the choice of place for purchase of onion by consumer in Maharashtra. With respect to purchase of onion, it was observed that ***78.3 per cent of respondents preferred wet market as their first choice***. However, in Mumbai (Washi) almost all consumers preferred to purchase from private modern retail outlet (Annexure Table 4.15). Proximity, relatively lower prices, availability of quality onion and other vegetable items at one place were reported to be principal reasons behind preferring wet market over other retail outlets (Annexure Table 4.14a). Only two consumers noted that they preferred push carts because they received service at their door step, while 16.67 per cent consumers purchased from private modern retailers because it was nearby and was of good quality.

The choices of place for purchase of onion by consumer in Karnataka are given in annexure table 4.14b. Results indicate that about 82 per cent of respondents preferred wet market as their first choice of purchase. The main reasons mentioned for preferring these markets were mostly proximity, relatively lower prices,

availability of quality onion and other vegetable items at one place.

From our sample analysis on consumers, it was noticed that most of the consumers in Maharashtra (91.7 per cent) purchased onion once in two weeks and in Karnataka (76 per cent) once a week (Annexure Table 4.16). Most of these consumers purchased on an average about 2.1 kg of onion per visit at an average price of Rs 9.6 kg in Maharashtra and 4.5 kg of onion per visit at an average price of Rs. 8.72 in Karnataka (Annexure Table 4.17). Consumers from Ahmednagar, Washi, Bangalore, and Belgaum in particular paid higher average prices for purchasing onion. In the select sample, while purchasing onion consumers reported that they largely took into account color (particularly red), size (mainly medium), price (most often low) and freshness (Annexure Table 4.18).

***Some of the consumers suggested that to improve the supply chain of onion, government should bring the policies to reduce the number of intermediaries and at the same time provision could be made for direct sale by farmers to consumers*** (Table 4.24).

**Table 4.24: Consumer Opinion to Improve Supply Chain of Onion in Maharashtra and Karnataka**

(% to sample size)

| Place of purchase | Govt. Purchase and Sell it to Retailer/Govt Control | Need to reduce Intermediaries | If Farmer Sell Directly to Consumer then Onion Will Cheap | No Need of Improve the supply chain | Cooperative Soc sell | No Comment/ Don't know |
|---|---|---|---|---|---|---|
| **Maharashtra** | | | | | | |
| Ahmednagar | 21 | 35 | 35 | 0 | 0 | 9 |
| Sangamner | 0 | 50 | 40 | 0 | 0 | 10 |
| Yeola | 20 | 20 | 60 | 0 | 0 | 0 |
| Lasalgaon/Pimpl | 10 | 30 | 40 | 6 | 12 | 2 |
| Washi (Mumbai) | 0 | 70 | 10 | 0 | 0 | 20 |
| Pune | 0 | 65 | 31 | 0 | 0 | 4 |
| **Average** | **8.5** | **45** | **36** | **1** | **2** | **7.5** |
| **Karnataka** | | | | | | |
| Bangalore | 30 | 20 | 30 | 10 | 10 | 0 |
| Belgaum | 10 | 30 | 20 | 20 | 0 | 20 |
| Hubli | 20 | 40 | 30 | 10 | 0 | 0 |
| Gadag | 20 | 20 | 40 | 20 | 0 | 0 |
| Davangere | 10 | 20 | 40 | 10 | 10 | 10 |
| **Average** | **18** | **26** | **32** | **14** | **4** | **6** |

### 4.4 Relationship between farmer-commission agents and traders/ wholesalers at selected markets in Maharashtra

During our field visits, we noticed that farmers had close personal relations with commission agents particularly in Lasalgaon, Pimpalgaon and Yeola APMCs. Quite good number of commission agents shown their interest in getting higher auction prices for the farmers. However, in urban markets such as Pune and Washi, farmers did not appear to have such bondage with commission agents. The commission agents in these markets appeared to have close relations with wholesalers as they were noticed largely interested in selling the produce to wholesalers/traders at lower prices.

Apart from these, we also noticed that the commission agents paid immediately to farmers after sale of their produce and charged a commission of 6 per cent on the total value of sale. The commission agents however did not ask for immediate payment from wholesalers. From our discussion with them, it was revealed that they had some understanding with wholesalers on payment, which allowed them to pay the amount of sale in a month or two. According to some commission agents, if wholesalers wished to pay within fifteen days, they passed on 2 per cent of their commission to wholesalers. ***This indicates commission agents in the markets are quite interested to keep strong relations with wholesalers by allowing wholesalers to pick up the produce on credit for a month or two. In case of early payment, wholesalers were rewarded with some incentives.***

### 4.5 Trader's view on market imperfections leading to problems of plenty as well as scarcity of onion

Maharashtra contributes 32 per cent in the overall onion production of India (2011-12) and Lasalgaon and Pimpalgaon, located in Nashik district stand out among all production locations. Onion is a highly politically sensitive crop, mainly because it is an important part of the diet of almost all households and particularly of the poor. The sharp fluctuations witnessed in onion prices during 2010-11 (rise) and 2011-12 (fall) have raised several concerns over the state of onion markets and their functioning in India. The instable prices are certainly indicator of imperfect markets plagued by infrastructural bottlenecks and inefficient regulatory system in the country. To have better view on the dimensions of market imperfection, we felt necessary to get acquainted with the problems faced by traders and invite some suggestions from them over these problems.

Our discussion with the Traders' Association in this regards revealed that they face serious infrastructural bottlenecks in the trade of onion. Most of them believed that these bottlenecks have often caused instability in onion prices across India. While explaining the situation in Lasalgaon/ Pimpalgaon onion markets, many traders stated that these two markets alone accommodates daily 3 to 5 lakh quintals of onion arrival. However, when need for storing and transporting the surplus onion arises, they feel quite helpless. Some traders even highlighted that these two markets are well connected by railway through six stations namely, Khedwadi, Niphad, Lasalgaon, Manmad, Nandgaon and Yeola. But they often get less than required railway wagons. Even if they think of alternative mode of transport, road (trucks) it is far costlier than trains. Traders reported that the cost of transporting the produce to Kolkata by road comes around Rs 3.70 per kg and by railway only Rs 1.50 per kg. Further, even if traders are willing to transport onion by road at a much higher cost, they do not get trucks to transport. This often leads to accumulation of supply in the local markets and shortages in other parts of the country. Some traders even mentioned that their problem does not end here, but expand further. ***The inability to transport the accumulated produce inhibits many temporarily from participating in market auctioning. The withdrawal of many traders from participating in auctions creates less competition and therefore prices start falling.*** Many traders stated that if their demand for more number of railway wagons (200; each having holding capacity 1600 tonnes of onion) is met, then onion can be cheaply and timely be transported to all consuming centres in the country and there will not be problem of plenty here and scarcity over there. While explaining his case one trader narrated that there was shortage of onion in Guwahati market in Assam and prices were enough to make good profit. He wanted to transport the produce to Guwahati, but was unable to do so due to unavailability of railway wagons. If railway wagons were available, he could have easily supplied onion to Guwahati markets at a price of Rs 7 per kg. However, due to lack of availability of wagons and trucks, stocks of onion were mounting in Nashik and in Guwahati it was getting worse with rising prices.

Another problem faced by the traders is ***the export ban*** issued by the government whenever prices begin to show an upward movement. ***Many traders complained that a sudden ban on export of onion not only deprived them from earning higher margin but also lost their credibility in the export markets as they failed to deliver their commitment.*** Foreign buyers, according to them, often prefer reliable suppliers who can maintain their commitments and if traders fail on reliability, they lose customers in international markets. In addition to this, we also noticed that ***many traders dealing with exports were quite disappointed with the arbitrary way of fixing Minimum Export Price (MEP).*** Even if government lifts the ban on onion exports, traders never felt encouraged as they always anticipated hike in MEP to the extent to kill their incentives and restrict them from selling in international markets. Interestingly, ***some traders revealed that even though the letter of credit and other documents prepared on the basis of MEP, few big traders manage to export onion at prices below MEP. These exporters engage in such practice because they could still get good profit on inflated records. In any case, some traders reiterated that higher MEP helped big exporters to take advantage of lower onion price (as supply in the domestic markets increases) in the domestic markets and*** loopholes existing in monitoring of onion trade.

In nutshell, our discussion with traders (also those who engaged in export) indicated that the policies related to export for onion has been always arbitrary and therefore India is not

considered to be a regular and reliable exporter of onion in international markets. The restrictions on free trade are against the interest of farmers as they end up receiving lower prices for their produce. A few exporters revealed that as soon as India imposed ban on exports of onion, some onion importing countries immediately placed their orders to China which deprived Indian exporters from the opportunity to export. These traders felt that the central government's decision to impose a ban on the export of onion was totally blind and it was made without proper assessment of supply in the domestic markets.

During our discussion, ***many traders suggested that the fluctuations in onion prices to the greater can be dealt with proper development of post harvest technology in the country.*** According to them the contemporary method of onion storage by farmers is quite inefficient. The traders felt that farmers who store their produce in the hope of realizing higher prices in the lean period, though benefit from the storage, but also suffer from shrinkage and spoilage of the crop. According their estimates, ***about 40 percent of the crop stored is lost due to shrinkage and damage.*** Traders, hence, felt that there is urgent need for development of technology specially designed to storage of onion that will enable the crop to remain in the same condition without any shrinkage or spoilage. This will also help to increase the supply of onion in lean season, assure consumers availability of onion at reasonable prices and avoid losses of farmers. Some traders even suggested that whenever there is sudden fall in prices of onion, government agencies could mop up at least 30 per cent of the produce to prevent downward pressure on the prices.

When asked what they feel about new APMC act, we found that many of them in general were less familiar with the new act and therefore expressed a need for more publicity. Some even stated that they ***are not in position to take any advantage of new APMC act as the licenses for starting private markets are not easily available and there are numerous restrictions on the location of such markets.*** They, therefore, felt that the scope for promoting competition and creating new additional markets that could function simultaneously with regulated markets seem to be very limited at present.

**4.6 Functioning of selected APMCs with respect to onion prices, sales and market inefficiency causes and solutions.**

Pimpalgaon Basant and Lasalgaon are major onion markets in Nashik district. Our visits to these markets and interview with the APMC officials revealed that by and large Lasalgaon/Pimpalgaon had all major features of a regulated market. Sales took place by auction method and farmers received payment for their sales within a day. There relation between commission agents and farmers were good and some commission agents extended loans to the later. So far infrastructural facilities were concerned; by and large these were in good conditions. Weighing was done through electronic weighing machine. Market information was disseminated through newspapers, weekly reports, television, etc. The arrangement for stay of farmers in case his produce could not be sold was made. The officials also reported that the entire onion produced in the district is sold in APMCs and the practice of commission agents deducting 2 kgs of onion for every quintal sold was discontinued.

However, according APMC officials, one of the major problems often faced by them is frequent strikes called by market functionaries causing the closure of the market. They highlighted that ***the act of strike often leads to accumulation of stocks and fall in the onion prices. This adversely affects farmers.*** In this regard, APMC officials felt that government must bring a provision in the Act preventing the closure of market. Another major problem that Pimpalgaon Basant market continues to face is the number of court cases filed by the market functionaries, putting unnecessary financial burden on APMC revenue account.

The APMC in Ahmednagar also had all features of a well regulated market with sales taking place through open auctions and payment is made to farmers on the same day. Officials in several APMCs maintained that farmers prefer to sell through auction system and farmers have faith in it. Direct marketing has still not made any progress and was functioning on a very limited scale. Further, APMCs have Grievance Redressal Cells well in place to address any issue of the farmers. APMCs exercise their regulatory powers over commission agents and traders to assure timely payment to farmers. However, they felt

that this may not be possible in case of sales through direct marketing or other systems.

Another major regulated market located in an urban area is Mumbai Agricultural Produce Market Committee (MAPMC). The market area of the committee comprises of Greater Mumbai, Thane Taluka and 30 villages of Uran Taluka of Raigad district. Mumbai APMC also has features of a well regulated market such as computerized accounting, electronic weighing system, provision of payment within 24 hours, market information display on Display Board, availability of MCX facility and registration of vehicles to prevent unauthorized trade. A Vigilance Section is set up to intercept the vehicles carrying unauthorized agricultural produce in the jurisdiction of Mumbai APMC. The MAPMC also has necessary infrastructure such as banks, post office, electronic telephone exchange, farmers Rest House, weighing machines, weigh bridges, auction halls, warehouses, etc.

An important feature of MAPMC is that sales take place between two traders on sample basis. The officials at MAPMC revealed that arrivals in the market are unlimited and hence there is no scope for auction as there is time constraint. The recent advancement in telecommunication has helped farmers to obtain information on prices prevailing in various regulated markets and almost all farmers are aware of prevailing market rates. Accordingly, they are in a position to decide in which market they want to sell for getting higher prices. Commission agents having close personal relations with farmers send their personnel to the interiors to keep the farmers informed about conditions prevailing in the market and also arrange to sell the produce of farmers, if necessary. If the farmers decide to sell in MAPMC, they transport their produce to the market. The commission agents arrange to sell their produce and charge a commission of 6.5 percent of the value of sales. APMC officials however, reported that farmers by and large do not themselves come to sell their produce in MAPMC since transport and other logistic costs such as boarding and lodging are very high. Therefore the commission agents receive the produce of the farmers and sell it on his behalf to wholesalers in MAPMC. Mumbai is a huge consumption market and stocks of onion are mostly consumed locally while about 10 to 15 percent is exported. The produce normally reaches to MAPMC by trucks as most of the supply of onion comes from within Maharashtra.

***During our the field visits in Hubli and Belgaum APMCs, two types of collusions, namely price fixing and bid rigging came to our notice.*** The local commission agents and traders were having strong networks with traders in other states (i.e. Goa and Andhra Pradesh). Our discussion with some local commission agents and traders indicated that they purchased onion for big traders of Goa and Andhra Pradesh. The quantity and price of the onion was decided over the phone on a day before the onion market opened. From the discussion, the local traders and commission agents maintained good networks with the traders in Goa and Andhra Pradesh to get bulk orders at better prices. The relationship with farmers, however noticed to be casual as there were hardly farmers who supplied the produce at regular basis.

The collusion in these markets even though is small to affect the prices of the onion at country level but nonetheless underline the inefficiencies in onion markets, and was detrimental to both the consumers and producers. It also gives a signal that how intermediaries control onion trade and prices in the country.

Some of the observed reasons behind such collusion are -

- Less number of commission agents and traders: The Belgaum APMC has around 32 commission agents and 10 to 15 major onion traders. In case of Hubli, commission agents and traders share more or less same strength numerically, around 50 to 55. However not all of them are active all over the year. From January to August (off-season) the number comes down to 10 traders in both markets. Such less number of traders and commission agents make it easier for them to discuss and manipulate the prices.

- The majority of commission agents and traders are functioning in the markets since past 10 to 15 years and very few new commotion agents and traders (1-2) have got the license. Such long presence with each others in the market has helped them in developing mutual

understanding and gives undue advantage to these established trading firms in onion trade.

- Strong presence of Trade Associations: Both the markets have a presence of strong and active trade association. The Associations have regular meetings and elections. Such functioning associations help in building direct or indirect consensus about the onion pricing.

- Traders wear many hats: Many commission agents are themselves traders or purchase onion for big traders in other states. Such multiple roles in trading have given upper hand to manipulate the prices.

## 4.7 Concluding Remarks

Some of the major conclusions and remarks coming from field data analysis are -

- Most of the sample farmers growing onion were small and marginal farmers.

- In our analysis, sample famers in general felt that they received price lower than expected. Notably, even in Maharashtra where farmers were less dependent on commission agents/traders for price information and credit, had to sell their produce on the prices decided by commission agents and traders and many of them were not happy with price they received. In Washi APMC, few farmers reported the case of secret bidding. This clearly indicates the strong hold of market intermediaries in market functioning.

- Relatively better price in APMC (as compared to village/local market) figures out as one of prominent reasons why sample farmers in Karnataka (99.2 per cent) preferred to sale in APMC markets. This need careful interpretation as most of the sample farmers in the state had no other option/substitute and prices prevailing in APMCs may have been misunderstood as a better price. Besides, it was noted that many farmers in the state (65.6 per cent) had personal relations with commission agents and trades, which ensured the farmers timely advance credit, but also created a space for their exploitation.

- From the field survey the prevailing market imperfections clearly come out. It was noticed that almost 65.6 percent of the sample farmers in Karnataka were victims of interlocked market. About 55.2 per cent sample farmers experienced problems related to weighment and more than one fourth noticed unreasonable grading and anomalies in price fixation. Though these problems were not prominent in Maharashtra, some farmers did observe the problems like barrier to entry, anomalies in price fixation and interlocked market. For instance, evidence of market imperfection, particularly collusion was observed during price formation in Ahmednagar market amongst traders. While bidding on certain lots was taking place, traders started with about Rs 300 per quintal and kept bidding higher prices with minute increments till one purchaser quoted Rs 400 per quintal and another bid at Rs 405 per quintal. This is a standard method to 'fire off' the seller. The commission agent intervenes to the auction and saying that the two bidders should equally share the produce that was being auctioned. Perhaps the commission agent could have waited for a slightly higher bid (i.e above Rs 405 per quintal) and then sold the produce. But bidding was immediately stopped at Rs 405 per quintal and produce was shared between two wholesalers.

