

CMA Publication No - 238

## Fresh Food Retail Chains in India: Organisation and Impacts

Sukhpal Singh  
Naresh Singla

Centre for Management in Agriculture (CMA)  
Indian Institute of Management (IIM)  
Ahmedabad

September 24, 2010

## **Contents**

Foreword  
Acknowledgements  
List of Abbreviations  
List of Tables  
List of Figures and Photos  
List of boxes

<b>Chapter</b>	<b>Title</b>	<b>Page</b>
Chapter 1:	Introduction	1
Chapter 2:	Fresh Food Retail Chains and Small Producers and Traditional Retailers – A review of evidence and issues	16
Chapter 3:	F&V Retail Chains and Primary Producers in Gujarat – inclusiveness and impact	39
Chapter 4:	F&V Retail Chains and Primary Producers in Karnataka-inclusiveness and impact	93
Chapter 5:	F&V Retail Chains and Primary Producers in Punjab and Haryana-inclusiveness and impact	166
Chapter 6:	Alternative F&V Retail Chains- Cases of HOPCOMS and SAFAL	196
Chapter 7:	F&V Retail Chains and Traditional Retailers	215
Chapter 8	Conclusions and Recommendations	245
References		272

## **Foreword**

The Centre for Management in Agriculture (CMA) has been actively engaged in applied and problem solving research in agribusiness development and management in India since its inception. CMA faculty undertake research studies for the Ministry of Agriculture and other agencies on various aspects of food and fibre chains including agricultural inputs, farm production, procurement, processing, marketing, and regulation and promotion. In this context, linking small primary producers with markets has been one of the major issues in policy and practice in improving livelihoods for millions of poor in the developing world. Small producers have many competitive advantages in their interface with modern markets but, there have been difficulties in integrating small holders with modern markets like large volumes required by these markets or high transaction costs of dealing with smallholders. On the other hand, modern supermarket chains also impact millions of traditional grocers and perishable produce retailers in developing countries like India.

Though 100% FDI in retail is not allowed in India, but there are many large corporate domestic players which have entered the food retail sector during the last decade and have set up systems of interface with primary producers which vary in design and practice across chains. There have been concerns about the impact of these interfaces with farmers on farmer livelihoods and the impact of these modern chains on traditional retailers. In India, food retail chains can be viewed as new institutions in agriculture/agribusiness sector as they, by and large, for the first time, provide a new market linkage for the primary producers of fruit and vegetable (F&V) crops in which India ranks second only to China. F&V crops are considered more suitable for smallholders as they are more labour intensive, provide recurring income, have high value markets, offer value addition possibilities and are a mechanism of risk management against field crop failure risk. But, they are more input intensive, require more post-harvest handling, are more perishable and their profitability is dependent on market acceptance. They also suffer from high wastage/rejection, there is no Minimum Support Price (MSP), and local markets are thin. Thus, it is high risk business and requires good market linkage for viability.

In this context, this study by Dr. Sukhpal Singh and Mr. Naresh Singla is very timely and relevant as there is scanty evidence on the issue in India. It examines the procurement channels and practices of major fresh F&V retail chains in India and their impact on the primary producers at the procurement end; assesses the impact of these chains on traditional F&V retailers at the sales end; and examines the possible policy and regulatory provisions to protect and promote livelihoods in the F&V sector in the presence of supermarkets in India. It finds that the farmer interface varies across chains and suffers from many weaknesses in most cases. On the other hand, traditional retailers lost sales varying from 15-30% in different cities though that might not be only due to retail chains. In the light of these findings, the study recommends policy and practice measures for the various stakeholders in food value chains in India. I hope that the study will be extremely useful for policy makers, researchers and corporate agencies interested in meaningful linkages with smallholders in general, and in India, in particular.

September 24, 2010

Vijay Paul Sharma  
Chairperson  
CMA

## Acknowledgements

This study is the result of positive role played by many people around us, more so those in the fruit and vegetable growing and retailing business. It would not have been possible to put it together without their co-operation. Though it may not possible to name them all here, a modest attempt is made below:

We appreciate the assistance rendered by Mr. Brijesh Kumar Mishra, Senior Manager, Sourcing-Food, of the ABRL, Ahmedabad and Shri Sushil Kumar Singh, of the Reliance Fresh, Ahmedabad for providing information about supply chain and retailing operations of their respective chains and providing access to their collection centers and farmers in both the cases. We also appreciate Mr. Singh for showing around and explaining the operations at the DC of the chain in Ahmedabad. We thank Mr. Nalin, and Mr. Pankaj of Prantij CC, ABRL for introducing us to supplying farmers and explaining the logistics and operations of the CC. Mr. Nilesh of Prantij CC of Reliance Fresh was helpful in arranging interviews with farmers. Mr. Mitesh Tanvar helped us in collecting data from farmers in Prantij area and traditional fruit and vegetable retailers in Ahmedabad.

Mr. M.C. Dhananjay, General Manager, Merchandising, ABRL, Bangalore was kind enough to spend time with us in Bangalore and at Malur centre to explain and show us the chain operations from CC to DC to retail outlets. Mr. Mahadevaprasad, CC incharge, Malur was helpful in making contacts with farmers and explaining many issues at the CC level. Mr. Amrut Inamdhari (Vasudha Enterprises and Vegetables), facilitator for ABRL, Belgaum not only explained his company's exact role in vegetable retail chain operations and showed us the CC-cum-DC, but also gave access to the contract and the non-contract vegetable supplying farmers.

We are thankful to Prof. T.N. Venkata Reddy and Prof. G.N. Nagaraja of Department of Agricultural Marketing and Business Management, UAS, Bangalore for sparing students of their department i.e. Ms. Mamatha B.L., and Ms. Roopa Chandsree S. for fieldwork with traditional fruit and vegetable retailers in Bangalore, and Mr. Srikanth N. and Mr. Suresh R. for data collection from farmers in Malur and Bangalore Rural areas.

We are also highly indebted to Mr. Praveen Dwivedi, CEO, Namdhari Retail, for describing the present operations and the strategy of the company in retail and Mr. Sunil G. Awari, General Manager, Namdhari Farm Fresh Private Limited and his colleague Mr. Anand D who showed us the processing centre and explained the procurement operations of the company. Mr. Shiv Kumar, field officer, helped us to interact with the farmers in the villages.

Mr. Jha, store manager at Chandigarh for ITC Choupal Fresh was very kind to explain the strategy and problems in vegetable retail chain management. Col. A S Bajwa, facilitator to ITC Choupal Fresh in Chandigarh, was very helpful in taking us around the

farms in the procurement area and explaining his company's role and problems in vegetable procurement.

Mr. Purandar Datta, CEO of Harra Fresh was kind enough to spare time to explain to us the strategy and operations of the unique home delivery vans of the company in Ahmedabad.

We are thankful to the MoA, GoI for the support provided through CMA, IIMA to conduct this study. We are also grateful to CMA and IIMA for smooth facilitation of the research for this study. We are also thankful to Mr. Harshad Parmar for keying in many parts of this draft report. The review comments on the draft report from IEG, Delhi are gratefully acknowledged.