- Asymmetric information has been one of the key concerns in the market failures. Farmers in particular have found themselves as the main victim. As observed in our field survey, about 94.6 per cent of the sample farmers in Maharashtra and 86.4 per cent in Karnataka were not aware about marketing channels in APMC and were also not aware of other options to sell their produce. The figures on the extent of awareness about Minimum Support Price (MSP) are close to the figures of NSS Situation Assessment Survey (59$^{th}$ round, 2003), indicating despite realizing the problem much less has been

done on dissemination of market information

- Many farmers felt that the government should purchase or help them in selling or exporting their onion or at least help them in getting a price of Rs.1000 per quintal so that they cover their cost of production and earn a reasonable return on cultivation of onion. NAFED does not purchase directly from farmers.
- If long experience in marketing of the functionaries is considered then our analysis clearly indicates that commission agents and wholesalers in all sample markets are having stronghold on the functioning of these markets. They have been around about two decades in the business.
- From our discussions, it was quite clear that traders hoarded onion in anticipation of higher prices. After making purchases from farmers, they stored the onion instead of immediate sales. Further, some commission agents who reported that they are having license to operate as wholesaler. They were actually the 'A' class commission agents and played a dual role in purchasing as well as facilitating the transactions. Here, it should be noted that the possibility of wholesale traders operating as commission agents certainly gives undue advantage to the traders having huge turnover capacity. It also helps them in strengthening their monopolistic position in the market, and more by restricting others from entering or getting new license. In our discussion, small traders therefore complained that they are not in a position to take any advantage of new APMC act as the license for starting private markets are not easily available and there are numerous restrictions on the location of such markets. And perhaps they, therefore, felt that the scope for promoting competition and creating new additional markets that could function simultaneously with regulated markets seem to be very limited at present .
- Our analysis also highlights that many commission agents and wholesalers have formed good networks with the commission agents and wholesalers operating within and other markets. These groups operate covertly under the usual marketing practices. These share the information on onion prices prevailing in their markets and use to decide the purchase price of onion in their home market. This clearly indicates market intermediaries are well connected and fully aware of the prices prevailing in home and outside markets. In such a situation, the collaboration among commission agents and wholesalers and a few dominant traders acting as commission agents should not be ignored.
- During our the field visits in Hubli and Belgaum APMCs, two types of collusions, namely price fixing and bid rigging came to our notice. The local commission agents and traders were having strong networks with traders in other states (i.e. Goa and Andhra Pradesh). Our discussion with some local commission agents and traders indicated that they purchased onion for big traders of Goa and Andhra Pradesh. The quantity and price of the onion were decided over the phone on a day before the onion market opened.
- In our field visits, we observed that commission agents in the markets were quite interested to keep strong relations with wholesalers by allowing wholesalers to pick up the produce on credit for a month or two. In case of early payment, wholesalers were rewarded with some incentives.
- Most of the wholesalers who responded during the high and low prices reported that they adjusted their transaction pattern considering the size of demand and availability of working capital, indicating big traders with their networking and higher capacity to mobilize working capital may have played larger roles in hoarding of onion.
- Major reasons noticed behind collusive behaviour among the traders and the commission agents are presence of big traders/commission agents within sizably less number of traders and commission agents, their years of experience with strong networks with agents and

officials, presence of strong Traders' Association and traders who are also operating as commission agents.

- Many in Traders' Association believe that infrastructural bottlenecks have often created instability in onion prices across India. The inability to transport the accumulated produce inhibits many temporarily from participating in market auctioning. The withdrawal of many traders from participating in auctions creates less competition and therefore prices start falling.
- Many traders complained that any sudden ban on export of onion not only deprived them from earning higher margin but also created loss of their credibility in the export markets as they failed to deliver their commitments.
- Many traders dealing with exports were quite disappointed with the arbitrary way of fixing Minimum Export Price (MEP). Interestingly, some traders revealed that even though the letter of credit and other documents prepared on the basis of MEP, a few big traders exported onion at prices below MEP to their customers in international markets. These exporters engaged in such practice because they could still get good profit on inflated records. In any case, some traders reiterated that higher MEP helped big exporters to take advantage of lower onion price (as supply in the domestic markets increases) in domestic market and loopholes existing in monitoring of onion trade.
- Traders suggested that the fluctuations in onion prices could be dealt with proper development of post harvest technology in the country. According them, large share of onion stored is lost due to shrinkage and damage. This is significant quantity for smoothening out price fluctuations in onion.
- According APMC officials, one of the major problems often faced by them is frequent strikes called by market functionaries causing the closure of the market. They highlighted that the act of strike often leads to accumulation of stocks and fall in the onion prices, both adversely affecting the farmers.
- Though there are wide variations in the net margin earned by retailers across the markets, retailer from urban centers like Bangalore (Rs.704 per quintal) and Pune (Rs. 620 per quintal) got much higher margins per quintal. Notably, retailers from these centers not only benefited in terms of higher margin but also on the account of large quantity sale.

**Annexure Table 4.1a: Socio-Economic Indicators of Sample Districts of Maharashtra**

| Particulars | | NASHIK | A'NAGAR | PUNE | MUM | MAH |
|---|---|---|---|---|---|---|
| Geographical Area (000 sq km ) 2011 | | 15.63 | 17.02 | 15.62 | 0.38 | 307.58 |
| Total Population (2011) in lakh | | 61.09 | 45.43 | 94.27 | 93.32 | 1123.73 |
| Urban Population (%) | | | | | | 54.8 |
| Population Density (per sq km.) | | 393 | 266 | 603 | 20925 | 365 |
| Rural Literacy rate (%) 2011 | | 80.96 | 80.22 | 87.19 | 90.9 | 82.91 |
| Human Development Index 2000 (rank) | | 0.51 (13) | 0.57(11) | 0.76 (4) | 1.00 (1) | 0.58 |
| % Rural Households under Poverty line (2002-2007) | | 40.58 | 23.84 | 24.9 | - | 35.0 |
| Per capita NDDP (current prices 2010-11) | | 84982 | 71054 | 127176 | 141138 | 87686 |
| Share of GDDP in GSDP (%) (2007-08 at current prices) | | 5.43 | 3.34 | 11.12 | - | - |
| Share of agriculture sector in GDDP/GSDP (2007-08 at current prices) | | 19.59 | 27.88 | 8.72 | - | 9.45 |
| Normal rainfall (in mm) July to Oct 2010 | | 1268.90 | 584.66 | 1171.0 | - | 1218.16 |
| Average size of holdings (2005-06) in ha | | 1.67 | 1.46 | 1.56 | - | 1.66 |
| % of NSA to total geographical area 2001-02 | | 56.52 | 65.59 | 59.93 | - | 56.81 |
| % age of irrigated area to GCA (in 2001-02) | | 45.04 | 32.44 | 27.28 | - | 17.91 |
| % of groundwater to NIA (2001-02) | | 75.18 | 77.79 | 53.92 | - | 65.01 |
| Electricity use in Agri (% to total) 2008-09 | | 25.88 | 30.26 | 10.72 | - | 17.44 |
| Cropping intensity (%) 2007-08 | | 112.9 | 133.9 | 127.7 | - | 129.9 |
| No. of Primary Agril. Coop. Soc. (2008-09) | | 1027 | 1285 | 1322 | | 21285 |
| No. of fair price/ration shops/ lakh population (30.09.2009) | | 42 | 38 | 28 | - | 45 |
| No. of Regulated markets/lakh ha NSA (2005-06) | | 15 | 14 | 11 | - | 271 |
| Railway Route length/100 sq km of area (km) 2007-08 | | 287 | 197.55 | 311 | | 5982.89 |
| Total Road Length/lakh Population (2007-08) | | 399.72 | 318.66 | 193.72 | | 245.32 |
| Area under major crops 2009-10 (% to GCA 2007-08): | Total Cereals | 48.85 | 56.09 | 49.18 | - | 37.41 |
| | Total Pulses | 8.78 | 9.64 | 5.24 | - | 15.17 |
| | Total Foodgrains | 57.63 | 65.73 | 54.42 | - | 52.58 |
| | Total Oilseeds | 9.72 | 6.20 | 4.50 | - | 17.20 |
| | Sugarcane | 2.98 | 5.03 | 7.95 | - | 3.25 |
| | Cotton | 4.88 | 5.54 | 0.00 | - | 15.46 |
| | Fruits and Vegetables* | 8.93 | 3.41 | 6.83 | - | 3.82 |
| Productivity (kg/ha): 2009-10 | Total Cereals | 1009 | 1009 | 956 | - | 1222 |
| | Total Pulses | 497 | 680 | 650 | - | 714 |
| | Total Foodgrains | 931 | 961 | 926 | - | 1075 |
| | Total Oilseeds | 845 | 879 | 979 | - | 746 |
| | Sugarcane | 70 | 80 | 97 | - | 83 |
| | Cotton | 293 | 330 | - | - | 285 |

Notes: * Mumbai City and Mumbai Suburban; Productivity of sugarcane in tons/ha; M.S.-Maharashtra.

Sources: Economic Survey of Maharashtra, 2009-10; District Socio Economic Review of Nashik and Pune 2009; GOM (2001, Agricultural Census), GOM (2007, Livestock Census 2003); GOM (2008, Season and Crop Report of Maharashtra 2001-02).

**Annexure Table 4.1b: Socio-Economic Indicators of Districts of Karnataka**

| Particulars | | BAN | BELG | DHAR | GAD | DAVN | KAR |
|---|---|---|---|---|---|---|---|
| Geographical Area (sq km ) 2011 | | 2190 | 13415 | 4260 | 4656 | 5924 | 191791 |
| Total Population (2011) in lakh | | 95.88 | 47.78 | 18.46 | 10.65 | 19.46 | 611.30 |
| Urban Population (%) | | 90.94 | 25.34 | 56.83 | 35.65 | 32.31 | 38.57 |
| Population Density (per sq km.) | | 4378 | 356 | 434 | 229 | 329 | 319 |
| Literacy rate (%) 2011 | | 88.48 | 73.94 | 80.30 | 75.18 | 76.30 | 75.60 |
| Human Development Index 2011 (rank) | | 1 | 16 | 9 | 18 | 13 | 10 |
| % Rural Poverty (2009-10) | | 0.0 | 19.0 | 16.4 | 36.6 | 13.6 | 15.8 |
| Per capita NDDP (2009-10) | | 140369 | 35917 | 59888 | 32488 | 37810 | 52191 |
| Share of GDDP in GSDP (%) (2009-10) | | 34.7 | 5.6 | 3.4 | 1.1 | 2.4 | 100 |
| Share of agriculture sector in GDDP/GSDP (2007-08atconstant prices) | | 1.1 | 22.6 | 11.0 | 20.5 | 26.1 | 16.3 |
| Normal rainfall (in mm) July to Oct 2010 | | 746 | 1248 | 937 | 822 | 955 | 1544 |
| Average size of holdings (2005-06) in ha | | 1.19 | 1.89 | 2.75 | 2.60 | 1.57 | 1.63 |
| % of NSA to total geographical area 2008-09 | | 25.0 | 59.4 | 69.4 | 77.2 | 65.6 | 53.4 |
| % age of irrigated area to GCA (in 2008-09) | | 21.7 | 51.4 | 14.8 | 15.4 | 48.0 | 31.9 |
| Electricity use in Agri (% to total) 2009-10 | | 0.7 | 85.9 | 12.8 | 42.7 | 61.2 | 37.6 |
| Cropping intensity (%) 2008-09 | | 103.8 | 126.4 | 168.3 | 127.4 | 117.5 | 121. |
| No. of Primary Agril. Coop. Soc. (2010) | | 50 | 737 | 167 | 158 | 192 | 5087 |
| No. of fair price/ration shops/ lakh population (30.09.2010) | | 1857 | 1695 | 515 | 353 | 775 | 20433 |
| No. of Regulated markets/lakh ha GCA (2008-09) | | 16 | 4.7 | 3.2 | 4.8 | 3 | 4 |
| Total Road Length (Sq. Km)/lakh Population (2010) | | 35 | 280 | 288 | 496 | 298 | 360 |
| Area under major crops (% to GCA 2008-09): | Total Cereals | 49.8 | 46.0 | 32.6 | 29.7 | 75.8 | 43.4 |
| | Total Pulses | 7.8 | 9.6 | 14.9 | 21.6 | 2.1 | 16.9 |
| | Total Foodgrains | 57.6 | 55.6 | 47.5 | 51.3 | 77.9 | 60.3 |
| | Total Oilseeds | 2.4 | 17.1 | 18.7 | 29.5 | 8.2 | 17.6 |
| | Sugarcane | 0.0 | 11.3 | 0.6 | 0.0 | 0.6 | 2.3 |
| | Cotton | 0.0 | 2.0 | 14.3 | 9.1 | 3.4 | 5.4 |
| | Onion | 0.1 | 0.7 | 5.4 | 7.2 | 1.5 | 1.1 |
| Area under Onion (in ha) | | 44 | 6830 | 26978 | 33032 | 6734 | 135012 |
| % Contribution – (in parenthesis) | | (0.0) | (5.1) | (20.0) | (24.5) | (5.0) | (100.0) |
| Onion Production (in Tonnes) | | 228 | 28000 | 75559 | 175327 | 57561 | 721338 |
| % Contribution – (in Parenthesis) | | (0.0) | (3.9) | (10.5) | (24.3) | (8.0) | (100.0) |
| Productivity (kg/ha): 2008-09 | Total Cereals | 2656 | 1752 | 1294 | 1253 | 2863 | 1990 |
| | Total Pulses | 763 | 378 | 928 | 244 | 609 | 492 |
| | Total Foodgrains | 2401 | 1514 | 1086 | 829 | 2801 | 1571 |
| | Total Oilseeds | 528 | 680 | 641 | 420 | 720 | 497 |
| | Sugarcane | 0 | 89000 | 65000 | 91000 | 112000 | 91000 |
| | Cotton | 0 | 345 | 297 | 407 | 351 | 361 |
| | Onion | 5455 | 4315 | 2948 | 5587 | 8998 | 5624 |

Source: Census of India 2011; Economic Survey of Karnataka 2011-12, Directorate of Economics and Statistics, GoK

**Annexure Table 4.2: Retail Establishments (Retailer) in Maharashtra and Karnataka**

| Place | Type of Retail establishment | | | | | | Area of retail outlet Sq.ft |
|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | |
| **Maharashtra** | | | | | | | |
| Ahmednagar | 0 | 0 | 10 | 0 | 0 | 0 | 69.8 |
| Sangamner | 1 | 1 | 08 | 0 | 0 | 0 | 58.2 |
| Yeola | 1 | 0 | 09 | 0 | 0 | 0 | 37.5 |
| Lasalgaon/Pimpalgaon | 2 | 0 | 08 | 0 | 0 | 0 | 51.0 |
| Washi (Mumbai) | 0 | 0 | 10 | 0 | 0 | 0 | 70.8 |
| Pune | 0 | 0 | 10 | 0 | 0 | 0 | 27.8 |
| Average | 4 | 1 | 55 | 0 | 0 | 0 | 52.5 |
| **Karnataka** | | | | | | | |
| Bangalore | 3 | 1 | 2 | 0 | 1 | 3 | 1755 |
| Belgaum | 5 | 0 | 2 | 0 | 0 | 3 | 390 |
| Hubli | 5 | 1 | 0 | 0 | 1 | 3 | 826 |
| Gadag | 2 | 0 | 4 | 0 | 0 | 4 | 473.5 |
| Davangere | 2 | 3 | 1 | 0 | 0 | 4 | 148.8 |
| Average | 3.4 | 1 | 1.8 | 0 | 0.4 | 3.4 | 648.46 |

**Notes:** 0=Kirana shop 1=Pushcart (wheeled vehicle that can be pushed by a person), 2=Wet market Retailer 3=Cooperative Modern Retailer (ex: SAFAL) 4= Private Modern Retailer (ex: Food World, Reliance Fresh) 5 = others specify

**Annexure Table 4.3 Consumers in Maharashtra and Karnataka**

| Place | Av. Age (years) | Respondent Sex (%) | | Av. Annual family income (Rs/year) | Av. Family Composition (No.) | | |
|---|---|---|---|---|---|---|---|
| | | Male | Female | | Male | Female | Total |
| **Maharashtra** | | | | | | | |
| Ahmednagar | 44.4 | 100 | 0 | 49200 | 3.4 | 2.0 | 5.4 |
| Sangamner | 35.5 | 90 | 10 | 58300 | 2.7 | 1.7 | 4.4 |
| Yeola | 40.1 | 100 | 0 | 26600 | 2.5 | 2.4 | 4.9 |
| Lasalgaon/Pimpl | 32.6 | 80 | 20 | 57900 | 2.3 | 2.3 | 4.6 |
| Washi (Mumbai) | 30.0 | 80 | 20 | 127000 | 3.4 | 1.4 | 4.8 |
| Pune | 44.9 | 100 | 0 | 92600 | 1.8 | 2.3 | 4.1 |
| Average | 37.9 | 91.7 | 8.3 | 68600 | 2.7 | 2.0 | 4.7 |
| **Karnataka** | | | | | | | |
| Bangalore | 42.3 | 80 | 20 | 112000 | 2.6 | 1.7 | 4.3 |
| Belgaum | 39.1 | 100 | 0 | 67000 | 3.0 | 1.5 | 4.5 |
| Hubli | 40.2 | 90 | 10 | 47000 | 3.1 | 1.6 | 4.7 |
| Gadag | 43.4 | 100 | 0 | 24000 | 2.7 | 2.1 | 4.8 |
| Davangere | 43.9 | 100 | 0 | 28000 | 2.9 | 1.7 | 4.6 |
| Average | 41.8 | 94 | 6 | 55600 | 2.9 | 1.7 | 4.6 |

Annexure Table 4.4a: Major Crops Grown by the Selected Sample Households in Maharashtra

*(Percentage to GCA)*

| Crop | Ahmed-nagar | Sangam-ner | Yeola | Lasalgaon/ Pimpalgaon | Washi (Mumbai) | Pune | Total |
|---|---|---|---|---|---|---|---|
| **Kharif** | | | | | | | |
| Onion | 36.3 | 22.0 | 21.9 | 22.5 | 11.8 | 19.6 | 23.7 |
| Bajari | 12.9 | 28.9 | 10.4 | 10.6 | 27.4 | 28.3 | 17.2 |
| Jowar | 0.3 | 0.0 | 0.0 | 0.0 | 2.6 | 0.0 | 0.3 |
| Mung | 7.3 | 0.0 | 0.5 | 1.5 | 0.0 | 2.6 | 2.0 |
| Cotton | 0.0 | 0.0 | 15.8 | 0.0 | 0.0 | 0.0 | 3.6 |
| Maize | 0.0 | 1.1 | 15.0 | 21.6 | 0.0 | 0.0 | 8.9 |
| Soybean | 1.7 | 11.4 | 3.7 | 7.5 | 0.0 | 0.0 | 5.0 |
| Tur | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 |
| Tomato | 0.7 | 1.5 | 0.0 | 2.6 | 0.0 | 0.0 | 1.0 |
| Maize | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other Veg. | 0.3 | 0.8 | 0.0 | 0.0 | 1.1 | 0.5 | 0.3 |
| Wheat | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |
| Sugarcane | 0.0 | 1.1 | 0.0 | 0.0 | 1.1 | 6.8 | 0.7 |
| Chana/Gram | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Groundnut | 0.0 | 0.0 | 0.5 | 3.3 | 3.0 | 2.6 | 1.3 |
| Grapes | 0.0 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.3 |
| Rice | 0.0 | 0.0 | 0.0 | 0.0 | 4.4 | 0.0 | 0.3 |
| Others | 4.5 | 10.0 | 1.6 | 4.7 | 2.0 | 1.4 | 4.4 |
| ***Kharif Total*** | ***65.2*** | ***78.8*** | ***69.5*** | ***75.6*** | ***53.4*** | ***62.4*** | ***69.5*** |
| **Rabi** | | | | | | | |
| Onion | 15.7 | 10.2 | 12.1 | 8.7 | 26.3 | 22.4 | 14.0 |
| Jowar | 5.6 | 1.5 | 0.8 | 0.0 | 3.0 | 5.2 | 2.0 |
| Wheat | 6.6 | 6.8 | 10.4 | 7.7 | 5.5 | 8.4 | 7.9 |
| Gram | 3.5 | 1.5 | 2.4 | 1.5 | 2.6 | 1.6 | 2.0 |
| Chana/Gram | 3.1 | 1.1 | 1.1 | 4.1 | 0.0 | 0.0 | 2.0 |
| Maize | 0.3 | 0.0 | 1.6 | 0.8 | 0.0 | 0.0 | 0.7 |
| Groundnut | 0.0 | 0.0 | 0.0 | 0.5 | 1.1 | 0.0 | 0.3 |
| Tomato | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.3 |
| ***Rubi Total*** | ***34.8*** | ***21.2*** | ***29.0*** | ***24.4*** | ***38.5*** | ***37.6*** | ***29.2*** |
| **Summer** | | | | | | | |
| Onion | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 | 0.4 |
| Groundnut | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 0.0 | 0.7 |
| Bajara | 0.0 | 0.0 | 0.0 | 0.0 | 3.3 | 0.0 | 0.3 |
| ***Summer Total*** | ***0.0*** | ***0.0*** | ***1.5*** | ***0.0*** | ***8.1*** | ***0.0*** | ***1.3*** |
| **Gross Cropped Area (GCA)** | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| **Cropping Intensity (CP)** | **116.7** | **97.1** | **123.7** | **114.2** | **112.8** | **124.9** | **114.2** |

Annexure Table 4.4b: Major Crops Grown by the Selected Sample Households in Karnataka

*(Percentage to GCA)*

| Crop | Banglore | Belgaum | Hubli | Gadag | Davangere | Total |
|---|---|---|---|---|---|---|
| **Kharif** | | | | | | |
| Onion | 43.40 | 16.49 | 38.46 | 47.00 | 24.29 | 36.72 |
| Tur | 22.18 | 22.18 | 0.00 | 6.50 | 0.00 | 11.20 |
| Sun flower | 22.18 | 0.00 | 0.00 | 0.00 | 0.00 | 6.78 |
| Maize | 0.00 | 17.38 | 4.31 | 0.00 | 19.08 | 6.17 |
| Cotton | 0.00 | 0.00 | 0.00 | 7.50 | 0.00 | 1.75 |
| Sugarcane | 0.00 | 0.00 | 20.85 | 0.00 | 0.00 | 3.39 |
| Paddy | 0.00 | 0.00 | 0.00 | 0.00 | 15.73 | 2.63 |
| ***Kharif Total*** | ***87.76*** | ***56.05*** | ***63.70*** | ***61.00*** | ***59.11*** | ***68.65*** |
| **Rabi** | | | | | | |
| Onion | 0.00 | 16.05 | 15.46 | 0.00 | 0.00 | 4.62 |
| Jowar | 3.82 | 16.49 | 12.58 | 28.75 | 10.49 | 13.85 |
| Wheat | 1.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.58 |
| Tur | 3.63 | 0.00 | 0.00 | 0.00 | 0.00 | 1.11 |
| Chilli | 0.00 | 0.00 | 7.19 | 6.00 | 0.00 | 2.57 |
| Maize | 0.00 | 0.00 | 0.00 | 0.00 | 19.92 | 3.33 |
| Groundnut | 0.00 | 0.00 | 0.00 | 5.50 | 0.00 | 1.29 |
| Sajje | 0.00 | 3.57 | 0.00 | 0.00 | 6.99 | 1.64 |
| ***Rubi Total*** | ***9.37*** | ***36.15*** | ***35.23*** | ***40.25*** | ***37.40*** | ***28.98*** |
| **Summer** | | | | | | |
| Sunflower | 0.00 | 1.34 | 0.00 | 0.00 | 0.00 | 0.18 |
| Groundnut | 2.87 | 0.00 | 0.00 | 0.00 | 3.50 | 1.46 |
| Tur | 0.00 | 6.13 | 0.00 | 0.00 | 0.00 | 0.80 |
| Peas | 0.00 | 0.00 | 1.08 | 0.00 | 0.00 | 0.18 |
| ***Summer Total*** | ***2.87*** | ***7.47*** | ***1.08*** | ***0.00*** | ***3.50*** | ***2.61*** |
| **Gross Cropped Area (GCA)** | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |

Annexure Table 4.5: Time Taken in Getting Payment by Farmers in Maharashtra and Karnataka (%)

| | Within 12 hours | Within 24 hours | Within 7 days | More than 7 days |
|---|---|---|---|---|
| **Maharashtra** | | | | |
| Ahmednagar | 72 | 20 | 0 | 8 |
| Sangamner | 40 | 52 | 8 | 0 |
| Yeola | 64 | 36 | 0 | 0 |
| Lasalgaon/Pimpl | 64 | 36 | 0 | 0 |
| Washi (Mumbai) | 56 | 4 | 0 | 0 |
| Pune | 53.33 | 13.33 | 0 | 33.33 |
| **Average** | **63.08** | **30.00** | **1.54** | **5.38** |
| **Karnataka** | | | | |
| Bangalore | 100 | 0 | 0 | 0 |
| Belgaum | 100 | 0 | 0 | 0 |
| Hubli | 100 | 0 | 0 | 0 |
| Gadag | 100 | 0 | 0 | 0 |
| Davangere | 100 | 0 | 0 | 0 |
| **Average** | **100** | **0** | **0** | **0** |

Annexure Table 4.6: Month-wise Onion Transactions Pattern of Commission Agents in Maharashtra and Karnataka

(Quintal per buyer/Commission Agent)

| Place | Maharashtra | | | | | | | Karnataka | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ahmed-nagar | Sangamner | Yeola | Lasalgaon /Pimpl | Washi (Mumbai) | Pune | Average (We.) | Bangalore | Belgaum | Hubli | Gadag | Davangere | Average (Weighted) |
| Jan | 3758 | 2500 | 16050 | 14256 | 3239 | 4882 | 6348 | 56143 | 25000 | 38000 | 5000 | 14700 | 39340 |
| Feb | 4204 | 2200 | 14950 | 14250 | 3143 | 5245 | 6445 | 51663 | 20000 | 35000 | 3000 | 13500 | 36418 |
| March | 4462 | 2400 | 17500 | 23963 | 3658 | 5027 | 8326 | 36173 | 15000 | 30500 | 2400 | 12700 | 27185 |
| April | 4754 | 3000 | 17633 | 14425 | 3450 | 4682 | 6809 | 107502 | 8000 | 24500 | - | 5400 | 84250 |
| May | 4873 | 1800 | 14228 | 14713 | 3333 | 4827 | 6631 | 111964 | 7000 | 17800 | - | 4600 | 91416 |
| June | 4265 | 2000 | 16870 | 15188 | 3608 | 4764 | 6807 | 113802 | 9200 | 12400 | - | 3800 | 94853 |
| July | 4285 | 2700 | 18321 | 15188 | 3292 | 4945 | 6877 | 105785 | 9700 | 13800 | - | 3450 | 86540 |
| Aug | 4262 | 2400 | 19514 | 16500 | 3204 | 4673 | 7080 | 166356 | 17000 | 12900 | - | 4550 | 140187 |
| Sept | 4208 | 2700 | 17449 | 15038 | 3242 | 4627 | 6679 | 249957 | 47000 | 67300 | 39500 | 23700 | 166891 |
| Oct | 5050 | 2500 | 15305 | 15494 | 3669 | 5182 | 7002 | 327518 | 54000 | 115400 | 60700 | 38700 | 215797 |
| Nov | 5062 | 3200 | 12823 | 15688 | 3625 | 4718 | 6722 | 351208 | 68000 | 130500 | 78000 | 47500 | 227103 |
| Dec | 5046 | 2800 | 14274 | 15188 | 3496 | 5518 | 6893 | 393750 | 75000 | 134800 | 94000 | 50500 | 254290 |
| **Total** | **54229** | **30200** | **194917** | **189891** | **40959** | **59090** | **82619** | **2071821** | **354900** | **632900** | **282600** | **223100** | **1464270** |

Note – Estimates for year 2011

Annexure Table 4.7: Month-wise Average Transaction Price of Onion of Commission Agents in Maharashtra and Karnataka

(Transaction/Purchase Price Rs per Quintal)

| Place | Maharashtra | | | | | | | Karnataka | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ahmednagar | Sangamner | Yeola | Lasalgaon/ Pimpalgaon | Washi (Mumbai) | Pune | Average (Weighted) | Bangalore | Belgaum | Hubli | Gadag | Davangere | Average (Weighted) |
| Jan | 3662 | 2200 | 2549 | 2121 | 2042 | 4300 | 3029 | 2700 | 2005 | 2200 | 1400 | 2359 | 2220 |
| Feb | 1508 | 1500 | 1344 | 1054 | 1023 | 1173 | 1297 | 1100 | 1004 | 1300 | 780 | 1082 | 1080 |
| March | 767 | 1000 | 644 | 536 | 844 | 589 | 763 | 650 | 650 | 800 | 575 | 657 | 674 |
| April | 636 | 700 | 500 | 482 | 936 | 558 | 709 | 560 | 560 | 582 | -- | 610 | 566 |
| May | 675 | 600 | 554 | 589 | 1063 | 564 | 751 | 600 | 400 | 601 | - | 600 | 564 |
| June | 791 | 800 | 494 | 525 | 1076 | 598 | 754 | 800 | 700 | 776 | - | 768 | 763 |
| July | 804 | 1000 | 538 | 575 | 1068 | 654 | 790 | 900 | 800 | 937 | - | 940 | 898 |
| Aug | 1040 | 600 | 559 | 686 | 1043 | 744 | 881 | 1000 | 900 | 1170 | - | 1019 | 1031 |
| Sept | 1141 | 1000 | 610 | 611 | 1042 | 786 | 910 | 1000 | 1100 | 1096 | 600 | 984 | 992 |
| Oct | 1073 | 900 | 875 | 869 | 1073 | 828 | 980 | 960 | 900 | 942 | 800 | 817 | 889 |
| Nov | 1585 | 700 | 778 | 825 | 1398 | 1602 | 1352 | 1000 | 1000 | 782 | 750 | 807 | 882 |
| Dec | 2362 | 800 | 699 | 1154 | 2060 | 2334 | 1917 | 700 | 684 | 627 | 625 | 627 | 654 |
| **All** | **1314** | **978** | **831** | **816** | **1221** | **1242** | **1159** | **919** | **948** | **925** | **709** | **894** | **1083** |

Note – Estimates for year 2011

Annexure Table 4.8: Month-wise Onion Transaction Pattern of Wholesaler in Maharashtra and Karnataka

{Purchase Pattern (Quintal/Wholesaler)}

| Place | Maharashtra | | | | | | | Karnataka | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ahmed-nagar | Sangamner | Yeola | Lasalgaon/ Pimpalgaon | Washi (Mumbai) | Pune | Average (Weighted) | Bangalore | Belgaum | Hubli | Gadag | Davangere | Average |
| Jan | 2833 | 4148 | 21750 | 14593 | 1038 | 4100 | 10515 | 56143 | 25000 | 38000 | 5000 | 14700 | 39340 |
| Feb | 2650 | 3863 | 23333 | 15782 | 1163 | 4640 | 11220 | 51663 | 20000 | 35000 | 3000 | 13500 | 36418 |
| March | 2783 | 4230 | 26167 | 15286 | 1313 | 5220 | 11746 | 36173 | 15000 | 30500 | 2400 | 12700 | 27185 |
| April | 3433 | 3920 | 26333 | 15255 | 1675 | 4660 | 11705 | 107502 | 8000 | 24500 | - | 5400 | 84250 |
| May | 3583 | 4075 | 27000 | 15611 | 1925 | 4300 | 11948 | 111964 | 7000 | 17800 | - | 4600 | 91416 |
| June | 3750 | 3267 | 17550 | 16074 | 2225 | 3620 | 10167 | 113802 | 9200 | 12400 | - | 3800 | 94853 |
| July | 3933 | 3650 | 23500 | 16523 | 2550 | 3940 | 11553 | 105785 | 9700 | 13800 | - | 3450 | 86540 |
| Aug | 3583 | 3413 | 24333 | 15695 | 2450 | 4200 | 11387 | 166356 | 17000 | 12900 | - | 4550 | 140187 |
| Sept | 3250 | 3120 | 21833 | 16207 | 2075 | 3940 | 10957 | 249957 | 47000 | 67300 | 39500 | 23700 | 166891 |
| Oct | 2983 | 3017 | 20000 | 15380 | 1725 | 4980 | 10442 | 327518 | 54000 | 115400 | 60700 | 38700 | 215797 |
| Nov | 2867 | 3127 | 20167 | 17295 | 1275 | 4460 | 11014 | 351208 | 68000 | 130500 | 78000 | 47500 | 227103 |
| Dec | 2667 | 3377 | 19667 | 15652 | 1213 | 4940 | 10472 | 393750 | 75000 | 134800 | 94000 | 50500 | 254290 |
| **Total** | **38317** | **43207** | **271633** | **189354** | **20625** | **53000** | **133125** | **2071821** | **354900** | **632900** | **282600** | **223100** | **1464270** |

Note – Estimates for year 2011

Annexure Table 4.9: Month-wise Average Transaction Price of Onion of Wholesaler in Maharashtra and Karnataka

{Transaction Price (Rs. per Quintal per Wholesaler)}

| Place | Maharashtra | | | | | | | Karnataka | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ahmed-nagar | Sangamner | Yeola | Lasalgaon/ Pimpalgaon | Washi (Mumbai) | Pune | Average (Weighted) | Bangalore | Belgaum | Hubli | Gadag | Davangere | Average |
| Jan | 3750 | 3033 | 2417 | 2641 | 3350 | 3280 | 2912 | 2700 | 2005 | 2200 | 1400 | 2359 | 2220 |
| Feb | 1567 | 2750 | 3675 | 1477 | 1150 | 1360 | 2079 | 1100 | 1004 | 1300 | 780 | 1082 | 1080 |
| March | 650 | 1383 | 763 | 724 | 550 | 790 | 844 | 650 | 650 | 800 | 575 | 657 | 674 |
| April | 550 | 1150 | 538 | 526 | 650 | 550 | 655 | 560 | 560 | 582 | -- | 610 | 566 |
| May | 675 | 917 | 561 | 569 | 653 | 560 | 644 | 600 | 400 | 601 | - | 600 | 564 |
| June | 838 | 1000 | 597 | 590 | 575 | 460 | 668 | 800 | 700 | 776 | - | 768 | 763 |
| July | 992 | 1082 | 638 | 576 | 750 | 480 | 713 | 900 | 800 | 937 | - | 940 | 898 |
| Aug | 1233 | 983 | 611 | 637 | 850 | 510 | 743 | 1000 | 900 | 1170 | - | 1019 | 1031 |
| Sept | 1567 | 904 | 629 | 648 | 1125 | 603 | 797 | 1000 | 1100 | 1096 | 600 | 984 | 992 |
| Oct | 1650 | 1300 | 893 | 840 | 1225 | 610 | 995 | 960 | 900 | 942 | 800 | 817 | 889 |
| Nov | 2067 | 1538 | 811 | 761 | 1950 | 1260 | 1178 | 1000 | 1000 | 782 | 750 | 807 | 882 |
| Dec | 2533 | 1617 | 726 | 898 | 3250 | 2120 | 1474 | 700 | 684 | 627 | 625 | 627 | 654 |
| **Avg.** | **1437** | **1502** | **1068** | **895** | **1165** | **1058** | **1129** | **919** | **948** | **925** | **709** | **894** | **1083** |

Note – Estimates for year 2011

Annexure Table 4.10: Monthly Wastages of Onion at Wholesaler level in Maharashtra and Karnataka