We sincerely thank the external reviewers of the manuscript - Dr. P K Joshi, Director, NAARM, Hyderabad, Dr. Mathew Joseph, Professor, ICRIER, New Delhi, and Dr. Rashid Sulaiman V, Director, CRISP, Hyderabad who carefully read the report and suggested suitable modifications for making it what it is now. We are especially thankful to Dr. Sulaiman for suggesting very specific editorial and organisational changes to the text for making it concise and easy to read.

Last but not least, we are indebted to all the farmers and the traditional retailers who spared their time to share with us their perceptions and problems/benefits of dealing with the modern retail chains as sellers and competitors respectively. We hope the report will be helpful for developing policy and research perspectives on modern food retail chains and FDI in food retailing and for policy measures to leverage these chains for smallholder benefit and for protecting and promoting the interests of small vegetable and fruit retailers in India.

Sukhpal Singh  
Naresh Singla

## **List of Abbreviations**

ABRL	-	Aditya Birla Retail Limited
ACDI-VOCA	-	Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance
APMC	-	Agricultural Produce Marketing Committee
CC	-	Collection Centre
C&C	-	Cash and Carry
CDF	-	Central Distribution Facility
CMS	-	Cash Management Service
CPC	-	City Processing Centre
CSR	-	Corporate Social Responsibility
DAP	-	Diammonium Phosphate
DC	-	Distribution Centre
DSD	-	Direct Store Delivery
EUREPGAP/ (Globalgap)	-	European Retailers' Association/Global Good Agricultural Practices
F&V	-	Fruit and Vegetable
FAQ	-	Fair Average Quality
FDI	-	Foreign Direct Investment
FFV	-	Fresh Fruit and Vegetable
FMCG	-	Fast Moving Consumer Goods
FPIP	-	Farm Productivity Improvement Program
GA	-	Growers' Association
GAP	-	Good Agricultural Practice
GCA	-	Gross Cropped Area
GDP	-	Gross Domestic Product
GMED	-	Growth-oriented Micro Enterprise Development
GoI	-	Government of India
GoP	-	Government of Punjab
HACCP	-	Hazard Analysis and Critical Control Points
HARC	-	Himalayan Action Research Centre
Hhs	-	Households
HOPCOMS	-	Horticultural Produce Cooperative Marketing Society
HSC	-	Higher Secondary Certificate
HUL	-	Hindustan Unilever Limited
ICRIER	-	Indian Council for Research on International Economic Relations
ICT	-	Information and Communication Technology
ITC	-	Indian Tobacco Company
MDFVL	-	Mother Dairy Fruit and Vegetable Limited
MIS	-	Market Intervention Scheme
MRP	-	Maximum Retail Price

MSP	-	Minimum Support Price
NAFED	-	National Co-operative Agricultural Marketing Federation
NCDC	-	National Co-operative Development Corporation
NDBB	-	National Dairy Development Board
NF	-	Namdhari Fresh
NGC	-	New Generation Co-operative
NGO	-	Non Government Organization
NHM	-	National Horticulture Mission
NHB	-	National Horticulture Board
NSPL	-	Namdhari Seeds Private Limited
PHL	-	Post Harvest Loss/es
RF	-	Reliance Fresh
RIL	-	Reliance Industries Limited
RPG	-	Ram Prasad Goenka
RR/RRL	-	Reliance Retail Limited
SEWA	-	Self Employed Women's Association
SIS	-	Shop-in-Shop
SKU	-	Stock Keeping Unit
SSC	-	Senior Secondary Certificate
TSR	-	Trinethra Super Retail
USAID	-	United States Agency for International Development

## List of Tables

<b>Table</b>	<b>Title</b>	<b>Page</b>
1.1	Organized retail formats in India	4
1.2	Major food supermarket chains in India	5
1.3	Average annual rate of growth in area and production of vegetables	10
1.4	Area and production share (% of total) and yield (tones/ha) of major vegetables in India 1991-2004	11
1.5	Retail chain wise number of farmer interviewed	12
1.6	City-wise traditional F&V retailers surveyed	14
3.1	Profile of RF in Gujarat	40
3.2	ABRL-Retail journey at a glance	47
3.3	ABRL-Retail details	48
3.4	Farmer category and crop-wise distribution of RF and ABRL farmers	55
3.5	Distribution of RF farmers by land holding category (in acres)	57
3.6	Category-wise distribution of leasee/leser RF farmers (acres)	58
3.7	Category-wise distribution of RF farmers by source of irrigation (acres)	59
3.8	Farmer category-wise average family size and structure of farm workers	60
3.9	Category-wise distribution of RF farmers by average off-farm income	60
3.10	Category-wise distribution of RF farmers by cropping pattern and cropping intensity	61
3.11	Cauliflower production costs of RF farmers	62
3.12	Transaction costs of RF farmers in cauliflower	63
3.13	Average proportionate costs and returns of RF farmers in cauliflower	64
3.14	Cabbage production costs of RF farmers	65
3.15	Transaction costs of RF farmers in cabbage	65
3.16	Average proportionate costs and returns of RF farmers in cabbage	66
3.17	Distribution of farmers by reasons for selling to RF (multiple responses)	67
3.18	Distribution of farmers by reasons for selling to <i>mandi</i> (multiple responses)	67
3.19	Month-wise average price (Rs./kg), standard deviation and coefficient of variation in daily price of cauliflower	67
3.20	Month-wise average price (Rs./kg), and coefficient of variation in daily price of cabbage	68
3.21	Crop-wise prices of major vegetables at CC and retail store	69
3.22	Distribution of farmers by problems faced in retail chain linkage	69
3.23	Distribution of farmers by opinion on role of government/policy	70
3.24	Distribution of farmers by opinion on the role of company/buyer	70
3.25	Category-wise distribution of ABRL farmers by land holdings (in acres)	71
3.26	Farmer category and crop-wise irrigation profile of ABRL farmers (area in acres)	73
3.27	Crop-wise distribution of ABRL farmers by ownership of farm machinery	73
3.28	Farmer category and crop-wise family size of ABRL farmers	74
3.29	Farmer category-and crop-wise distribution of ABRL farmers by literacy of	75