{% to Total Transaction Quantity}

| Place | Maharashtra | | | | | | | Karnataka | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ahmed-nagar | Sangamner | Yeola | Lasalgaon/ Pimpalgaon | Washi (Mumbai) | Pune | Average | Bangalore | Belgaum | Hubli | Gadag | Davangere | Average |
| Jan | 2 | 2.7 | 5.3 | 6.9 | 0 | 1.3 | 5.7 | 3.2 | 3 | 2.3 | 2.4 | 3.4 | 2.9 |
| Feb | 2 | 2.9 | 5 | 6.7 | 0 | 1.2 | 5.5 | 3 | 2.8 | 2.4 | 2.4 | 3.3 | 2.8 |
| March | 2 | 2.8 | 5 | 7.3 | 0 | 1.1 | 5.7 | 3.1 | 2.8 | 2.3 | 2.3 | 3.4 | 2.8 |
| April | 2.1 | 3.1 | 5.1 | 6.5 | 0 | 1.1 | 5.3 | 3.3 | 2.9 | 2.2 | 2.2 | 3.5 | 3.1 |
| May | 2.1 | 3.2 | 5.1 | 6.3 | 0 | 1.2 | 5.3 | 3.3 | 3 | 2.3 | 2.2 | 3.6 | 3.1 |
| June | 2.1 | 3.6 | 5 | 6.8 | 0 | 1.2 | 5.7 | 3.4 | 2.9 | 2.3 | 2.3 | 3.6 | 3.1 |
| July | 2.1 | 3.7 | 5 | 6.3 | 0 | 1.3 | 5.3 | 3.4 | 2.9 | 2.3 | 2.3 | 3.6 | 3.1 |
| Aug | 2.1 | 3.7 | 4.8 | 5.9 | 0 | 1.5 | 5.1 | 3.3 | 3 | 2.3 | 2.2 | 3.6 | 3.1 |
| Sept | 2.1 | 3.8 | 4.9 | 6.5 | 0 | 1.2 | 5.5 | 3.3 | 2.9 | 2.5 | 2.3 | 3.7 | 3.0 |
| Oct | 2.1 | 3.3 | 5 | 5.9 | 0 | 1 | 5.1 | 3.4 | 3.2 | 2.4 | 2.3 | 3.4 | 3.0 |
| Nov | 2.1 | 3 | 4.8 | 6.7 | 0 | 1.2 | 5.5 | 3 | 3.2 | 2 | 2.2 | 3.3 | 2.8 |
| Dec | 2.2 | 2.9 | 4.8 | 5.6 | 0 | 1.1 | 4.9 | 3 | 3 | 2 | 2.1 | 3.3 | 2.8 |
| **Total** | 1.4 | 3.2 | 5 | 6.4 | 0 | 1.2 | 5.2 | 3.3 | 3 | 2.3 | 2.3 | 3.5 | 3.0 |

Note – Estimates for year 2011

Annexure Table 4.11: Average Monthly Purchase Pattern of the Retailer in Maharashtra and Karnataka

{Purchase in Quintals per Retailer}

| Place | Maharashtra | | | | | | | Karnataka | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ahmed-nagar | Sangamner | Yeola | Lasalgaon/ Pimpalgaon | Washi (Mumbai) | Pune | Average | Bangalore | Belgaum | Hubli | Gadag | Davangere | Average |
| Jan | 6.5 | 9 | 10 | 5.3 | 27.3 | 49 | 17.8 | 6.7 | 4.25 | 5.3 | 22.6 | 8.7 | 9.51 |
| Feb | 7.8 | 9.2 | 9.3 | 4.8 | 29 | 52.1 | 18.7 | 6.7 | 4 | 5.2 | 2.26 | 8.2 | 9.34 |
| March | 9.3 | 9.6 | 10.4 | 6.4 | 25.9 | 52.2 | 18.9 | 5.2 | 3.1 | 4.2 | 16 | 6.35 | 6.98 |
| April | 8.4 | 8.6 | 10 | 6.1 | 26.6 | 52 | 18.6 | 5.1 | 3.05 | 4.2 | 16 | 5.65 | 6.81 |
| May | 9 | 8.8 | 9.6 | 5.2 | 28.1 | 51.2 | 18.7 | 51 | 2.8 | 42 | 15.7 | 5.55 | 6.68 |
| June | 7.1 | 8.9 | 8.3 | 5.3 | 27.4 | 48.4 | 17.6 | 5.1 | 2.95 | 46 | 16 | 5.15 | 6.77 |
| July | 7.3 | 8.7 | 8.8 | 5.4 | 26.3 | 49.3 | 17.6 | 5.2 | 2.7 | 4.1 | 15.8 | 5.5 | 6.66 |
| Aug | 6.6 | 8.8 | 9.6 | 6.1 | 27.8 | 52.4 | 18.5 | 59 | 2.85 | 4.8 | 17.7 | 5.1 | 7.28 |
| Sept | 8.4 | 8.6 | 9 | 6 | 28.6 | 49.2 | 18.3 | 6.7 | 3.3 | 5 | 17.8 | 6.1 | 7.78 |
| Oct | 9 | 9.5 | 9.2 | 5.8 | 28.4 | 57.2 | 19.8 | 8.6 | 3.9 | 6.4 | 23.6 | 7.2 | 9.94 |
| Nov | 8.8 | 8.6 | 8.3 | 5.4 | 28.9 | 56.5 | 19.4 | 67 | 3.25 | 5.5 | 16.6 | 5.2 | 7.46 |
| Dec | 9.1 | 9.1 | 8.9 | 5.4 | 26.8 | 56.4 | 19.3 | 54 | 2.55 | 43 | 16.1 | 4.2 | 6.52 |
| **Total** | **97.3** | **107.4** | **111.4** | **67.2** | **331.1** | **625.9** | **223.2** | **280.3** | **38.7** | **175.7** | **196.16** | **72.9** | **91.73** |

Note – Estimates for year 2011

**Annexure Table 4.12: Month-wise Wastage of Onion at Retailer level in Maharashtra and Karnataka**

**{% to Total Purchase Quantity}**

| | Maharashtra | | | | | | | Karnataka | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ahmed-nagar | Sangamner | Yeola | Lasalgaon/ Pimpalgaon | Washi (Mumbai) | Pune | Average | Bangalore | Belgaum | Hubli | Gadag | Davangere | Average |
| Jan | 4.1 | 3.1 | 2.9 | 6.2 | 6.5 | 2.8 | 4 | 0.35 | 0.65 | 0.75 | 3.22 | 1.52 | 1.3 |
| Feb | 4.2 | 3.4 | 3.6 | 9.5 | 6.6 | 2.7 | 4.2 | 0.39 | 0.61 | 0.74 | 3.22 | 1.43 | 1.28 |
| March | 4.5 | 3.2 | 3 | 6.5 | 6.3 | 2.7 | 3.9 | 0.31 | 0.47 | 0.6 | 2.29 | 1.11 | 0.95 |
| April | 4.2 | 3.8 | 3.3 | 6.6 | 6.5 | 2.7 | 4.1 | 0.32 | 0.46 | 0.6 | 2.29 | 0.98 | 0.93 |
| May | 4.6 | 3.1 | 3.7 | 5.9 | 6.5 | 2.5 | 4 | 0.32 | 0.43 | 0.6 | 2.25 | 0.97 | 0.91 |
| June | 4.5 | 3.4 | 3.7 | 7.8 | 6.2 | 2.7 | 4.1 | 0.31 | 0.45 | 0.65 | 2.29 | 0.9 | 0.92 |
| July | 4.4 | 4 | 3.7 | 6.7 | 6.3 | 2.9 | 4.2 | 0.32 | 0.41 | 0.58 | 2.25 | 0.96 | 0.9 |
| Aug | 4.8 | 5 | 3.6 | 5 | 6.5 | 2.7 | 4.2 | 0.35 | 0.43 | 0.68 | 2.53 | 0.89 | 0.98 |
| Sept | 4.5 | 4.7 | 3.4 | 5.2 | 6.4 | 2.6 | 4.1 | 0.37 | 0.5 | 0.71 | 2.54 | 1.06 | 1.03 |
| Oct | 4.3 | 3.6 | 3.6 | 6.7 | 6.1 | 2.1 | 3.7 | 0.45 | 0.6 | 0.91 | 3.37 | 1.26 | 1.31 |
| Nov | 4 | 4.2 | 3.2 | 6.4 | 6.2 | 2.1 | 3.7 | 0.38 | 0.5 | 0.78 | 2.37 | 0.91 | 0.99 |
| Dec | 4.2 | 4.5 | 3.2 | 7.3 | 6.2 | 2.3 | 3.8 | 0.29 | 0.36 | 0.61 | 2.3 | 0.73 | 0.86 |
| **Total** | 4.3 | 3.8 | 3.4 | 6.6 | 6.4 | 2.6 | 4 | 4.19 | 4.44 | 8.28 | 30.97 | 12.7.6 | 12.41 |

Note – Estimates for year 2011

Annexure Table 4.13: Any Difficulties Faced by Retailers in Maharashtra and Karnataka (%)

| Place | Purchasing Onion | | | | | | Storage of Onion | | | | Sale of Onion | | | | Price Differences between APMC and Retail | | | | | No Threat from ORSM* | Any Strategy(ies )to Improve Margins | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | A | B | C | D | A | B | C | D | A | B | C | D | E | - | A | B | C | D | E |
| **Maharashtra** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ahmednagar | 70 | 10 | 10 | 10 | 0 | 0 | 90 | 0 | 10 | 0 | 60 | 40 | 0 | 0 | 30 | 0 | 60 | 10 | 0 | 100 | 100 | 0 | 0 | 0 | 0 |
| Sangamner | 90 | 0 | 0 | 0 | 10 | 0 | 60 | 10 | 30 | 0 | 60 | 40 | 0 | 0 | 50 | 0 | 40 | 0 | 10 | 100 | 90 | 10 | 0 | 0 | 0 |
| Yeola | 80 | 20 | 0 | 0 | 0 | 0 | 80 | 0 | 20 | 0 | 70 | 10 | 20 | 0 | 40 | 20 | 20 | 20 | 0 | 100 | 90 | 0 | 10 | 0 | 0 |
| Lasalgaon/Pimpl | 100 | 0 | 0 | 0 | 0 | 0 | 70 | 20 | 10 | 0 | 10 | 80 | 0 | 10 | 50 | 10 | 20 | 20 | 0 | 90 | 50 | 40 | 0 | 10 | 0 |
| Washi (Mumbai) | 90 | 0 | 0 | 0 | 0 | 10 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 40 | 0 | 40 | 0 | 20 | 100 | 50 | 30 | 0 | 10 | 10 |
| Pune | 90 | 0 | 0 | 0 | 10 | 0 | 80 | 0 | 0 | 20 | 70 | 30 | 0 | 0 | 0 | 50 | 40 | 0 | 10 | 60 | 50 | 50 | 0 | 0 | 0 |
| **Total** | **87** | **5** | **2** | **2** | **3** | **2** | **80** | **5** | **12** | **3** | **62** | **33** | **3** | **2** | **35** | **13** | **37** | **8** | **7** | **92** | **72** | **22** | **2** | **3** | **2** |
| **Karnataka** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bangalore | 100 | 0 | 0 | 0 | 0 | 0 | 90 | 10 | 0 | 0 | 75 | 5 | 0 | 20 | 10 | 30 | 35 | 25 | 0 | 75 | 100 | 0 | 0 | 0 | 0 |
| Belgaum | 90 | 10 | 0 | 0 | 0 | 0 | 80 | 10 | 10 | 0 | 70 | 6 | 0 | 24 | 5 | 25 | 30 | 35 | 5 | 83 | 90 | 0 | 0 | 0 | 10 |
| Hubli | 90 | 10 | 0 | 0 | 0 | 0 | 90 | 0 | 10 | 0 | 67 | 10 | 0 | 23 | 12 | 20 | 38 | 30 | 0 | 100 | 100 | 0 | 0 | 0 | 0 |
| Gadag | 85 | 15 | 0 | 0 | 0 | 0 | 85 | 5 | 10 | 0 | 70 | 5 | 0 | 25 | 5 | 15 | 45 | 35 | 0 | 100 | 100 | 0 | 0 | 0 | 0 |
| Davanagere | 90 | 10 | 0 | 0 | 0 | 0 | 90 | 0 | 10 | 0 | 80 | 10 | 0 | 10 | 0 | 15 | 35 | 50 | 0 | 100 | 100 | 0 | 0 | 0 | 0 |
| **Total** | **91** | **9** | **0** | **0** | **0** | **0** | **87** | **5** | **8** | **0** | **72** | **8** | **0** | **20** | **6** | **21** | **37** | **35** | **2** | **92** | **98** | **0** | **0** | **0** | **2** |

**Note** :* *ORSM indicates Organized Retailers/Super Markets*

– **Purchasing Onion**

**{A =** *No Problem*; **B =** *Capital Problem*; **C =** *Long distance, transport charges increased*; **D =** *Wholesalers' charges more;* **E** *= Lower quality goods;* **F** *= Strike* **}**

– **Storage of Onion**

**{A =** *No Problem*; **B =** *Climate impact/Onion destroyed;* **C =** *No storage facility*; **D =** *Stealing of good* **}**

– **Sale of Onion**

**{A =** *No Problem*; **B =** *Less customers/low sale;* **C =** *Fall in demand*; **D =** *Low price* **}**

– **Price Differences between APMC and Retail**

**{A =** *Don't Know*; **B =** *High Expenditure*; **C =** *Wastage*; **D =** *High Wholesaler Margin;* **E** *= Profit from sale not high* **}**

– **Strategies to Improve Margin**

**{A =** *No Strategy;* **B =** *Getting good quality produce;* **C =** *Understanding demand and supply*; **D =** *Sale on reasonable rate;* **E** *= Need of Union* **}**

Annexure Table 4.14a: Choice of Place for Purchase of Onion by Consumer in Maharashtra

(% to responses)

| Particulars | Kirana shop | Pushcart | Wet market Retailer | Cooperative Modern Retailer * | Private Modern Retailer** | others |
|---|---|---|---|---|---|---|
| Ist Choice of the Retail Outlet | 0 | 3.33 | 78.3 | 0 | 16.7 | 1.67 |
| Reason | | | | | | |
| i) Nearby/On the way | 0 | 0 | 88.1 | 0 | 28.6 | 3.57 |
| ii) Cheap | 0 | 0 | 100 | 0 | 25.6 | 6.5 |
| iii)Good Quality | 0 | 0 | 81.8 | 0 | 18.2 | 0 |
| iv) Service at door | 0 | 20 | 0 | 0 | 0 | 0 |
| v) all vegetables | 0 | 0 | 100 | 0 | 27.8 | 0 |
| vi) No Option/Source | 0 | 0 | 100 | 0 | 0 | 0 |
| IInd choice of the retail outlet | 0 | 29.4 | 70.6 | 0 | 0 | 0 |
| Reason | | | | | | |
| i) Urgency | 0 | 100 | 23.8 | 0 | 0 | 0 |
| ii) Service to door | 0 | 76.5 | 0 | 0 | 0 | 0 |
| iii)Good Quality | 0 | 0 | 100 | 0 | 0 | 0 |
| iv) Nearer | 0 | 0 | 100 | 0 | 0 | 0 |
| v) on the way | 0 | 0 | 100 | 0 | 0 | 0 |
| vi) Cheaper | 0 | 0 | 100 | 0 | 0 | 0 |

Note: *ex: SAFAL; ** ex:, Reliance Fresh, Mafco

Annexure Table 4.14b: Choice of Place for Purchase of Onion by Consumers in Karnataka

(% to responses)

| Particulars | Kirana shop | Push cart | Wet market Retailer | Cooperative Modern Retailer* | Private Modern Retailer** | others |
|---|---|---|---|---|---|---|
| Ist Choice of the Retail Outlet | 14 | 0 | 82 | 0 | 4 | 0 |
| Reason | | | | | | |
| i) Nearby/On the way | 11 | 0 | 100 | 0 | 0 | 0 |
| ii) Cheap | 23 | 0 | 100 | 0 | 0 | 0 |
| iii)Good Quality | 20 | 0 | 100 | 0 | 0 | 0 |
| iv) Service at door | 0 | 0 | 0 | 0 | 24 | 0 |
| v) all vegetables | 30 | 0 | 95 | 0 | 0 | 0 |
| vi) No Option/Source | 0 | 0 | 97 | 0 | 0 | 0 |
| IInd choice of the retail outlet | 62 | 18 | 14 | 0 | 0 | 0 |
| Reason | | | | | | |
| i) Nearby/On the way | 100 | 18 | 5 | 0 | 0 | 0 |
| ii) Cheap | 100 | 30 | 30 | 0 | 0 | 0 |
| iii)Good Quality | 100 | 30 | 24 | 0 | 0 | 0 |
| iv) Service at door | 0 | 0 | 0 | 0 | 0 | 0 |
| v) all vegetables | 22 | 30 | 25 | 0 | 0 | 0 |
| vi) No Option/Source | 50 | 0 | 0 | 0 | 0 | 0 |

Note: *ex: SAFAL; ** ex:, Reliance Fresh, Mafco

Annexure Table 4.15: Place of Onion Purchase by Consumers in Maharashtra & Karnataka

(% to responses/sample)

| Markets | Kirana | Pushcart | Wet market Retailer* | Private Modern Retailer (MAFCO) | Farmer | Other |
|---|---|---|---|---|---|---|
| **Maharashtra** | | | | | | |
| Ahmednagar | 0 | 0 | 100 | 0 | 0 | 0 |
| Sangamner | 0 | 0 | 100 | 0 | 0 | 0 |
| Yeola | 0 | 10 | 80 | 0 | 10 | 0 |
| Lasalgaon/Pimpalgaon | 0 | 0 | 100 | 0 | 0 | 0 |
| Washi (Mumbai) | 0 | 0 | 0 | 100 | 0 | 0 |
| Pune | 0 | 10 | 90 | 0 | 0 | 0 |
| **Average** | **0** | **3.7** | **87.0** | **7.4** | **1.9** | **0** |
| **Karnataka** | | | | | | |
| Bangalore | 10 | 0 | 80 | 0 | 10 | 0 |
| Belgaum | 30 | 0 | 70 | 0 | 0 | 0 |
| Hubli | 20 | 0 | 60 | 0 | 20 | 0 |
| Gadag | 0 | 0 | 80 | 0 | 20 | 0 |
| Davanagere | 0 | 0 | 100 | 0 | 0 | 0 |
| **Average** | **12** | **0** | **78** | **0** | **10** | **0** |

Note: *Wetmarket is defined as a market in which at least there are 10 fruits/vegetables/oil seeds traders.

Annexure Table 4.16: Frequency of Onion Purchase by Consumers in Maharashtra and Karnataka

(% to responses/sample)

| Place | Once in a week | Once in two weeks | Once in three weeks | Once in four weeks | Once in five weeks |
|---|---|---|---|---|---|
| **Maharashtra** | | | | | |
| Ahmednagar | 0 | 100 | 0 | 0 | 0 |
| Sangamner | 0 | 100 | 0 | 0 | 0 |
| Yeola | 0 | 100 | 0 | 0 | 0 |
| Lasalgaon/Pimpalgaon | 0 | 60 | 30 | 10 | 0 |
| Washi (Mumbai) | 0 | 100 | 0 | 0 | 0 |
| Pune | 0 | 90 | 10 | 0 | 0 |
| Average | 0 | 91.7 | 6.7 | 1.7 | 0 |
| **Karnataka** | | | | | |
| Bangalore | 70 | 10 | 20 | 0 | 0 |
| Belgaum | 60 | 20 | 0 | 0 | 20 |
| Hubli | 60 | 20 | 0 | 10 | 10 |
| Gadag | 90 | 0 | 0 | 10 | 0 |
| Davanagere | 100 | 0 | 0 | 0 | 0 |
| Average | 76 | 10 | 4 | 4 | 6 |

Annexure Table 4.17: Last 5 Purchases and Price Paid by Consumers in Maharashtra and Karnataka

| Place of purchase | Onion Purchased and Price Paid in last 5 Purchases by Consumer | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | 2 | | 3 | | 4 | | 5 | | Average | |
| | QP | AP | QP | AP | QP | AP | QP | AP | QP | AP | QP | AP |
| **Maharashtra** | | | | | | | | | | | | |
| Ahmednagar | 1.7 | 13.9 | 1.7 | 13.3 | 1.7 | 14.8 | 1.7 | 12.5 | 1.7 | 12.4 | 1.7 | 13.4 |
| Sangamner | 2.3 | 9.1 | 2.3 | 9.2 | 2.2 | 9.1 | 2.1 | 9.6 | 2.2 | 9.7 | 2.2 | 9.3 |
| Yeola | 2.1 | 6.8 | 2.2 | 6.5 | 2.1 | 7.5 | 2.0 | 8.1 | 2.1 | 7.8 | 2.1 | 7.3 |
| Lasalgaon/Pimpl | 1.4 | 7.8 | 1.4 | 7.3 | 1.4 | 7.3 | 1.5 | 7.6 | 1.4 | 8.4 | 1.4 | 7.7 |
| Washi (Mumbai) | 2.8 | 9.9 | 3.0 | 10.3 | 2.9 | 11.0 | 2.8 | 10.1 | 3.0 | 11.3 | 2.9 | 10.5 |
| Pune | 2.4 | 9.9 | 2.4 | 9.0 | 2.5 | 8.9 | 2.4 | 8.8 | 2.2 | 8.8 | 2.4 | 9.1 |
| Average | 2.1 | 9.6 | 2.2 | 9.3 | 2.1 | 9.8 | 2.1 | 9.4 | 2.1 | 9.7 | 2.1 | 9.6 |
| **Karnataka** | | | | | | | | | | | | |
| Bangalore | 2.2 | 11.5 | 1.8 | 11.3 | 2.1 | 10.8 | 2.3 | 11.3 | 10.8 | 12.4 | 2.1 | 11.46 |
| Belgaum | 3.1 | 9.1 | 2.9 | 9.2 | 2.9 | 10.2 | 2.6 | 10.6 | 3 | 11.1 | 2.9 | 10.4 |
| Hubli | 9.3 | 8.7 | 9.4 | 8.75 | 8.8 | 8.75 | 8.3 | 10 | 9.1 | 8.5 | 8.9 | 8.94 |
| Gadag | 4.0 | 9.2 | 4.3 | 9.2 | 4.0 | 9.9 | 4.2 | 9.4 | 4 | 8.6 | 4.1 | 7.38 |
| Davanagere | 4.6 | 4.6 | 4.6 | 5.3 | 4.5 | 5.8 | 4.2 | 5.5 | 4.15 | 5.9 | 4.4 | 5.42 |
| Average | 4.6 | 8.6 | 4.6 | 8.7 | 4.4 | 9.0 | 4.3 | 9.3 | 6.2 | 9.3 | 4.5 | 8.72 |

Notes: QP- Av. Quantity purchased (Kg/purchase); AP- Av. Price (Rs/Kg)

Annexure Table 4.18: Quality-Preferences of Consumers in Maharashtra and Karnataka

% to responses

| Place of purchase | Colour | | | Size | | | Price | | Fresh-ness |
|---|---|---|---|---|---|---|---|---|---|
| | Red | Pink | White | Big | Medium | Small | Low | high | |
| **Maharashtra** | | | | | | | | | |
| Ahmednagar | 100 | 0 | 0 | 0 | 90 | 10 | 77.8 | 22.2 | 70 |
| Sangamner | 66.7 | 33.3 | 0 | 12.5 | 87.5 | 0 | 57.1 | 42.9 | 60 |
| Yeola | 100 | 0 | 0 | 44.4 | 55.6 | 0 | 66.7 | 33.3 | 60 |
| Lasalgaon/Pimpl | 100 | 0 | 0 | 22.2 | 77.8 | 0 | 100 | 0 | 100 |
| Washi (Mumbai) | 100 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 70 |
| Pune | 50 | 50 | 0 | 30 | 70 | 0 | 100 | 0 | 50 |
| Average | 87.8 | 12.2 | 0 | 18.2 | 80 | 1.8 | 83.3 | 16.7 | 100 |
| **Karnataka** | | | | | | | | | |
| Bangalore | 60 | 40 | 0 | 30 | 70 | 0 | 0 | 100 | 100 |
| Belgaum | 90 | 10 | 0 | 20 | 80 | 0 | 20 | 80 | 100 |
| Hubli | 80 | 20 | 0 | 60 | 40 | 0 | 30 | 70 | 100 |
| Gadag | 60 | 40 | 0 | 10 | 80 | 10 | 50 | 50 | 100 |
| Davanagere | 70 | 30 | 0 | 20 | 70 | 10 | 20 | 80 | 100 |
| Average | 72 | 28 | 0 | 28 | 68 | 4 | 24 | 76 | 100 |

# CHAPTER V
# CONCLUSIONS AND POLICY IMPLICATIONS

## 5.1 Backdrop

Onion is one of the most significant diets as well as commonly used ingredient in Indian recipe. Thus the changes in prices have a huge impact on the food security, and farmer and consumer welfare. An increase in price of onion affects the consumer by way of increase in food consumption budget, whereas a decrease in onion prices below the cost of cultivation affects the producer. High price variability in case of primary products affects both producers as well as consumers through a spillover effect to the other sectors, thereby leading to high inflation in the economy. Thus it is major concern for the politicians, policy makers and experts. There is enough evidence to show that prices of the agricultural commodities are more volatile than those of the non-farm commodities due to low price and income elasticity and inherently unstable agriculture production. Additionally, market inefficiencies, weak supply chains and monopolies in the market aggravate the problem. The spurt in food inflation in the recent months has brought to forefront some critical issues of price volatility in agricultural commodities, agricultural market structures and market efficiency. Some of the major recommendations of the Inter-Ministerial Group(IMG) on Inflation(Ministry of Finance, GOI, 2011): First, *A durable solution to inflation in an economy with rising income levels lies in improving agricultural productivity, strengthening food supply chains"*; Second, to amend enforce a modified Agricultural Produce Marketing Act and also to initiate other steps to improve agriculture market structure.

With this backdrop, the study examined the competitiveness in the onion markets in India considering area, production and productivity trends, analysis of market structure, market margins, cost of production, institutional support, price volatility, etc. In order to fulfill the objectives, both primary and secondary data was considered. Both primary (actors involved in the supply chain) and secondary information (Government reports and websites, journals, books, etc) was collected for five major markets in Karnataka and six major markets in Maharashtra.

## 5.2 Significant Conclusions and Observations:

- The study found that onion trade is unilaterally dictated by the traders and not farmers for the reasons: (i) Average farm size of onion growers is quite low. Unfavorable weather conditions and price risk for these small farmers resulted for a minimal role in price formation; (ii) Traders buy small lots from the market yards and pool the produce for sorting or grading at their packing houses and market different grades to different markets all over India. Lack of trading expertise, market knowledge and risk bearing capacity has prevented most of the farmers to make any dent in onion trading. Therefore, most of the trading is in private hands; (iii) Farmers generally take reference of the local markets' rates, while traders compare rates of all markets, including major distant and export market and then decide where to send their produce of a particular grade. This brings greater profits to them; (iv) Active period in some cases is only a fortnight or a month. Because of this reason, exclusive onion growers' associations (farmers' associations, co-operatives) have not been successful as short period of business cannot sustain their year-long expenses; (v) Traders buy the whole stored lots and provide sorted or graded produce to retailers or buyers as per their requirement but at their risk and cost; (vi) Lack of capacity to conduct multiple roles (wholesaler and commission agent) prevents farmers and their organizations to compete with traders; (viii) Existence of established traders and barrier to new entry is a typical market phenomenon; and (ix) Less number of active traders during

slack season also reduces competition, if any.

- Results of seasonal indices, correlations, daily, monthly arrivals their prices etc. indicated existence of anti-competition elements in the market. A few big traders having well connected networks with market intermediaries in other markets seem to have played a big role in hoarding for expected high prices.
- In December 2010, onion prices increased; (i) retailers' markup over the wholesale markets price was more than 150 per cent in almost all major markets in the crucial weeks of December 2010. Therefore, the December 2010 episode was not simply "demand (buyers) and supply (farmers) problem"; (ii) the traders as also international trade had a great role in the December 2010's high price episode. Unseasonable rains in late September and October 2010 destroyed the onion crop. Yet the government agencies allowed traders to export 1.04 lakh tonnes of onion in October 2010. By the time the Minimum Export Price (MEP) was hiked to stop exports in November, but the damage had already been done.
- It was noted that the average experience of commission agents and wholesalers in onion trade in selected markets is around 20 years. That indicates the existence of the same commission agents and wholesalers in the markets, who normally have huge turnovers. This creates oligopoly like situation in the market, and perhaps restricting entry for new entrants. A clear case of entry barrier.
- During field investigation it was noticed that some farmers have developed close relationship with commission agents, and further commission agents were having close understanding with wholesalers. This created a situation of both benefit/loss to the farmers. In a few markets in Maharashtra, the commission agents were keen to satisfy the wholesalers, as they first of all allowed the wholesalers to pick up the produce by giving him credit for a month or two and then in case of early payment, they were rewarded with some discount. Such kind of anti-competitive spirit showed by the commission agents towards traders for their own interest ultimately inflicted loss to the farmers. This could have been avoided through close monitoring by APMC officials.
- Collusion was observed among traders in selected markets in Maharashtra and Karnataka, For instance, a visit to Ahmednagar APMC revealed that there was collusion amongst traders. While bidding on certain lots was taking place, traders started with about Rs 300 per quintal and kept bidding higher prices till one trader quoted Rs 400 per quintal and another bid at Rs 405 per quintal. The commission agent stopped the auction and produce was shared between two wholesalers. It should also be pointed out that in Washi market about 60 per cent of farmers reported that sales were undertaken through secret bidding.
- Market functionaries often resort to a strike which finally ends up in market closure. When the market is closed, stocks pile up which has a downward impact on prices.
- Export ban is major problem often faced by traders when onion prices show an upward trend. Exporters lose their credibility in export markets as irregular suppliers in international markets. Added to this is arbitrary practice of fixing Minimum Export Prices (MEP) for onion. At times the MEP is fixed at very high levels and exporters actually sell at prices below MEP though the letter of credit is prepared at MEP. In any case, some big traders benefit despite of high MEP. Fixation of MEP makes small exporters reluctant to export which sometimes leads to excess supplies in domestic markets, leading to fall in prices. Farmers also loose when prices show downward trend.
- From our analysis of Maharashtra and Karnataka markets, it is observed that there are significant marketing costs, which also contribute to price hike.
- One common problem observed in Maharashtra and Karnataka is lack of

market infrastructure. With the 73rd Amendment to the Constitution, institutional framework involving panchayats is provided to deal with the problems at the village and taluka levels. The credit cooperative societies provide a good back up support to the marketing infrastructure. In fact, in the rural areas, credit cooperatives and market cooperatives work hand in hand.

**Policy Recommendations:**

1. For improving efficiency of market through competition, it is suggested that entry of new commission agents and traders should be encouraged through various incentives like issuing new licenses, providing space for shops, storages and other infrastructural facilities. This will greatly help in efficient price formation. Apart from these, a strict regulation should be put in place to weed out market intermediaries who play multiple roles and engage in unfair practices like low price bidding or collusion. Even the behaviours of traders should be closely monitored by the APMCs for any intentional hoarding.
2. There should be appropriate policy for a free entry for new commission agents and wholesalers (including private companies) through providing better infrastructure and licenses for creating competitive environment and avoiding oligopoly situation as well.
3. It is necessary to bring in stringent measures for those who indulge in intentional hoarding in order to create artificial demand situation for realization of better prices. For instance, canceling license for a temporary period/ putting fines and penalties, etc.
4. Since secret bidding is against the Regulated market Act, it is necessary that the government should mandate the APMCs and other wholesale markets that there should not be any secret bidding.
5. To avoid collusion between traders, involvement of APMC officials in the auctioning process should be mandatory. Besides, cooperative marketing societies must be encouraged so as to prevent collusion amongst traders.
6. Since closure of markets would not only cause adverse impact on prices due to significant rise in stocks, it will also lead to inflationary pressures, it is recommended that there must be a mandatory provision in the APMC Act to prevent sudden market closers
7. Export ban on onion coupled with fixation of MEP should be discouraged as this measure will have long run effect on market functionaries as also farmers.
8. Charges collected from the APMCs should be effectively used for providing better infrastructure, as this will benefit all the stake holders, particularly the farmers.
9. Following policy initiatives are important to avoid the December 2010 type of volatile situation in future: (i) Better system for forecasting total production considering economic and meteorological events, at least in major onion producing area. This would help in taking appropriate decisions about onion export; (ii) The export of Indian onion has been rising significantly in recent years. However the export could be planned in such a way that it won't lead to onion price rise. India has seen one of the highest ever export of onion in the history in 2009-10, ironically, when we had experienced one of the highest price increases for the onion in India; (iii) National market information system (prices observatory) can be put in place. This involves recording, disseminating and analyzing price data for onion for key markets in the country for better price transmissions to the actors involved in the supply chain.
10. NAFED should procure onion from market and directly from the producers and not from traders. This will set in competition. NAFED can intervene at appropriate time in market.
11. In order to reduce marketing costs, it is suggested to reduce actors involved in the market, like promoting direct sales of farmers produce to wholesaler and more particularly linking small farmers produce to retail chains.

12. Though panchayats so far, have been trying to provide basic services, they do not provide marketing facilities in any way and their involvement in providing marketing facilities is only recorded on policy document. It is suggested that the Government should take necessary steps that could lead to the implementation of 73rd Amendment to the Constitution wherein institutional framework involving panchayats is provided to deal with the problems at the village and taluka levels.

13. Since the growth of credit cooperatives in agriculture in most of the states in India as well as in Karnataka have not been keeping pace with the marketing cooperatives, it is suggested that the Competition Commission of India and government should initiate steps to foster the growth of credit cooperatives in agriculture sectors.

14. Finally, in view of the inefficiency in the supply chain in Maharashtra and Karnataka, it is recommended that Government and the Competition Commission of India should take steps that would lead to a healthy competition, which has the ability to reduce market imperfections as well as improve the welfare of all the actors involved in the market channel (producer to consumer). To fulfill this, it is recommended that necessary changes should be made in the APMC Act in line with the Competition Act of 2002.

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# Acknowledgements

We are thankful to ….

| | |
|---|---|
| Competition of Commission of India…… New Delhi | For sponsoring the study. |
| Dr. Geeta Gouri..... Member, Competition of Commission of India, New Delhi | For giving us opportunity to undertake this study and for all the encouragements and help rendered to us. |
| Prof. R S Deshpande..... Director, Institute for Social and Economic Change, Bangalore | For providing constant support and feedbacks on the study from initial stage to the finalisation of report. We also thank him for spearheading the work and without his prodding this study could not have been completed. |
| Dr. Payal Malik…… Advisor (Eco) Competition Commission of India, New Delhi | For her excellent comments and suggestions on the draft report. |
| Dr. Anil Kumar Sharma..... Assistant Director, Competition Commission of India, New Delhi | For his excellent comments and suggestions on the draft report. We also profusely thank him for full coordination and continued administrative support provided during the study. |
| Mr. D. Subrahmanyam..... Economist, Bangalore | For his excellent comments and suggestions on the draft report. We sincerely acknowledge his feedback for bringing the report in proper shape and enhancing the quality of report. |
| Prof. Rajas Parchure..... Director, Dr. S. S Kalamkar Reader Ghokhale Institute of Politics and Economics, Pune | For participating with us in the study for collecting field data on market functionaries in Maharashtra APMCs. |
| Respondent Market Functionaries in the selected markets of Karnataka and Maharashtra..... • Farmers; Commission Agents; Wholesalers/Traders ; Retailers; Consumers; • Market Committee Members /APMC Secretary; Nasik District Onion Traders Association; Wholesale Onion Traders Association, Belgaum | For participating in the interviews and discussions and providing valuable information and suggestions. |

All those who have directly & indirectly involved in the study.
Usual disclaimer applies.

October 06, 2012 Authors

# Executive Summary

Onion is one of the most significant and commonly used ingredients in Indian recipe. Thus the changes in prices have a huge impact on the food security, and farmer and consumer welfare. An increase in price of onion affects the consumer by way of increase in food consumption budget, while a decrease in onion prices below the cost of cultivation affects the producer. There is enough evidence to show that prices of agricultural commodities are more volatile than those of the non-farm commodities. These commodities are less elastic to price and income and inherently unstable due to weather and institutional risks. The high volatility in prices of agricultural commodities can have a disproportionate, typically nonlinear or asymmetric impact on the economy and may fail to endure exceptional shocks. This impact is prominent if governments and households are well-adapted to normal volatility but fail to anticipate or consider making worthwhile provisions against extreme shocks.