	head of household	
3.30	Farmer category and crop-wise distribution of ABRL farmers by average off-farm income details	75
3.31	Farmer category and crop-wise distribution of ABRL farmers by household assets	76
3.32	Farmer category and crop-wise distribution of ABRL farmers by cropping pattern and cropping intensity	78
3.33	Production costs of ABRL farmers in cauliflower (Rs./acre)	79
3.34	Transaction costs of ABRL farmers in cauliflower	80
3.35	Proportional costs and returns of ABRL farmers in cauliflower	81
3.36	Production costs of ABRL farmers in tomato	81
3.37	Transaction costs of ABRL farmers in tomato	82
3.38	Proportional costs and returns of ABRL farmers in tomato	83
3.39	Distribution of farmers by reasons for selling to ABRL(multiple responses)	84
3.40	Distribution of ABRL farmers by problems faced while selling to ABRL	85
3.41	Distribution of ABRL farmers by suggestions on supply chain improvement	85
4.1	Location, category and crop-wise distribution of ABRL and NF farmers	96
4.2	Location and farmer category-wise distribution of ABRL farmers (average in acres)	115
4.3	Farmer category and region-wise average land holding and %age of holdings in Karnataka in 2005-06	115
4.4	Location, farmer category and crop wise distribution of ABRL farmers	116
4.5	Farmer category and crop-wise distribution of ABRL Malur farmers by irrigation profile (average area in acres)	117
4.6	Farmer category and crop-wise distribution of ABRL Malur farmers by ownership of farm machinery	117
4.7	Farmer category and crop-wise family size and structure of ABRL farmers	118
4.8	Farmer category and crop-wise literacy level of ABRL Malur farmers	119
4.9	Farmer category and crop-wise hh asset ownership of ABRL Malur farmers	117
4.10	Farmer category and crop-wise distribution of ABRL farmers by off-farm income	120
4.11	Farmer category-wise cropping pattern of ABRL Malur farmers	121
4.12	Average production costs of ABRL farmers in cauliflower	123
4.13	Location, category and channel-wise transaction costs of ABRL farmers in cauliflower (average per flower and total in Rs.)	125
4.14	Channel-wise %age of cauliflower sold, average price realized and rejection rate in Malur	125
4.15	Location, channel-wise costs and returns of farmers in cauliflower	126
4.16	Channel-wise distribution of Malur farmers	126
4.17	Average production costs of ABRL farmers in tomato (Rs/acre)	127
4.18	Location, category and channel-wise transaction costs of ABRL farmers in Tomato (average per Kg. and total in Rs.)	129
4.19	Location, channel-wise costs and returns of ABRL farmers in tomatoes	129
4.20	Channel wise %age of tomatoes sold, average price realized and rejection rate in Malur	130

4.21	Distribution of farmers by reasons for selling to ABRL Malur (multiple responses)	131
4.22	Distribution of farmers by suggestions on the role of retail chain for supply chain improvement in Malur	132
4.23	Farmer and land holding category-wise distribution of ABRL farmers by ownership of farm machinery in Belgaum	135
4.24	Category-wise cropping pattern and cropping intensity of ABRL Belgaum farmers	136
4.25	Farmer category-wise distribution of NF and Non-NF farmers	143
4.26	Distribution of holdings by category and average land holding in Karnataka in 2005-06	144
4.27	Farmer category and crop-wise land holdings of NF farmers (in acres)	145
4.28	Category-wise distribution of farmers by irrigation profile of NF farmers (average area in acres)	146
4.29	Farmer category and crop-wise distribution of NF and Non-NF farmers by ownership of farm machinery	147
4.30	Category-and crop-wise average family size and structure of NF and Non-NF Farmers	148
4.31	Farmer category and crop-wise distribution of NF farmers by literacy level	149
4.32	Farmer category and crop-wise distribution of NF farmers by off-farm income	150
4.33	Category-wise cropping pattern of NF and Non-NF farmers	151
4.34	Average production cost in <i>bhindi</i> among NF and Non-NF farmers	153
4.35	Average marketing costs of Non-NF farmers in <i>bhindi</i>	154
4.36	Average production and marketing cost in <i>bhindi</i> of NF and Non-NF farmers	154
4.37	Average costs and returns in <i>bhindi</i> in NF and Non-NF farmers	155
4.38	Average production costs in baby corn in NF and Non-NF farmers	157
4.39	Average marketing costs in baby corn in NF and Non-NF farmers	157
4.40	Average production and marketing cost in baby corn in NF and Non-NF farmers	158
4.41	Costs and returns in baby corn in NF and Non-NF farmers	159
4.42	Distribution of farmers by reasons for selling to NF (multiple responses)	160
4.43	Comparison of NF prices and the <i>mandi</i> prices (Rs./kg.)	160
4.44	Distribution of farmers by problems faced in retail chain linkage (multiple responses)	161
4.45	Distribution of farmers by suggestions on the role of retail chain for supply chain improvement	162
5.1	Category and crop-wise distribution of ITC farmers	175
5.2	Land holding category-wise distribution of ITC farmers (in acres)	176
5.3	Farmer- and landholding category-wise distribution of ITC farmers (average in acres)	177
5.4	State-wise landholding pattern of ITC farmers (average in acres)	178
5.5	Category-wise average family and structure of farm workers of ITC farmers	179
5.6	Category-wise distribution of ITC farmers by literacy level of head of hh	179
5.7	Farmer category and landholding category-wise distribution of ITC farmers by average off-farm involvement and income	180
5.8	Category-wise cropping pattern and cropping intensity of ITC farmers	182

5.9	Category-wise production costs of ITC farmers in cauliflower	183
5.10	Category-wise transaction costs of farmers in <i>mandi</i> for cauliflower (Rs./acre)	184
5.11	Category-wise costs and returns of farmers in cauliflower (in Rs.)	184
5.12	Category-wise production costs of ITC farmers in bottle gourd (Rs./acre)	185
5.13	Category and channel-wise transaction costs of farmers in bottle gourd (Rs./acre)	186
5.14	Category-wise costs and returns of ITC farmers in bottle gourd	186
5.15	Distribution of farmers by reasons for selling to ITC (multiple responses)	187
5.16	Distribution of ITC farmers by suggestions on the role of retail chain for supply chain improvement	188
5.17	Category, retail chain and location wise distribution of farmers	192
5.18	Landholding profile of retail chain farmers v/s the state average (acres)	192
5.19	Cropping pattern of retail chain farmers across states ,chains and farmer categories	192
5.20	Location, retail chain, and crop wise costs and returns of farmers (Rs./Kg.)	195
6.1	Procurement price and retail price of HOPCOMS and organized retail outlets (Rs./kg) (as on 02.02.2009)	201
6.2	Category-wise distribution of HOPCOMS, Non-HOPCOMS and South Karnataka farmers ( % of total )	202
6.3	Costs and benefits for HOPCOMS and non-HOPCOMS farmers	202
6.4	Post-harvest losses in banana at different stages of marketing in Karnataka	203
6.5	Channel-wise marketing cost (Rs./kg) and its share in consumers' price in banana	204
6.6	Farmers' net price, margin, efficiency and price spread in banana in Karnataka	204
7.1	City-wise distribution of traditional retailers by product sold (%)	216
7.2	City-wise distribution of traditional retailers by presence of nearest chain outlet (%)	217
7.3	City-wise distribution of traditional retailers by average distance from nearest organized retail outlet and average years of presence of the retail chain outlet	219
7.4	City-wise distribution of traditional retailers by their location (%)	220
7.5	City-wise distribution of traditional retailers by years of presence in business (%)	221
7.6	City-wise distribution of traditional retailers by value of F&Vs handled daily	222
7.7	City-wise distribution of traditional retailers by credit sales	222
7.8	City-wise distribution of traditional retailers by channel-wise quantity of F&V procured	224
7.9	City-wise distribution of traditional retailers by mode of purchase of F&Vs (%)	225
7.10	City-wise distribution of traditional retailers by payment terms and conditions in <i>mandi</i>	226
7.11	City-wise distribution of traditional retailers by % decline in regular customers due to modern retail chains	227
7.12	City-wise distribution of traditional retailers by average footfalls before and after retail chain entry	229
7.13	City-wise distribution of traditional retailers by impact of retail chains on sales	230

	(% of respondents)	
7.14	City-wise change in turnover and income of traditional retailers due to modern retail chains	231
7.15	City-wise distribution of traditional retailers by awareness of any F&V outlets Closed down in last few months	232
7.16	City-wise distribution of traditional retailers by reasons for decline in sales (%) (Ranking: Most important=I and least important=II)	233
7.17	City-wise distribution of traditional retailers on survival strategies 'if sales decline' (%)	234
7.18	City-wise distribution of traditional retailers by steps to neutralize retail chain impact (%)	235
7.19	City-wise distribution of fixed shop owners by facilities and services currently used and planned (in %)	236
7.20	City-wise distribution of traditional retailers who showed willingness to avail of the bank finance	236
7.21	City-wise distribution of traditional retailers by perception of services of organized F&V retail chains (%)	237
7.22	City-wise distribution of traditional retailers by willingness to become franchisee of modern F&V chains (%)	238
7.23	City-wise distribution of traditional retailers by major problems in F&V retailing (%) (multiple responses)	240
7.24	City-wise distribution of traditional retailers by type of assistance from government (%)	241

### List of Figures and Photos

Figure	Title of Figure	Page
2.1	Supply chain cost analysis of cabbage from Chiang Mai (Baht/kg)	19
2.2	Supply chain cost analysis of tomato from Nanjing (Yuan/kg)	20
3.1	Procurement and distribution system of RF in Gujarat	43
3.2	Profile of RF farmers and all farmers in Gujarat	56
3.3	Category wise profile of RF farmers with all farmers in Gujarat	57
3.4	Vegetable area and cropping intensity across farmer categories -RF farmers	62
3.5	Category wise profile of ABRL farmers with all farmers in Gujarat	71
3.6	Profile of ABRL farmers and all farmers in Gujarat	72
3.7	GCA and cropping intensity across ABRL farmer categories	77
4.1	ABRL's process flow chart for F&V	100
4.2	NF value chain	108
4.3	Average size of holding in different parts of Karnataka and the retail chain	113
4.4	Farmer category wise cropping pattern and cropping intensity of ABRL farmers in Kolar, Karnataka	122
4.5	Average prices and rejection in cauliflower across chains at Malur, Kolar	124
4.6	Average prices and rejection rate in tomato across chains at Malur, Kolar	128
4.7	Average size of holding in different parts of Karnataka and ABRL farmers	133
4.8	Category-wise cropping pattern and cropping intensity of ABRL Belgaum farmers	138

4.9	Category wise land holdings of NF, non-NF and all farmers in Karnataka	143
4.10	Land holdings of NF, Non-NF, and all farmers in Karnataka	144
4.11	Category wise average GCA and cropping intensity of NF and non-NF farmers	151
4.12	Profile of farmers in ABRL and NF retail channels in Karnataka	162
5.1	ITC Choupal Fresh procurement and sales system	167
5.2	Choupal Fresh vegetable procurement system in Punjab/Haryana	172
5.3	Average size of holding in the retail chain and in Punjab and Haryana	178
5.4	Cropping pattern across ITC farmer categories	181
5.5	State-wise procurement models of various retail chains	191
6.1	HOPCOMS Operations in Karnataka	198
7.1	Location wise distribution of traditional retailers by product sold (% of total)	216
7.2	City-wise distribution of traditional retailers by % of regular customers before and after the modern retail chain entry	228
7.3	City-wise distribution of traditional retailers by average footfalls before and after modern retail chain entry	229
7.4	City-wise distribution of traditional retailers by % decline in turnover and net income after the entry of modern retail chains	231
Photo	Title of Photo	Page
2.1	Modern retail chain outlet and traditional vendor face-to-face	36
3.1	A view of RF and ABRL's More stores in Ahmedabad	41
3.2	Cauliflower and cabbage grading and processing at DC in Ahmedabad	43
3.3	Delivery and grading of vegetables at the CC in Prantij	44
3.4	Graded vegetables at CC	45
3.5	Grading of vegetables at CC	51
3.6	FPIP pass book for the farmer	52
3.7	Vegetables being brought the CC	54
3.8	Delivery of vegetables by farmers at CC	64
4.1	A view of retail outlets of ABRL's More and Reliance Fresh in Bangalore	97
4.2	Defects in cauliflower and tomato	101
4.3	Grading of tomato at ABRL CC at Malur	105
4.4	Arrival of cauliflower and tomato in Belgaum F&V market	105
4.5	NF's retail outlet and salad bar in Bangalore	107
4.6	Baby corn processing at NF at Bidadi	110
4.7	A NF contract <i>bhindi</i> farm	152
4.8	A NF baby corn farmer harvesting baby corn for delivery to NF	156
5.1	The ITC Choupal Fresh Store in Chandigarh	168
5.2	Graded vegetables being procured and radish in crates after grading	174
5.3	A migrant leasee farmer (left) and a local leasee farmer with the consolidator at the farm (right)	176
6.1	A retail outlet of HOPCOMS in Bangalore	200
6.2	Mother Dairy F&V outlets in Delhi	208
6.3	A view of Mother Dairy (safal) outlet in Bangalore	208
7.1	A fixed vegetable shopkeeper and a mobile vegetable vendor in Ahmedabad	217
7.2	A fixed traditional F&V market in Ahmedabad	218

7.3	Roadside fixed vegetable retailers in Bangalore and Belgaum	221
7.4	Display of vegetables at roadside fixed vending outlets	222
7.5	An informal private fixed weekly vegetable market in Punjab	225

### **List of Boxes**

3.1 Spencer's Retail	49
3.2 Comparative customer perception of quality of retailing of different types of retail outlets	50
3.3 Spencer's farmer speak	84
4.1 Heritage's Fresh@	98
5.1 Green Mart	169
6.1. KNIDS Green in Bihar	212
7.1 Traditional vendors and modern chains	232
8.1 Producer Companies	262

## **Chapter 1**

### **Introduction**

#### **1.1 Food Retailing in India**

Globalisation and liberalisation can have a major impact on the poor through their influence on the agricultural sector terms of trade, availability and cost of inputs, and new investments in the agribusiness sector, including food retail. The role and influence of external initiatives in food production and trade will, as an institutional mechanism, determine the exact impact of globalisation on the poor producers and workers involved in food production and its trade.

Retailing presently contributes about 10% of India's Gross Domestic Product (GDP) and 6-7 % of employment. The retail industry is the second largest employer in India, next to the farming sector. The retail industry provided employment to about 40 million people (rural urban split was about 60-40) of which about 0.5 million were employed in the organized retail sector (all in urban areas). The value of organized retail is expected to grow to Rs 1,000 billion by 2011 with its share going up from 3% to 15-20%. Of the proposed investment (\$25 billion), 60-65% would go in setting up the supply chain for food and groceries (Kalhan, 2007). From the demand side, major drivers of growth in the retail sector and its constituents have been the changing age structure of the Indian population, rising incomes, increasing number of employed women, changing food habits (increasing popularity of convenience and western foods) and growing health and food quality consciousness among food buyers and consumers. The growth of large food retailing outlets has contributed to this change from the supply side (Cygnus, 2007).