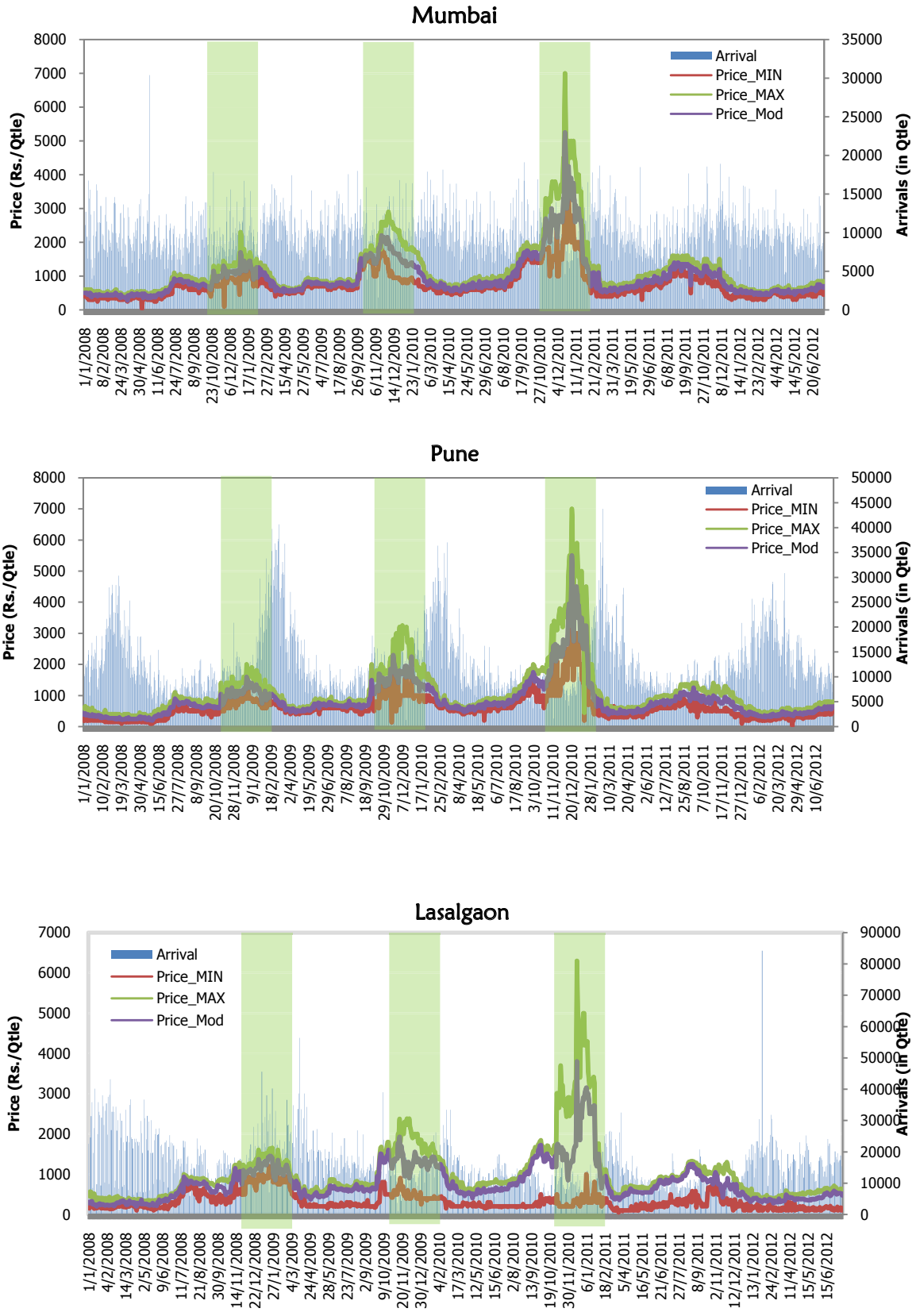
It is also important to note that the high inflation of food commodities cannot always be attributed to risks, exogenous shocks and mismatch between demand and supply. It is also caused by market inefficiencies, weak supply chains and monopolies in the market. The spurt in food inflation in the recent months has brought to forefront some critical issues of price volatility in agricultural commodities, agricultural market structures and market efficiency.

With this backdrop, the CCI desired ISEC to undertake this study on the competitiveness in the major onion markets in Maharashtra and Karnataka considering area, production and productivity trends, analysis of market structure, market margins, cost of production, institutional support, price volatility, etc. The study addresses the following specific objectives:

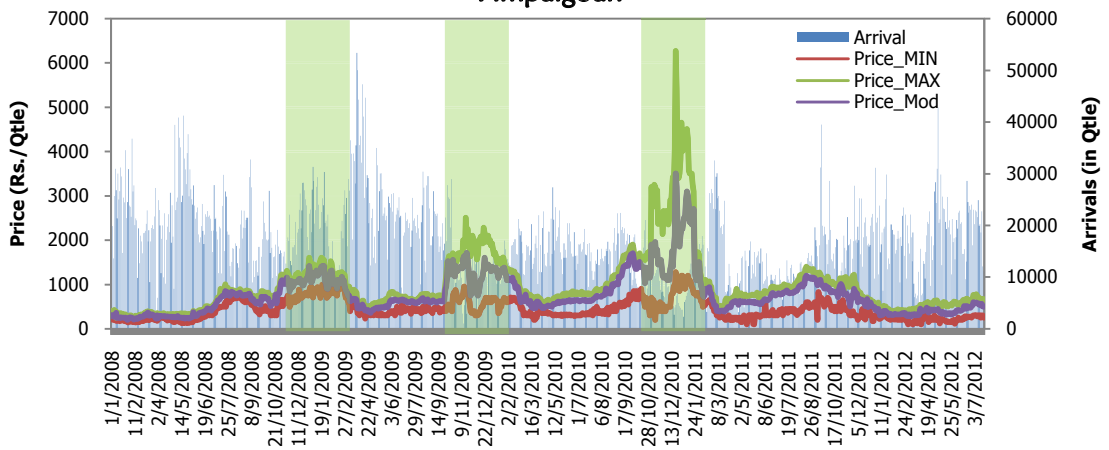
- To analyze time series data on production, onion yield, area under cultivation of onion and other indicators so as to analyze the trend in production, prices, output and demand of onion.
- To document the market structure; that includes:(i) Various market players, and nature of market at each stage of the supply chain of onion; (ii)Details such as regulatory framework for the market, types of market participants, role of each market participant and their relationship, number of primary mandis, number of transaction points etc. This will be done to understand the volatility and price fluctuations.
- Assessment of competition in Onion Markets: (i) a quantitative analysis on price-output and cost relationship in the selected markets, (ii) Comparative analysis of competition and efficiency in regulated and unregulated mandis (iii) Analyze the causes of difference between the wholesale and retail prices of onion, and (iv) The supply chain of onion from producer to consumer in selected Markets.
- Provide policy initiatives and recommendations, based on the findings of the study

In order to address the issues posed in the objectives, the secondary and primary data were collected from all the actors involved in the onion supply chain located in five major onion markets in Karnataka and six major onion markets in Maharashtra. Primary survey is carried out in these 11 markets, with a structured questionnaire for farmers, retail and wholesale traders and market functionaries. The primary survey has been used to find out structure and conduct of onion markets and for assessing the competitiveness of onion markets in India. Secondary data has been used to find out the historical and recent trends of onion production, area under onion cultivation and yield of the onion. The same has also been used to find the seasonality of onion arrivals and prices in the major markets, and wholesale and retail prices of the onion in major markets. This data has been gathered personal visits to state departments of agriculture, directorate of statistics and economics, and websites of international organizations such as

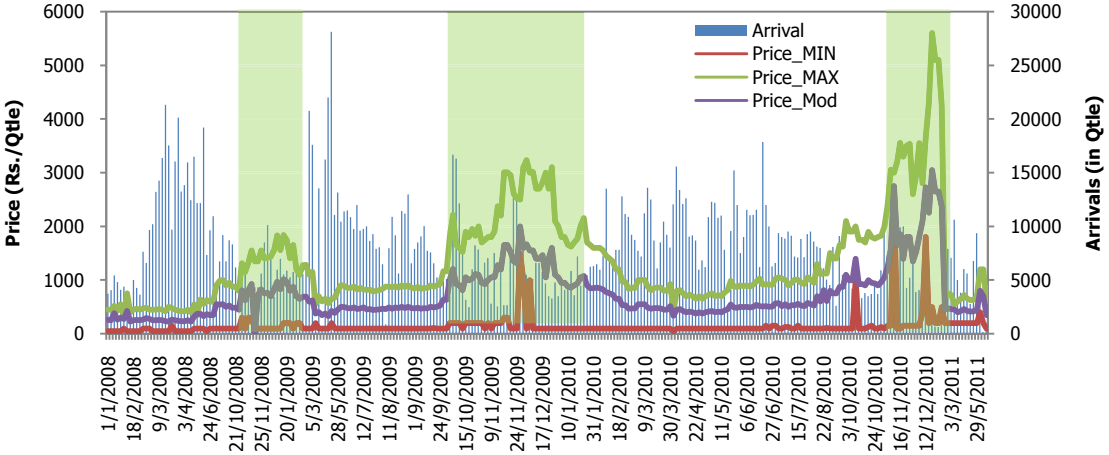
Figure 2.1: Daily Arrivals and Minimum, Maximum and Modal Prices in Selected Markets of Maharashtra and Karnataka



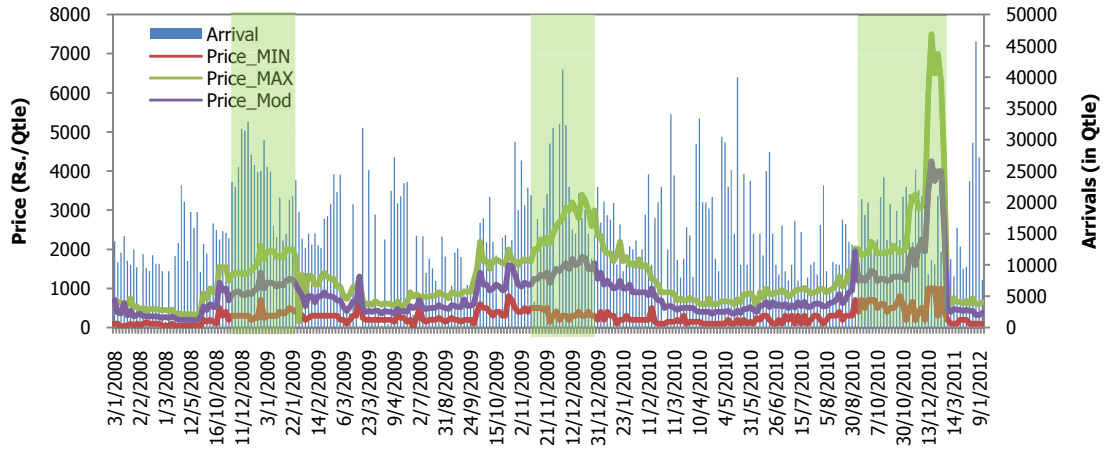
## Pimpalgoan

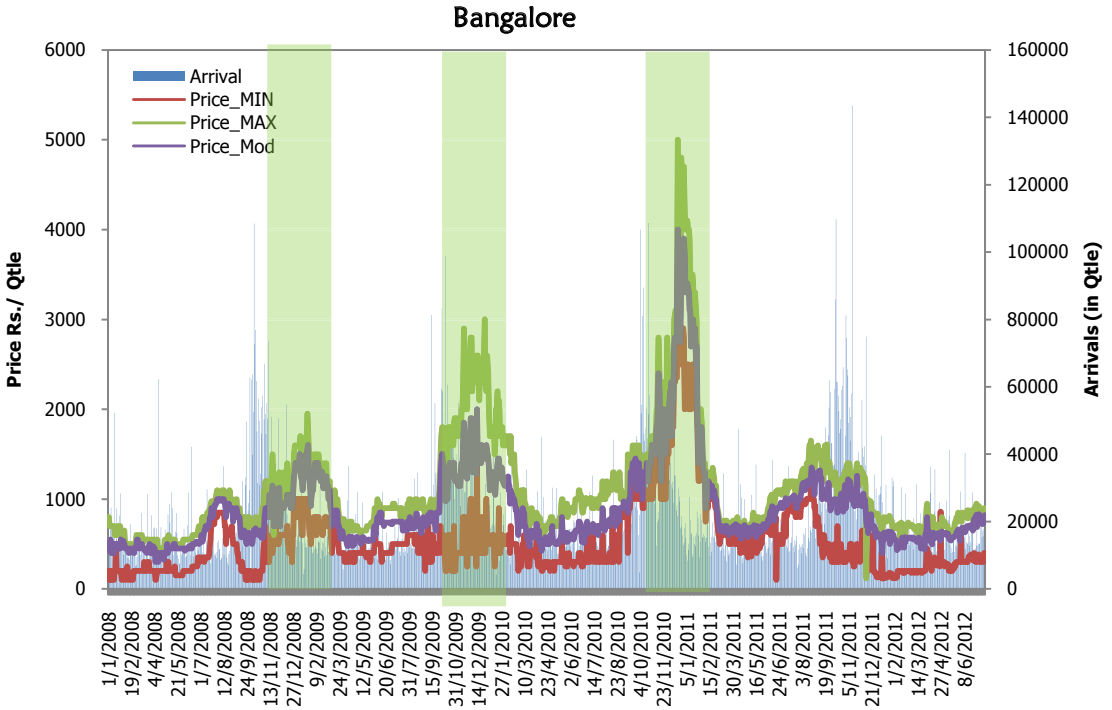



## Sangamner




## Ahmednagar




Bangalore
Arrival
Price_MIN
Price_MAX
Price_Mod
Price Rs./ Qtle
Arrivals (in Qtle)
6000
5000
4000
3000
2000
1000
0
160000
140000
120000
100000
80000
60000
40000
20000
0
1/1/2008
19/2/2008
4/4/2008
21/5/2008
1/7/2008
12/8/2008
24/9/2008
13/11/2008
27/12/2008
9/2/2009
24/3/2009
12/5/2009
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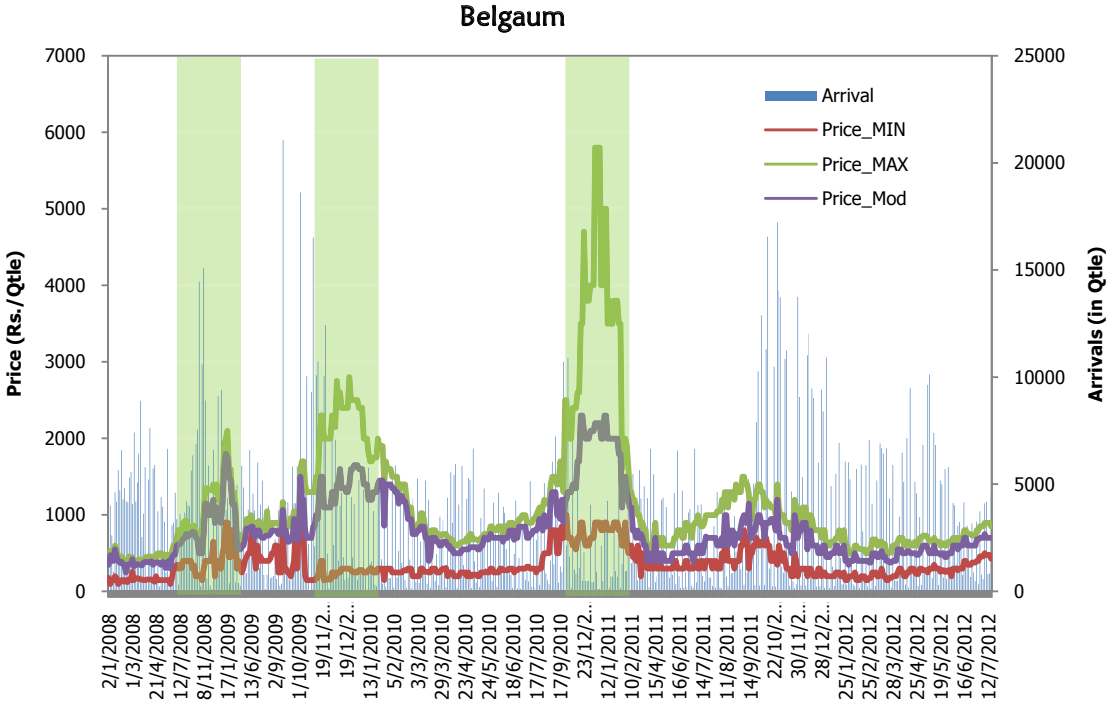
1/2/2012
14/3/2012
27/4/2012
8/6/2012