The food retailing industry has annual sales of about \$ 176 billion, a little over half of total retail sales of \$ 330 billion. Over the past few years, the industry had grown at about 10% a year, exceeding the GDP growth rate. It was also estimated that food retailing sector accounted for slightly over 50% of the overall employment, in line with its revenue proportional to the total retail revenue. Food retail outlets account for one third of all retail outlets and 63% of total retail sales. The traditional food retail industry comprised of two basic formats: *kirana* (mom and pop) stores and pushcart vendors. The *kirana* stores were (typically) family-owned, small in size (100 sq ft and above), carry a limited number of

items, and are run mostly by family members, supplemented with some hired help. There were approximately 12 million such outlets in India with half of them involved in food retailing. But, only 4% of retail outlets are bigger than 500 sq. ft. In Mumbai, excluding hawkers, 52% had shop size less than 300 sq ft. The most frequent shops were shops less than 200 sq ft. 82% of the shops had an inventory of less than Rs 10 lakh. 60% had no employees other than family members. The average employment per shop was 3.5 persons; the most frequent type of shop had two family members (Kalhan, 2007).

In Vadodara, where about 3.54% of the population was directly involved in vending and approximately 10% of the total population was dependent on vending, 42% of the vendors sold non-processed food items including fruits and vegetables (F&Vs). About 54% vendors were semi-static which gave an indication that ‘timing of operation of vendors’ was an important consideration for space allocation (Dalwadi, 2010). In Ludhiana in Punjab, most of the migrant vegetable sellers were between the age group of 20 and 40 years. About 54% migrant vegetable sellers were Scheduled Castes (SC). The family size of the migrant vegetable sellers was large but number of earners in their families was small. Majority of these sellers were land owners at their native places. Only 2% migrant vegetable sellers had permanent shops while the rest had temporary shelter, roadside push cart (*rehri*) or hawked to sell F&Vs. The average monthly income and saving of the sellers was Rs. 3920 and Rs. 2025 respectively (Bhagat and Sidhu, 2008). The business of the pushcart vendors was also affected by the level of petty corruption embedded in the local policemen’s or municipal inspector’s *hafta* (weekly bribe) besides competition from modern retail (Kumar et al, 2008a). Being unorganized, the loss of income incurred by road side vendors due to bribes, confiscation and destruction of goods amounts to Rs 500 crore in Delhi, Rs 900 crore in Mumbai and Rs 80 crore in Ahmedabad (Das, 2006).

The organized retail provides employment to 1.25% of the total retail workforce and the share of the organized retail in total retail being 4%, the productivity per person employed in organized retail is 65-70% greater than the productivity per person in unorganized retail. Thus, it would appear that the organized retail would lead to massive unemployment.. The organized food retailers deployed a number of formats ranging from gigantic hypermarkets at

one end to the no-frills discount stores at other end. They were distinguished by size, number of items carried, pricing strategies and customer segments targeted among others. The large organized retailers also offered private label products which were generally priced lower (up to 30%) and had higher margins compared to branded products (about 20% compared with 15% for branded products) (Kumar et al, 2008a).

*Nilgiris*, established in 1905 as a dairy farm near Ootacamund in South India was perhaps the first organised supermarket in India which opened another store in Bangalore in 1936 and the next one at Erode (Tamil Nadu) in 1962. It initially focused on dairy products, bakery and chocolates, but in 1945 expanded its range of products to include grocery and other food items. Now, it has more than 90 stores under the brand name “*Nilgiris 1905*”. Another first perishable food retail chain also had links with dairy product retailing. *Safal*, established in 1988 by the National *Dairy* Development Board (NDDB), sold fresh fruits and vegetables (FFVs) from Mother Dairy outlets and was the first organised retailing venture for F&Vs in India. The only private corporate retailer before the 2000s was the RPG Group which started with its first outlet in Chennai in 1996 under the banner of “Food World” (Sulaiman et al, 2010).

In recent years, a number of corporate players have entered the organized retail sector with various formats (table 1.1), including many in food retailing with specific companies and brands like Spencer’s, Reliance Retail’s Reliance Fresh (RF), Aditya Birla Retail Limited (ABRL)’s More, Namdhari Seeds Pvt. Limited (NSPL)’s Namdahri Fresh, and ITC’s Choupal Fresh (table 1.2).

These food retail chains have attempted many changes in the supply chain management and logistics through the use of quasi-formal and formal contracts to ensure timely delivery of products with desired quality attributes. Therefore, they can be viewed as new institutional mechanisms for linking farmers with modern markets and improving supply chain efficiency and farmer livelihoods. At present, Foreign Direct Investment (FDI) in retailing is allowed only in single brand chains, that too only up to 51% of total equity. Therefore, most of the

supermarket growth in India has been driven by the domestic players unlike in many other developing countries of Asia and Latin America.

**Table 1.1: Organized retail formats in India**

Format	Organized retail chains	Size	Population targeted	Pricing	Items carried
Hypermarkets	RPG's Giant, Pantaloons' Big Bazaar, Trent's Star India Bazaar	25,000-50,000 sq ft	Middle income group	Lower than MRP	Most categories
Supermarkets	Food World, Food Bazaar (Pantaloons) Nilgris	3,000-5,000 sq ft	Everyone	MRP	Processed foods and groceries mainly
Discount Stores	Margin Free and Apna Bazaar	Varies but less than 3,000 sq ft	Middle income group	Everyday low price (lowest)	Processed foods and groceries mainly
Convenience Stores	Trumart, Spencer's Daily, Vishal	Varies	Everyone	MRP	Varies-but specialized in each store

Source: Kumar et al, 2008a.

## 1.2 Context and issues

Three major issues of impact of supermarket on local economies include: market concentration and, therefore, producer and consumer interest; downward pressure on producer prices with higher costs and responsibilities; exclusion of small producers and impact on small local retailers. The procurement practices of supermarkets and large processors have a huge impact on farmers and present them with an important challenge. Through their coordinating institutions and mechanisms such as contracts, private standards, sourcing networks and distribution centres, they are reformulating the rules of the game for farmers and first-stage processors (Reardon and Berdegue, 2002). There is also supplier farmer rationalization due to the larger supplier preference of big retailers (Ghezan et al, 2002; Farina et al, 2005). Though supermarkets initially offered higher prices to producers than those offered by traditional channels, but farmers incurred extra costs like processing

and packaging, marketing, transport, and other transaction costs unlike their counterparts in traditional channels (Cadilhon et al, 2006).