Belgaum
Arrival
Price_MIN
Price_MAX
Price_Mod
Price (Rs./Qtle)
Arrivals (in Qtle)
7000
6000
5000
4000
3000
2000
1000
0
25000
20000
15000
10000
5000
0
2/1/2008
1/3/2008
21/4/2008
12/7/2008
8/11/2008
17/1/2009
13/6/2009
2/9/2009
1/10/2009
19/11/2...
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13/1/2010
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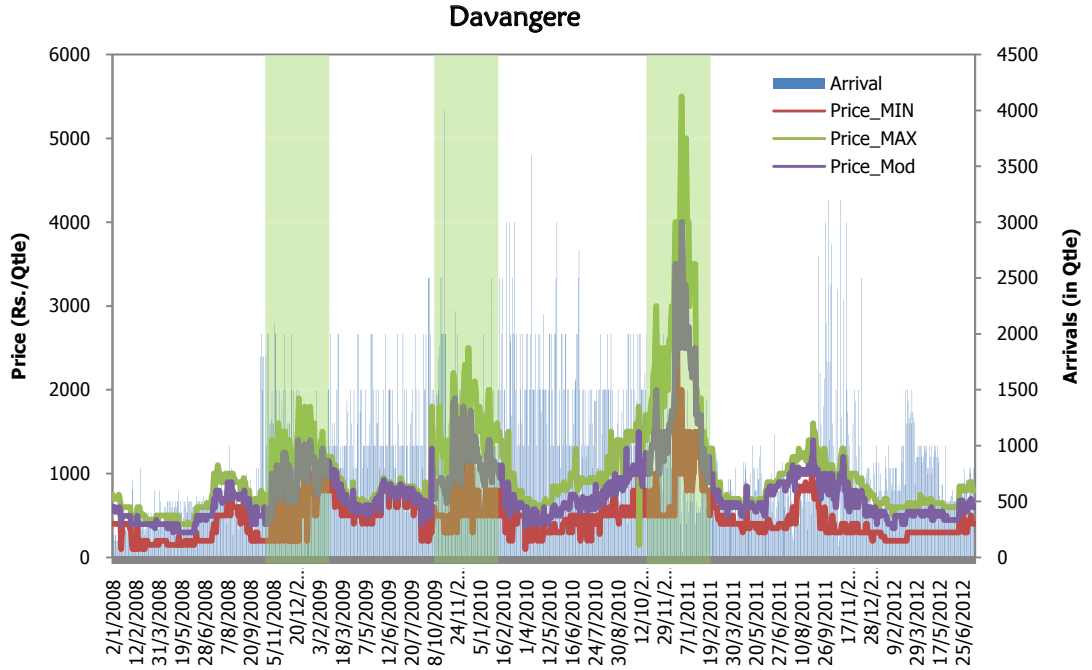
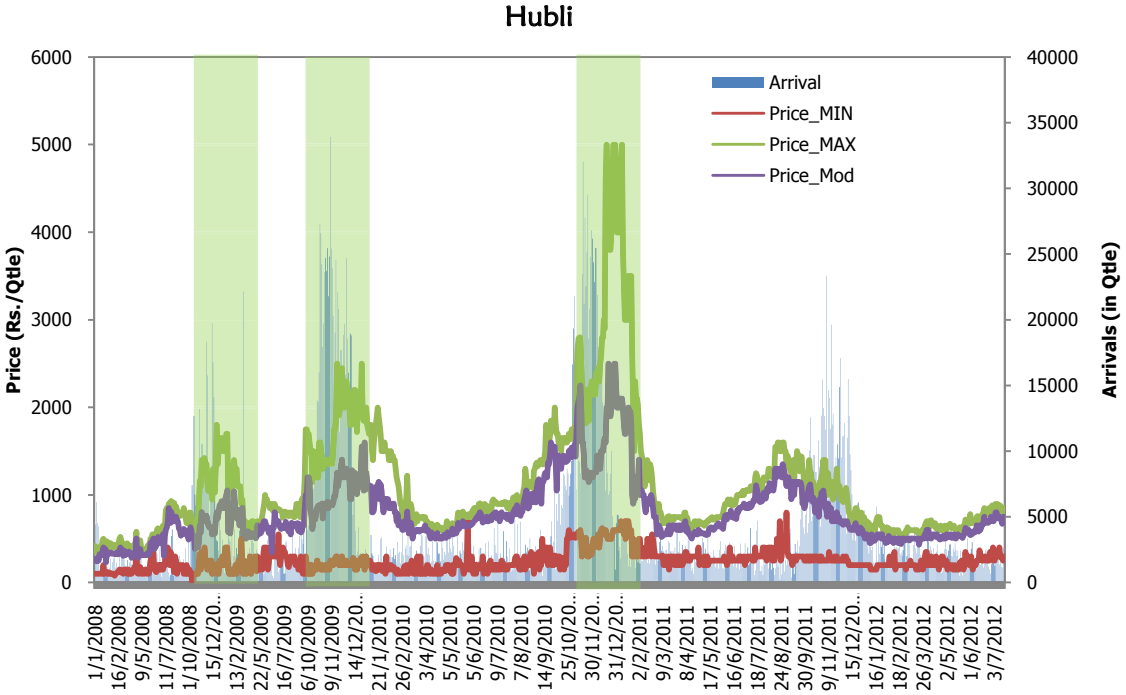
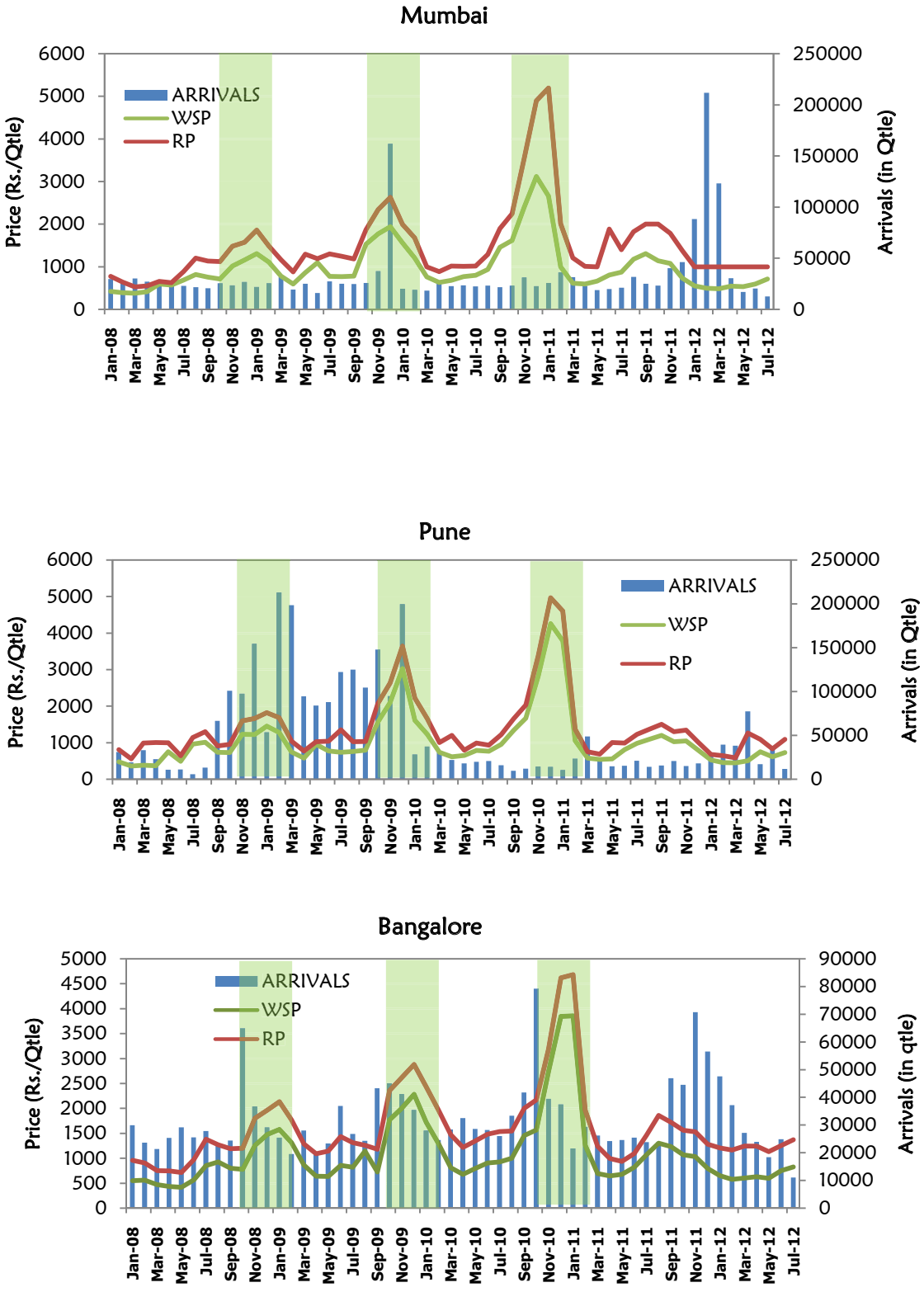
12/7/2012

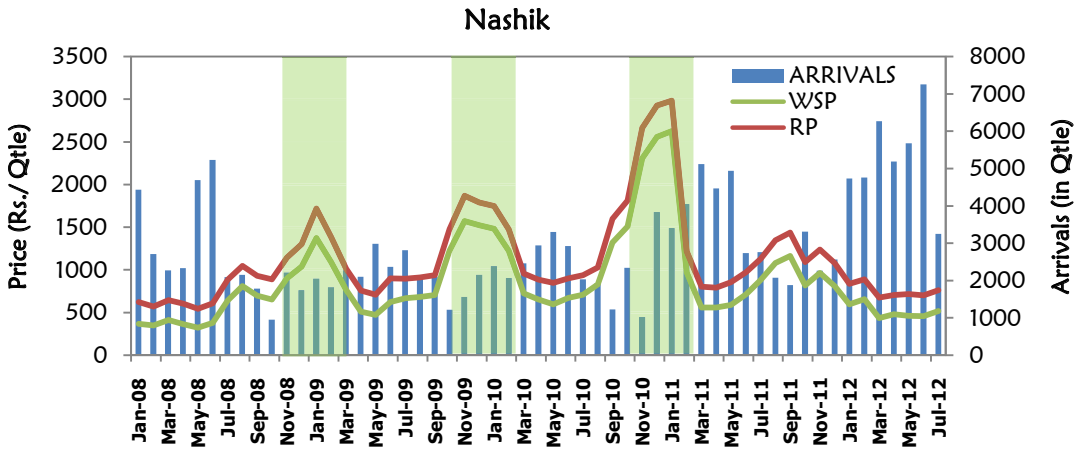


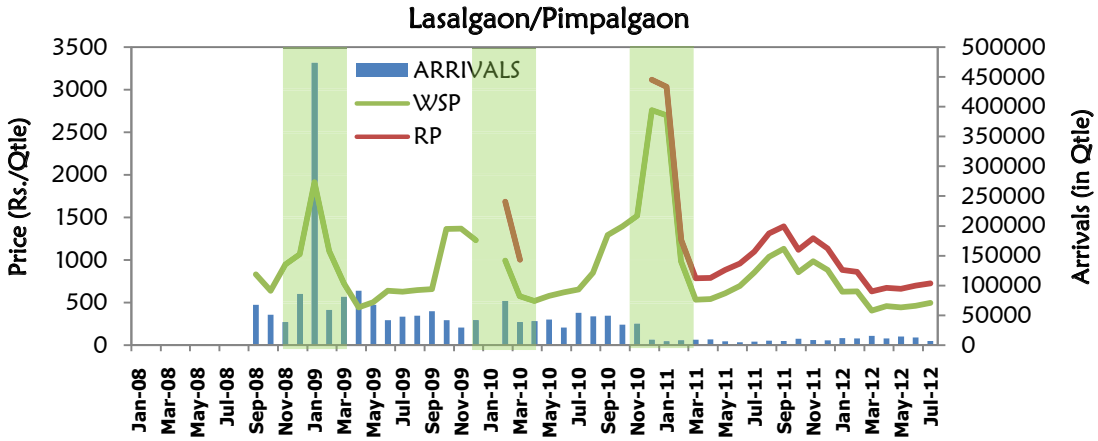



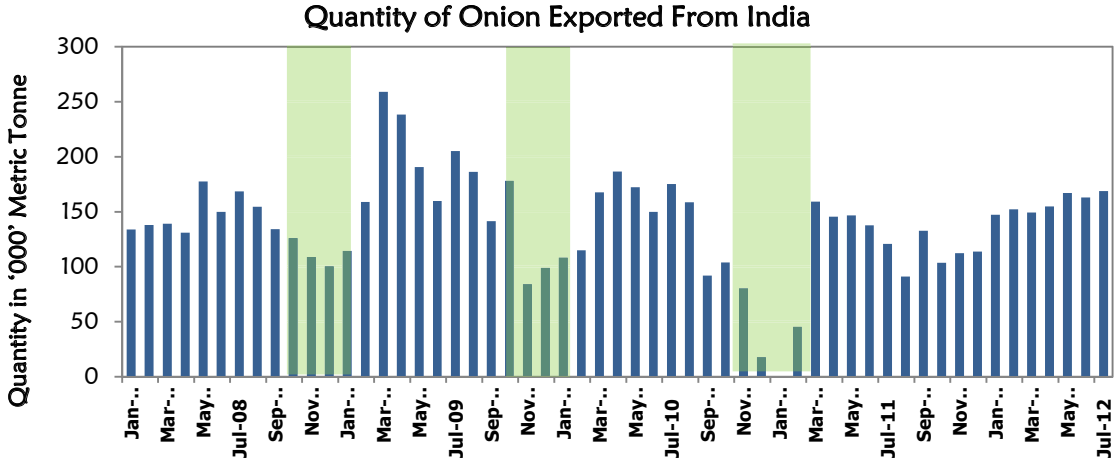

**Source** – Based on online data from NHRDF (2012)

Figure 2.2: Month-wise Total Arrivals, Wholesale Prices and Retail Prices in Selected Markets of Maharashtra and Karnataka and Quantity Exported from India: Jan 2008 to July 2012



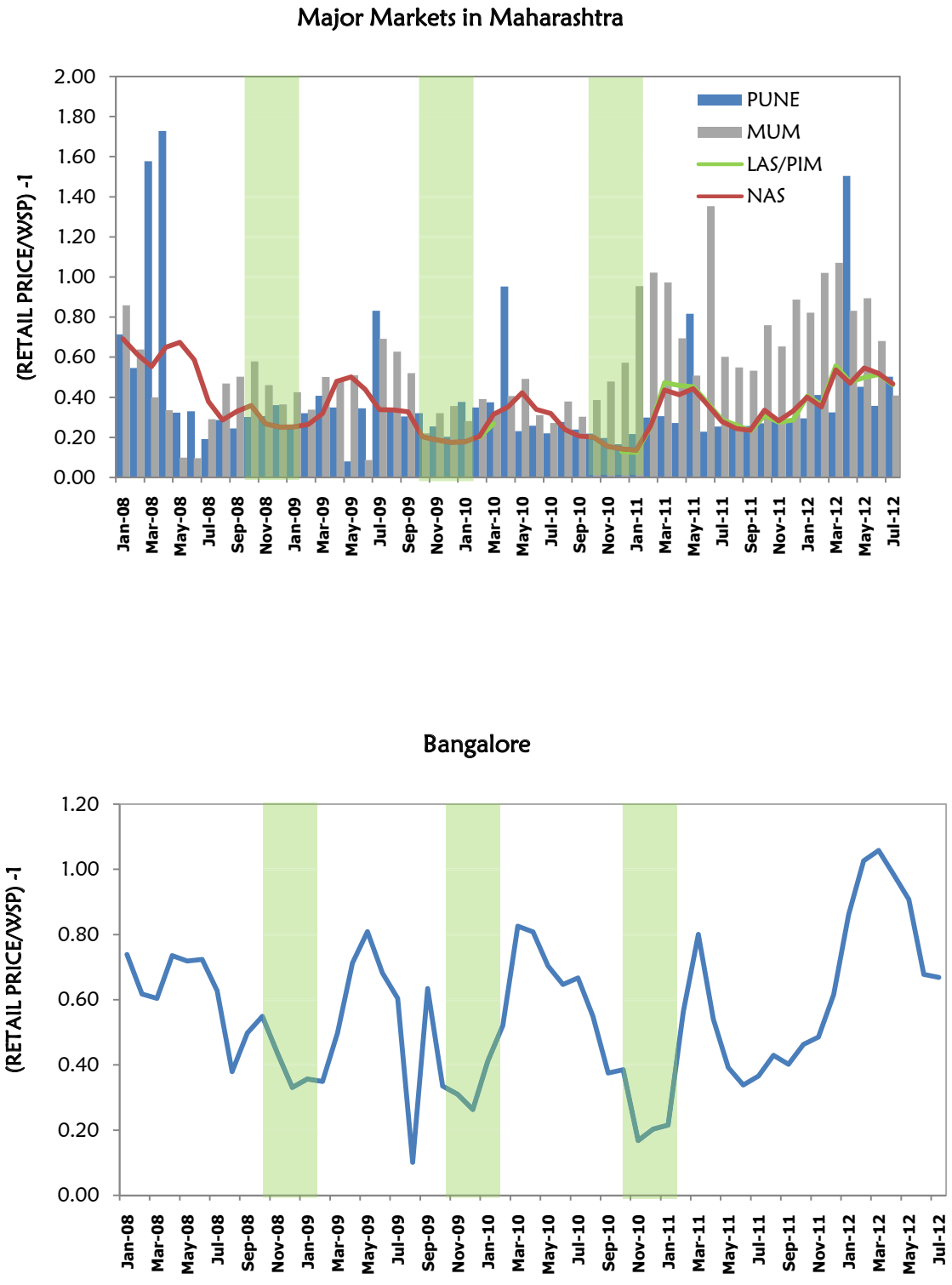


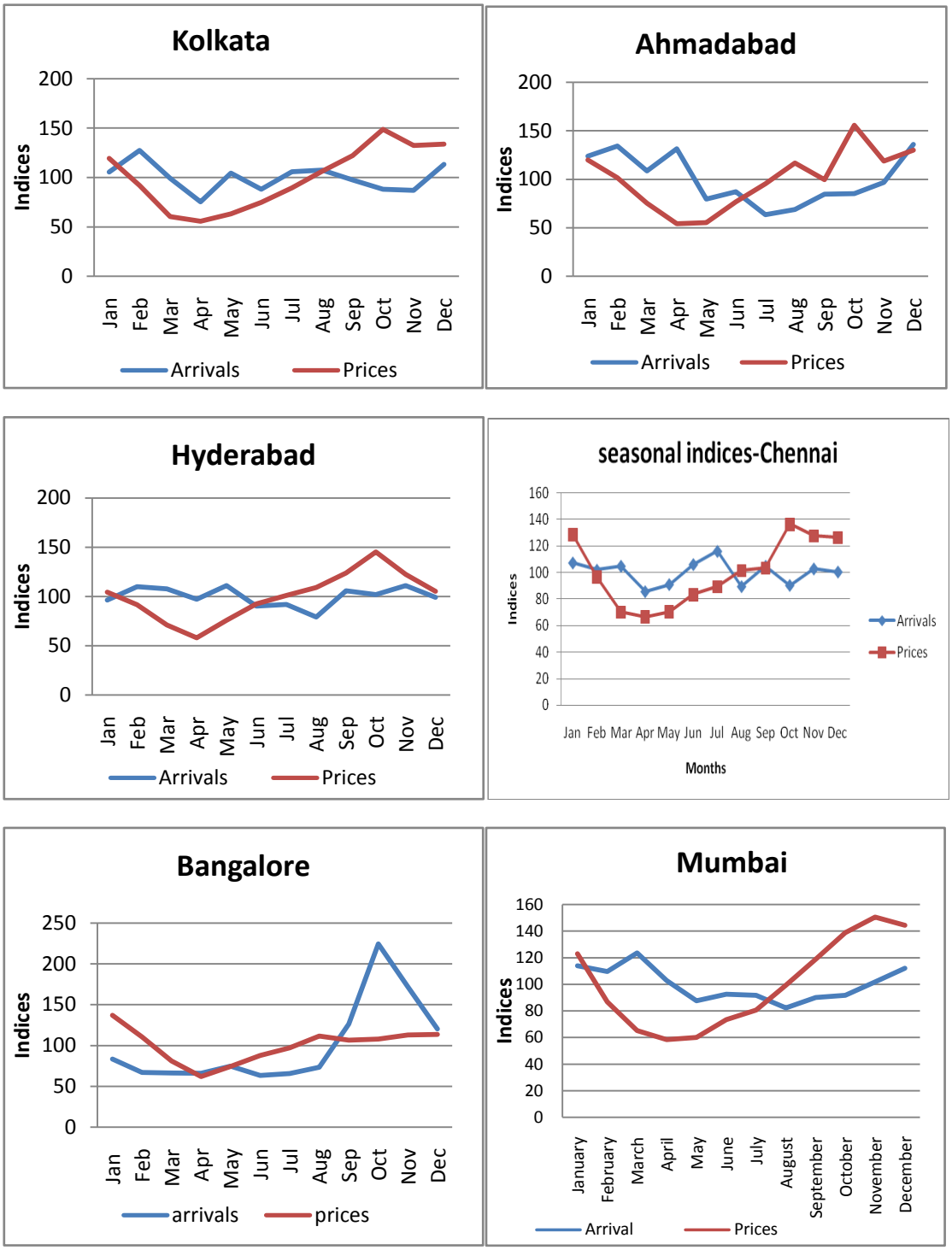

**Note** – breaks in trend line indicate data gap or non-availability of data
**Source** – Based on online data from National Horticultural Board (2012)

Figure 2.3: Retailers' Margins over Wholesale Prices in Selected Markets of Maharashtra and Karnataka – Jan 2008 to July 2012




**Source** – Based on online data from National Horticultural Board (2012)

Annexure Figure 2.1: Seasonal Index of Arrivals and Market Prices in Selected Markets of India



future markets, direct marketing, private markets and contract farming, but its effectiveness in improving the efficiency of the marketing system, attracting private sector investment in agricultural marketing and giving due share of farmers in the consumer rupee back to them is yet to be seen.