**Table 1.2: Major food supermarket chains in India**

Super-market chain	No. of stores in India (and Bangalore)	Owned by	Parent ownership structure
Reliance Fresh	886 (47)	A division of Reliance Industries Ltd.	A highly diversified conglomerate founded by Ambani family and now owned by Mukesh Ambani.
More	655 (61)	A division of Aditya Birla Ltd.	A highly diversified conglomerate founded by the Birla Group. Entered retail with major acquisition and takeovers of 275 Trinethra and 68 Fabmall in South India
Spencer's	241 (21)	A division of RPG Ltd.	A highly diversified conglomerate funded by the Goenka family. Entered retailing during the 1990s.
Fresh@	75 (20)	A division of Heritage Foods Ltd.	A dairy and food processing company funded by the Naidu family of Hyderabad. Diversified into retailing. As of 2009, only in South India.
Foodworld	67 (42)	51% owned by a private consortium of Indian investment banking interests; 49% by Dairy Farm International	Dairy Farm International is a Hong Kong retail giant. Until 2005, the 51% Indian interest was held by RPG and managed alongside Spencer's. As of 2009, only in South India
Namdhari Fresh	25(18)	Namdhari Seeds Group	High end stores with salad bar, carry organic range also
ITC Choupal Fresh	8 outlets in Hyderabad, Pune and Chandigarh	ITC Group of Companies	Focus on fruits and vegetables (F&V) unlike other stores

Source: Pritchard et al, 2010 and primary data.

An important issue in globally oriented or domestic value chains is whether small producers can participate and benefit from these chains and markets – which is crucial for their survival

as traditional marketing channels weaken or disappear (Pingali and Khwaja, 2004). Small farmers have advantages for integrating with the supply chains, as they can supply better quality with intensive management attention to each output unit. However, they lack the size to benefit from economies of scale. The net effect of integrated markets on small farmers depends on the nature of the commodity and its market, as well as the ability of small farmers to co-ordinate marketing activities (Barghouti et al, 2004). In this context, smallholder farmers in India face a number of challenges and research is needed to design supportive policies and institutions.

Most of the F&V retail chains can be considered as buyer-driven value chains as the buyers dictate and specify quality standards which suppliers have to meet, if they want to sell to these chains. These chains also create value on the front end (market) by promising quality, range of products, freshness, and lower prices of F&Vs besides more conducive shopping environment. An important policy question in agro-value chains is how to devise mechanism of regulation that can make upgrading opportunities more socially broad based and how to devise way of ensuring that the rewards from meeting these opportunities become more predictable (Gibbon, 2001) as it has been found that upgrading of the local suppliers is affected by the type/mode of governance exercised in the chain (Giuliani et al, 2005). Upgrading means enhancing the relative position of a firm, which can be achieved in different areas i.e. processes, (doing things better e.g. better quality production which is more marketable), products (making better things e.g. new types of vegetables like exotics or organic), moving into higher stages of value addition along the chain like design or marketing (functional upgrading) i.e. pre-packing retail packs for the chain stores) or chain upgrading i.e. moving into entirely new businesses or directly selling to buyers independently (Schmitz and Knorringa, 2000). Upgrading determines the nature and coverage of the flow of gains through the chains. The malpractices or poor governance hampers upgrading of suppliers into better producers and into processing and marketing (Stichele et al, 2006). Governance which is central to value chain analysis can be defined as non-market co-ordination of economic activities. Governance is nothing but the ability of a firm in the chain to influence or determine the activities of other firms in the chain. This can

include defining the products to be produced by suppliers and specified processes and standards to be used (Gibbon, 2001).

Further, upgrading potential depends on which stage the supplier is – incipient or advanced; whether chain is quality or price driven; and whether sourcing is direct or indirect. Though buyers keep supporting suppliers even in advanced stage but, intensity may come down and a buyer may not assist in non-production skills. Similarly, quality driven chains are more conducive to mutual learning and improvements and loose sourcing chains have more gaps into which local producers can grow, and therefore, local upgrading is more likely though direct sourcing can give more regular market access and support capability building for suppliers (Schmitz and Knorringa, 2000).

On the other hand, there are also issues of loss of employment and livelihoods due to supermarket expansion. In supermarket stores, low wages, job cuts, long and irregular working hours, and non-contract workers are the abuses reported which are resorted to as strategies to cut labour costs. In Vietnam, supermarket Metro Cash & Carry employed 1.2 workers per tonne of tomatoes sold compared with 2.9 persons employed by traditional wholesale channel for the same quantity sold. This can be seen as loss of employment due to supermarket retail chains or higher efficiency of workers as Metro produce was ‘ready to retail’ when it arrived from suppliers unlike the wholesale channel. Thus, whereas supermarket chains can lead to new and better employment generation, improvement in food quality, and lower consumer prices and provide new avenues for agricultural development, the negative impacts include exclusion and squeezing out of small producers out of these chains due to high cost and risky investments needed, and decline of the traditional wholesale markets which may be important for small producers (Cadilhon et al, 2006). So far as impact on local retailers (neighbourhood stores) is concerned, the spread of supermarkets led to 14% reduction in the share of ‘mom and pop’ stores in Thailand which was cornered by foreign supermarket chains within four years of their operations (Stichele et. al., 2006).

### **1.3 The Indian Context**

Indian farming is dominated by smallholders. India's marginal, small and semi-medium holdings of less than four hectares together comprise 95% of the total holdings. The average size of operational farm holdings in India has declined from 2.28 hectares in 1971 to 1.57 hectares in 1991, 1.41 hectares in 1995-96 and further to 1.06 hectares in 2003. India is the second largest producer of fruits as well as vegetables in the world, and the National Horticulture Mission (NHM) aims to double horticultural production by 2012. In India, 15.3% of farmers grow vegetables and 4.6% grow fruits. Nearly 16% of small and marginal farmers grow vegetables compared with 14.8% and 10.5% of medium and large farmers respectively. Future growth in agriculture, it is argued, can only be achieved by increase in yields of traditional crops or by transition to high value crops like F&V. The changing consumer trends and rising consumer income, especially in the non-farm sector and in urban areas, are leading to higher demand for high value crops such as F&Vs which can help primary producers diversify their production away from cereals. The major challenge is to include marginal and small, even medium farmers, in this growth (Misra, 2009a).

Small producers have many competitive advantages like lower cost due to labour abundance, higher flexibility in their working capability, availability of family labour, and plenty of traditional knowledge which can be harnessed for better productivity. The only threats they face are: standardisation of products in global and national markets, and large volume requirements of modern markets. But, there are opportunities in organic, fair, and ethical trade markets which are particularly suited for small producers and offer high prices (Harper, 2009). The lack of access to insurance and credit markets makes small producers vulnerable and they reduce their risk by choosing low risk activities or technologies which have low average return.

On the other hand, corporate agencies also stand to gain from small producer linkage when it is not just 'profits', but also 'people' and 'planet' which have become the bottom lines of the companies as part of the 'triple bottomline'. The private agencies can leverage the smallholder linkage by way of political and social legitimacy and even more efficient operations as small producers are lower cost than other farmers (due to their family labour

intensity and various types of support provided to them by state and development agencies) or corporate farms or market based exchanges, and easier to manage. But, typically, farmers complain of lack of markets for their produce and processors or exporters or supermarket retailers complain of lack of adequate supplies of quality produce. This marketing paradox is present because many times buyers do not reach out to explore new suppliers and farmers lack understanding of markets and ability to identify new markets and to take advantage of such opportunity with value addition activities like cleaning, sorting, grading, packaging and primary processing (Shepherd, 2007).