The process of liberalization initiated in early 1990s has relaxed many controls on the agricultural markets and market-led commercialization is allowed to operate freely. Despite regulation of markets, these have never been favorable to the farmers and often the traders and traders' lobby dominated the market enterprises. As a result, even though the wholesale price index shows a small increase, the actual prices received by the farmers are far below the wholesale prices. Market imperfections are not only relative in the product market but have also spread in the factor market. All this led to the farmers and consumers being at the receiving end in the market. We hypothesize that the market forces and infrastructure in current situation has a role in imperfect outcomes for both the farmers and the consumers.

### 3.2 Market Structure of Onion

Market structure of Onion in India is summarized below.

- Small holding of farmers: Land holding of onion growers is very low. Most of the farmers own less land and due to unfavorable weather conditions and need to spread price risk over a period after harvest even one big vehicle is not available with a single farmer field at a given time. Such small availability implies that the individual farmers have a little say in the final price of the onion in the market.
- Marketing produce as per grade necessity: Different regions and markets of India have different requirements of Onion (while eastern India / Bangladesh etc. markets prefer small sized onion, North and West Indian markets prefer bigger sized onion). Traders buy small lots from the market yards and pool the produce for sorting / grading at their pack houses and sends different grades to different markets all over India depending upon the grade requirements and price at a particular market. Lack of trading expertise, market knowledge and risk bearing capacity has prevented most of the farmers to make a significant dent in onion trading. So, most of the trading is in private hands.
- Local markets act as a reference market to small growers: Farmers generally take reference of the local markets' rates, while traders compare rates of all markets, including major distant and export market and then decide where to send their produce of a particular grade. This brings greater profits to them.
- Non-sustainability of exclusive onion Associations: Because of various agro-climatic reasons, onion belt is in actually a scattered chunk of large number of smaller sub belts. For a particular distant market, for example Delhi or Bangalore, most of these sub belts are active for a short period as far as fresh onion flows are concerned. Active period in some cases is only a fortnight or a month. Because of this reason, exclusive onion associations (farmers associations, co-operatives) have not been successful as short period of business cannot sustain their yearlong expenses.
- Concentration of large storage capacities with traders. For historical and financial reasons, large storage capacities for onion have remained with private traders and that too in Nasik belt. Traders can buy the whole stored lots and provide sorted / graded produce to retailers or buyers as per their requirement at their risk and cost.
- Vertical Integration of various market functions by onion traders. Traders wear many hats by bending (not breaking) the APMC rules and bye laws. Many onion traders are commission agent cum wholesalers, order suppliers, forwarders cum store owners and some are even transport or railway agent too. They have different firms with or without licenses to handle same function, let's

market and growth oriented. It enables producers to undertake market-driven production planning, facilitate integration of farm production with domestic and global markets and attract massive investments for building up post-harvest infrastructure.

say 'being a commission agent". Such multiple roles by select few big traders have brought inequality between traders. So big have become very big which has created monopolistic conditions. This lack of capacity to conduct multiple roles prevents farmers, their organizations to compete with traders.

- Existence of established traders and barrier to new entry: In important onion markets, the commission agents and the traders dealing with onion are well established and have an average experience of 20 years. This shows the lack of new entries in the market as well as domination of the established market players.
- Less number of Active traders during slack season- the numbers of active traders are significantly low during the slack season of the year in all the markets. In Gadag market- only one trader is active for three to four months' slack season, in Belgaum the number is ten to fifteen and so on. Such reduced number of traders creates an oligopolistic situation

## 3.3 Market Infrastructure

Market infrastructure is important not only for the performance of various marketing functions and expansion of the size of the market but also to disseminate appropriate price signals to farmers. Given the appropriate irrigation and technology development, it is the efficient infrastructure, good roads, communication and markets etc., creates an enabling environment for farmers to realize a higher price and also benefits the consumer. Their proper developments lead to reduction in marketing costs.

The poor state of infrastructure is the main bottleneck in many areas. If a gradual trend towards commercialization and diversification of agriculture is to be sustained and promoted, rural infrastructure supporting trade in farm products and inputs and processing of the produce must be strengthened with an emphasis on its quality.

Availability of different marketing infrastructure affects the choice of technology to be adopted, reduces the cost of transportation produces powerful impetus to production and also affects income distribution in favour of small and marginal farmers by raising their access to the marketing. Looking to this, every nation poised for growth includes development of agricultural marketing infrastructure as part of its agricultural development strategy. Studies have shown that infrastructure and agricultural development is highly correlated. In the context of need of stepping up agricultural growth, emphasis should be given for developing rural infrastructure.

### 3.3.1 Agricultural Marketing and Market Infrastructure in Karnataka

#### *Agricultural Marketing System at the Primary Level*

Agricultural marketing system at the primary level in Karnataka involves four broad marketing channels, viz., (i) direct to consumers; (ii) through private wholesalers and retailers; (iii) through public agencies (regulated markets) or cooperatives; and (iv) through processors. The share of these channels in total marketed product varies from commodity to commodity and across regions. Marketing structure of the agricultural produce differs according to products. Among these channels, large quantity of produce is transacted through the regulated market channel. Food grains are mostly marketed at the primary village market or in the regulated market yard. The procurement of grains takes place only in the case of rice and through the processing mills. Oil-seeds are largely sold through the regulated markets and directly to the processors. But other commercial crops like onion, banana, arecanut, coconut, sugarcane and cotton have developed specific marketing channels.

A few changes have occurred in the agricultural marketing sector after the creation of marketing institutions and the infrastructure. These include: a) increase in the market arrivals as per cent to total output; b) reduction in the market inefficiencies in terms of unauthorised charges and irrational grading; c) dissemination of market information at the regulated market yard; d) storage facilities and place to stay created for the farmers; e) marketing charges payable by farmers either dropped, standardized

that this may not be possible in case of sales through direct marketing or other systems.

Another major regulated market located in an urban area is Mumbai Agricultural Produce Market Committee (MAPMC). The market area of the committee comprises of Greater Mumbai, Thane Taluka and 30 villages of Uran Taluka of Raigad district. Mumbai APMC also has features of a well regulated market such as computerized accounting, electronic weighing system, provision of payment within 24 hours, market information display on Display Board, availability of MCX facility and registration of vehicles to prevent unauthorized trade. A Vigilance Section is set up to intercept the vehicles carrying unauthorized agricultural produce in the jurisdiction of Mumbai APMC. The MAPMC also has necessary infrastructure such as banks, post office, electronic telephone exchange, farmers Rest House, weighing machines, weigh bridges, auction halls, warehouses, etc.

An important feature of MAPMC is that sales take place between two traders on sample basis. The officials at MAPMC revealed that arrivals in the market are unlimited and hence there is no scope for auction as there is time constraint. The recent advancement in telecommunication has helped farmers to obtain information on prices prevailing in various regulated markets and almost all farmers are aware of prevailing market rates. Accordingly, they are in a position to decide in which market they want to sell for getting higher prices. Commission agents having close personal relations with farmers send their personnel to the interiors to keep the farmers informed about conditions prevailing in the market and also arrange to sell the produce of farmers, if necessary. If the farmers decide to sell in MAPMC, they transport their produce to the market. The commission agents arrange to sell their produce and charge a commission of 6.5 percent of the value of sales. APMC officials however, reported that farmers by and large do not themselves come to sell their produce in MAPMC since transport and other logistic costs such as boarding and lodging are very high. Therefore the commission agents receive the produce of the farmers and sell it on his behalf to wholesalers in MAPMC. Mumbai is a huge consumption market and stocks of onion are mostly consumed locally while about 10 to 15 percent is exported. The produce normally reaches to MAPMC by trucks as most of the supply of onion comes from within Maharashtra.

***During our the field visits in Hubli and Belgaum APMCs, two types of collusions, namely price fixing and bid rigging came to our notice.*** The local commission agents and traders were having strong networks with traders in other states (i.e. Goa and Andhra Pradesh). Our discussion with some local commission agents and traders indicated that they purchased onion for big traders of Goa and Andhra Pradesh. The quantity and price of the onion was decided over the phone on a day before the onion market opened. From the discussion, the local traders and commission agents maintained good networks with the traders in Goa and Andhra Pradesh to get bulk orders at better prices. The relationship with farmers, however noticed to be casual as there were hardly farmers who supplied the produce at regular basis.

The collusion in these markets even though is small to affect the prices of the onion at country level but nonetheless underline the inefficiencies in onion markets, and was detrimental to both the consumers and producers. It also gives a signal that how intermediaries control onion trade and prices in the country.

Some of the observed reasons behind such collusion are -

- Less number of commission agents and traders: The Belgaum APMC has around 32 commission agents and 10 to 15 major onion traders. In case of Hubli, commission agents and traders share more or less same strength numerically, around 50 to 55. However not all of them are active all over the year. From January to August (off-season) the number comes down to 10 traders in both markets. Such less number of traders and commission agents make it easier for them to discuss and manipulate the prices.

- The majority of commission agents and traders are functioning in the markets since past 10 to 15 years and very few new commotion agents and traders (1-2) have got the license. Such long presence with each others in the market has helped them in developing mutual

understanding and gives undue advantage to these established trading firms in onion trade.

- Strong presence of Trade Associations: Both the markets have a presence of strong and active trade association. The Associations have regular meetings and elections. Such functioning associations help in building direct or indirect consensus about the onion pricing.

- Traders wear many hats: Many commission agents are themselves traders or purchase onion for big traders in other states. Such multiple roles in trading have given upper hand to manipulate the prices.

### 4.7 Concluding Remarks

Some of the major conclusions and remarks coming from field data analysis are -

- Most of the sample farmers growing onion were small and marginal farmers.

- In our analysis, sample famers in general felt that they received price lower than expected. Notably, even in Maharashtra where farmers were less dependent on commission agents/traders for price information and credit, had to sell their produce on the prices decided by commission agents and traders and many of them were not happy with price they received. In Washi APMC, few farmers reported the case of secret bidding. This clearly indicates the strong hold of market intermediaries in market functioning.

- Relatively better price in APMC (as compared to village/local market) figures out as one of prominent reasons why sample farmers in Karnataka (99.2 per cent) preferred to sale in APMC markets. This need careful interpretation as most of the sample farmers in the state had no other option/substitute and prices prevailing in APMCs may have been misunderstood as a better price. Besides, it was noted that many farmers in the state (65.6 per cent) had personal relations with commission agents and trades, which ensured the farmers timely advance credit, but also created a space for their exploitation.

- From the field survey the prevailing market imperfections clearly come out. It was noticed that almost 65.6 percent of the sample farmers in Karnataka were victims of interlocked market. About 55.2 per cent sample farmers experienced problems related to weighment and more than one fourth noticed unreasonable grading and anomalies in price fixation. Though these problems were not prominent in Maharashtra, some farmers did observe the problems like barrier to entry, anomalies in price fixation and interlocked market. For instance, evidence of market imperfection, particularly collusion was observed during price formation in Ahmednagar market amongst traders. While bidding on certain lots was taking place, traders started with about Rs 300 per quintal and kept bidding higher prices with minute increments till one purchaser quoted Rs 400 per quintal and another bid at Rs 405 per quintal. This is a standard method to 'fire off' the seller. The commission agent intervenes to the auction and saying that the two bidders should equally share the produce that was being auctioned. Perhaps the commission agent could have waited for a slightly higher bid (i.e above Rs 405 per quintal) and then sold the produce. But bidding was immediately stopped at Rs 405 per quintal and produce was shared between two wholesalers.

- Asymmetric information has been one of the key concerns in the market failures. Farmers in particular have found themselves as the main victim. As observed in our field survey, about 94.6 per cent of the sample farmers in Maharashtra and 86.4 per cent in Karnataka were not aware about marketing channels in APMC and were also not aware of other options to sell their produce. The figures on the extent of awareness about Minimum Support Price (MSP) are close to the figures of NSS Situation Assessment Survey (59$^{th}$ round, 2003), indicating despite realizing the problem much less has been

done on dissemination of market information

- Many farmers felt that the government should purchase or help them in selling or exporting their onion or at least help them in getting a price of Rs.1000 per quintal so that they cover their cost of production and earn a reasonable return on cultivation of onion. NAFED does not purchase directly from farmers.
- If long experience in marketing of the functionaries is considered then our analysis clearly indicates that commission agents and wholesalers in all sample markets are having stronghold on the functioning of these markets. They have been around about two decades in the business.
- From our discussions, it was quite clear that traders hoarded onion in anticipation of higher prices. After making purchases from farmers, they stored the onion instead of immediate sales. Further, some commission agents who reported that they are having license to operate as wholesaler. They were actually the 'A' class commission agents and played a dual role in purchasing as well as facilitating the transactions. Here, it should be noted that the possibility of wholesale traders operating as commission agents certainly gives undue advantage to the traders having huge turnover capacity. It also helps them in strengthening their monopolistic position in the market, and more by restricting others from entering or getting new license. In our discussion, small traders therefore complained that they are not in a position to take any advantage of new APMC act as the license for starting private markets are not easily available and there are numerous restrictions on the location of such markets. And perhaps they, therefore, felt that the scope for promoting competition and creating new additional markets that could function simultaneously with regulated markets seem to be very limited at present .
- Our analysis also highlights that many commission agents and wholesalers have formed good networks with the commission agents and wholesalers operating within and other markets. These groups operate covertly under the usual marketing practices. These share the information on onion prices prevailing in their markets and use to decide the purchase price of onion in their home market. This clearly indicates market intermediaries are well connected and fully aware of the prices prevailing in home and outside markets. In such a situation, the collaboration among commission agents and wholesalers and a few dominant traders acting as commission agents should not be ignored.
- During our the field visits in Hubli and Belgaum APMCs, two types of collusions, namely price fixing and bid rigging came to our notice. The local commission agents and traders were having strong networks with traders in other states (i.e. Goa and Andhra Pradesh). Our discussion with some local commission agents and traders indicated that they purchased onion for big traders of Goa and Andhra Pradesh. The quantity and price of the onion were decided over the phone on a day before the onion market opened.
- In our field visits, we observed that commission agents in the markets were quite interested to keep strong relations with wholesalers by allowing wholesalers to pick up the produce on credit for a month or two. In case of early payment, wholesalers were rewarded with some incentives.
- Most of the wholesalers who responded during the high and low prices reported that they adjusted their transaction pattern considering the size of demand and availability of working capital, indicating big traders with their networking and higher capacity to mobilize working capital may have played larger roles in hoarding of onion.
- Major reasons noticed behind collusive behaviour among the traders and the commission agents are presence of big traders/commission agents within sizably less number of traders and commission agents, their years of experience with strong networks with agents and

officials, presence of strong Traders' Association and traders who are also operating as commission agents.

- Many in Traders' Association believe that infrastructural bottlenecks have often created instability in onion prices across India. The inability to transport the accumulated produce inhibits many temporarily from participating in market auctioning. The withdrawal of many traders from participating in auctions creates less competition and therefore prices start falling.
- Many traders complained that any sudden ban on export of onion not only deprived them from earning higher margin but also created loss of their credibility in the export markets as they failed to deliver their commitments.
- Many traders dealing with exports were quite disappointed with the arbitrary way of fixing Minimum Export Price (MEP). Interestingly, some traders revealed that even though the letter of credit and other documents prepared on the basis of MEP, a few big traders exported onion at prices below MEP to their customers in international markets. These exporters engaged in such practice because they could still get good profit on inflated records. In any case, some traders reiterated that higher MEP helped big exporters to take advantage of lower onion price (as supply in the domestic markets increases) in domestic market and loopholes existing in monitoring of onion trade.
- Traders suggested that the fluctuations in onion prices could be dealt with proper development of post harvest technology in the country. According them, large share of onion stored is lost due to shrinkage and damage. This is significant quantity for smoothening out price fluctuations in onion.
- According APMC officials, one of the major problems often faced by them is frequent strikes called by market functionaries causing the closure of the market. They highlighted that the act of strike often leads to accumulation of stocks and fall in the onion prices, both adversely affecting the farmers.
- Though there are wide variations in the net margin earned by retailers across the markets, retailer from urban centers like Bangalore (Rs.704 per quintal) and Pune (Rs. 620 per quintal) got much higher margins per quintal. Notably, retailers from these centers not only benefited in terms of higher margin but also on the account of large quantity sale.

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