Linking small primary producers with markets has been identified as one of the major issues in policy and practice in improving livelihoods for millions of poor in the developing world. More recently, there have been many corporate attempts at linking farmers with markets including those by food retail chains in India. Retail chains can be viewed as new institutions in agriculture/agribusiness sector as they, by and large, for the first time, provide a new market linkage for the primary producers of F&Vs which is characterised by use of Information and Communication Technology (ICT) (mobile phones), new quality standards and cash transactions besides direct sale of produce. That is why it is called ‘contact farming’ model which is a variant of contract farming model and differs from contract farming only by the lack of formal commitment to buy and sell. Thus, retail chains bring in quality culture, instant demands and supply and, more commercial nature of production and marketing at the farmer level.

FFV produce in India is marketed mostly either through regulated Agricultural Produce Marketing Committee (APMC) markets or totally unregulated local F&V markets. Marketing through these traditional channels is characterized by very little attention to grading, sorting and storage, weak regulation, poor handling during loading, unloading and transport resulting in loss of 30–40% of production. Supply chains for FFVs tend to be multilayered which has implications for the farmers’ share in the final consumer price; the quality of produce due to multiple handling; and for the marketing cost as the various agents add their costs. In contrast to fragmented supply chains in traditional market, supply chains developed by organized retail chains are supposed to be well coordinated (Punjabi and Sardana, 2006). F&V crops

are more suitable for smallholders as they are more labour intensive, provide recurring income, have high value markets (domestic and export), offer value addition possibilities and are a mechanism of risk management against field crop failure risk. But, they are more input intensive, require more post-harvest handling, are more perishable and their profitability is dependent on market (i.e. quality/standards which are changing rapidly), besides the fact that fruit crops also have long gestation period. They also suffer from high wastage/rejection, there is no Minimum Support Price (MSP) or alternative protection against price risk, and local markets are thin. Thus, it is high risk business and requires good market linkage for viability.

China accounts for 36% of world production of FFVs and India comes second with 9.4% with others being Brazil, Mexico, Turkey and Egypt, with all of them together making for 55% of world FFV production (Stichele et al, 2005). India accounts for 10% of fruits and 13% of vegetables produced in the world. In India, vegetables have been growing at about 4% per annum in production and 2% in area since 1990 (table 1.3).

**Table 1.3: Average annual rate of growth in area and production of vegetables**

Period	Area	Production
1990-95	-1.00	4.67
1995-00	3.15	6.22
2000-04	1.82	2.08
1990-04	2.10	3.95

Source: Mittal, 2007.

India ranks second in the production of cabbage, cauliflower and pumpkin and gourd and 6<sup>th</sup> in tomato (Mittal, 2007). India produces about 4.2 million tonnes of cabbage (about 9% of world total) and 5 million tonnes of cauliflower annually which makes it the world's second largest producer of cauliflower with 29% share after China's 44% in 2004 (Boriss et al, 2006). Cabbage and cauliflower jointly contribute about 11% of India's total vegetable production. Individually, cabbage accounts for 6% of total vegetable production (Kumar et al, 2008) (table 1.4).

In India, the production of tomato grew at annual compound rate of 6.05% and area at 4.94%. Aggregate Post Harvest Loss (PHL) of tomato in Karnataka was at around 19% of the

harvested produce. Of this, about 50% loss was at farmer's field, mainly due to insect-pest attack, diseases, over ripening and crack in fruits. The PHL at market level varied between 4 to 4.5% due to transit loss depending on the location of market. At the retail level, PHL stood at 5% due to secondary infection from diseased fruits and physical injury due to multiple handling (Gajana et al, 2006). In tomato, the quality parameters influencing price of tomato in Karnataka included bigger circumference, higher moisture content and higher thickness of pulp of tomato which fetched higher price in the market (Murthy and Wader, 2007). In West Bengal, the aggregate PHL at farm level on weight and number basis in cabbage were 3.4% and 6.1% respectively and 5.0% and 7.9% respectively in cauliflower. Gross and net losses were estimated to be 3.37% and 2.01% in cabbage and 5.02% and 2.83% in cauliflower respectively (Kumar et al, 2008).

**Table 1.4: Area (A) and production (P) share (% of total ) and yield (tonnes/hac) of major vegetables in India, 1991-2004**

Vegetable> Year/s	Cabbage	Cauliflower	Okra	Tomato	Pumpkin and gourd
1991 A	3.17	3.63	3.97	5.17	5.54
	4.73	5.12	3.22	7.25	5.04
1995 A	4.09	4.12	8.07	6.67	6.28
	5.39	3.46	5.63	7.60	4.47
2000 A	4.09	4.12	8.07	6.67	6.28
	5.39	3.46	5.63	7.60	4.47
2004 A	3.93	4.10	5.61	7.36	5.76
	5.87	5.00	3.57	7.72	3.73
<b>Yield</b> 1993	15.5	15.2	10.3	14.3	9.7
	21.7	18.5	10.3	16.2	9.7

Source: Mittal, 2007.

Although APMC regulated markets in north Karnataka had many notified commodities but dealt with a few commodities only. Farmers and commission agents were dissatisfied with the composition of membership of the regulated markets. Some of the APMC lacked in basic amenities like labour house and weighbridge. Further, malpractices prevailed in weighing of produce which included: unauthorized and faulty weight, over weighing, arbitrary deductions in weighment and absence of uniform weighment charges. The small number of weighmen resulted into long wait for farmers to dispose off their produce. Paying different price for the same grade was also reported by some of the farmers (Vaikunthe, 2000).

## **1.4 Objectives**

In this context of global experiences of food retail chain practices and impacts, the present study:

1. Explores the procurement channels and practices of major FFV retail chains in India and their impact on the primary producers at the procurement end;
2. Assesses the likely impact of these chains on traditional F&V retailers at the sales end in India; and
3. Examines the possible policy and regulatory provisions to protect and promote livelihoods in the F&V sector in the presence of supermarkets in India.

## **1.5 Methodology**

The study was initiated with review of relevant literature on the subject and secondary data analysis. The study examines the issues of procurement and sales by retail supermarket chains by examining a few of them across North, West and South India where all the major players exist. The locations for primary study include Ahmedabad (western region), Chandigarh (northern region), and Bangalore and Belgaum (southern region). These cities gave access to all the major players like Reliance, ITC, Spencer's, Namdhari Fresh (hererafter NF), and More (of ABRL). 10-15 supplying farmers in each vegetable of the selected two in all cases and thus, at least 20 farmers in each selected chain were interviewed (table 1.5).

**Table 1.5: Retail chain wise number of farmer interviewed**

<b>State &gt;</b>	<b>Gujarat</b>		<b>Karnataka</b>			<b>Punjab/ Haryana</b>
<b>Retail chain&gt;</b>	<b>RF</b>	<b>ABRL</b>	<b>ABRL, Malur</b>	<b>ABRL, Belgaum</b>	<b>NF</b>	<b>ITC</b>
No. of farmers interviewed	28	22	25	19	33	22

The chains interviewed included ABRL's More in Kolar and Belgaum in Karnataka and Sabarkantha in Gujarat, RF in Sabarkantha in Gujarat, NF in Bangalore Rural in Karnataka and ITC Choupal Fresh in Mohali in Punjab and Ambala in Haryana. The farmers survey was

conducted in Malur in Kolar district in Karnataka in case of ABRL's More and Prantiz in Sabarkantha district of Gujarat for RF. For NF, Bangalore Rural in Karnataka and in case of ITC Choupal Fresh, Lalru in Mohali district of Punjab and Panjokhra Sahib in Ambala district of Haryana were the locations of farmer survey. The quantitative and qualitative information about chain operations was obtained from interaction with supply chain managers and front end mangers of all the retail chains. The aspects of impact of modern retail chains were studied through farmer and traditional retailer survey in respective locations around the collection centres and in the cities of retail chain outlets respectively. The Collection Centres (CCs) and Distribution Centres (DCs) of all the chains were visited and operations were observed and process of collection, processing and dispatch of vegetables was observed in case. Supplying farmers were interviewed at the CC and/or on their farms/houses in villages during early 2009.

The cities of Ahmedabad, Bangalore, and Chandigarh each was divided into four zones: North, East, West and South. About 15 traditional retailers each were surveyed in each zone in each city making 60 such responses in each city in early 2009. The four zones by and large represented different segments of the market and coverage of all four types of retailers-shops, roadside fixed, roadside-cum-home delivery and only home delivery, ensured that all modes of selling to different segments of buyers are covered. Though it was intended to do an equal number of all four categories but the first two categories – fixed shop owners and road side fixed shop traditional retailers each accounted for almost 1/3 of the total and the remaining two categories about 20% and 15% each, the latter being home delivery retailers (table 1.6).

Not only traditional retailers' profiles were explored, but also, their perceptions of the impact of modern retail outlets were explored and verified with quantitative assessment of the decline in footfalls and sales. The analysis of the farmers and traditional retailer data was carried out with simple statistical tools and techniques supplemented by qualitative observations and field based insights into the operations and impacts of vegetable retail chains on farmers and traditional retailers.

**Table 1.6: City-wise traditional F&V retailers surveyed**

<b>City&gt; Type of retailer</b>	<b>Ahmedabad</b>	<b>Bangalore</b>	<b>Chandigarh</b>
Fixed shop owner	21(33.3)	17(28.3)	21(34.4)
Roadside fixed	19 (30.2)	22 (36.7)	16(26.2)
Home delivery	10 (15.9)	7(11.7)	12(19.7)
Roadside -cum-home delivery	13(20.6)	14(23.3)	12(19.7)
All	63(100)	60(100)	61 (100)

Note: Figures in brackets are % share in total.

## **1.6 Chapterisation and scope**

Chapter 2 reviews the global and the Indian literature on profile and operations of the F&V retail chains and their impacts on different stakeholders in the chain especially farmers and competing traditional retailers. Chapter 3 presents a case study of two retail chains in Gujarat involved in vegetable procurement and retailing around Ahmedabad and makes a comparative assessment of their operations and farmer level performance. The operations and farmer interface of two retail chains in Karnataka is attempted in chapter 4 which profiles their operations and analyses the farmer impact and problems encountered by growers while dealing with these chains. Chapter 5 makes a case study of the only retail chain in Punjab/Haryana procuring from farmers through a facilitator. Chapter 6 present the cases of two non-private vegetable retail chains (HOPCOMS and MDFVL's SAFAL) and their smallholder interface in Karnataka, and Uttarakhand and Haryana respectively based on secondary sources of data and analysis. Chapter 7 exmines the impacts of the modern vegetable retail chains on the traditional retailers and their perception of the same in cities of Ahmedabad, Bangalore and Chandigarh. Chapter 8 summarises the main findings of the study and proposes strategies and policy measures to leverage retail chains for small producer and traditional retailer benefits.

Though important players, but the study has not examined the organised wholesale suppliers like Adani Agri Fresh, Radhakrishna Foodland, Tata Khet Se, and Trikaya Agriculture supplying to some of the retail chains per se, other than as a link for the supermarkets, and the export oriented players in FFV sector. It has also not examined the emerging wholesale

‘cash and carry’ players like Metro, Walmart as they were in nascent stage so far their farmer linkage is concerned and are not supposed to retail products including F&V. Further, the study has also not carried out the consumer or retail buyer survey and has relied on the traditional retailer survey to understand this aspect, to the extent possible.

## **Chapter 2**

### **Food Retail Chains and Small Producers and Traditional Retailers- A review of evidence and issues**

Agricultural sector is crucial to poverty reduction and development in developing countries including India. Linking primary producers with global and national markets through corporate agribusiness is seen as one of the ways to improve rural livelihoods. But, given smallholder dominance of farming in India, it is important to consider the implications of corporate linkage for smaller links involved/proposed to be involved in the chains i.e. primary producers and workers, so that the process is not exclusionary in nature, and becomes a win-win situation for most of the participants in the supply/value chain. This chapter reviews the global and Indian evidence on the small producer interface of food (fresh) retail chains and their impacts on traditional retailers in various situations to draw out issues of policy and practice.

#### **2.1 Retail chains and primary producers-a review**

##### *2.1.1 Procurement*

In Switzerland, supermarkets tended to build partnerships with intermediate companies or external collective organizations that had the responsibility for organizing the commercial transactions with the producers. The Valais region which produced 32% of table apples, 50% of table pears, 100% of apricots of national production was characterized by the presence of a large number of intermediates (packers, wholesalers) and a poorly organized supply chain with no marketing plan and quality management. However, in four years, under the aegis of Migros and Coop, cooperatives and independent packers built two regional commercial groups: La Montagne and Alpfruits. Both invested in quality management and quality control to ensure food safety and quality, and developed a commercial strategy to offer “normed” products and better services to the supermarkets (Reviron and Chappuis, 2005). The supermarkets in Guatemala procured from a few specialized wholesalers that were partly “dedicated” to them. The specialized wholesalers supplied the commercial grade quality tomatoes after sorting and selecting and boxing, to the chain’s DC, and supplied other grades to traditional retailers. The chains procured through this system in order to: (1) assure quality and consistency of delivery of product year-round, which the dedicated wholesalers could do

because they had a large network of agents spread over several agro-ecological zones; (2) had a “one-stop shop” where they could source several types of produce at once, (3) reduction in coordination costs as they had to deal with few intermediaries (Hernandez et al, 2007).

In Mexico, supermarkets procured directly from growers through their own distribution centres and contractual arrangements with growers. These centres provided economies of scale, reduced the costs of intermediation, added value by packing produce and reducing losses in handling by transporting through specialized refrigerated trucks, and provided a more efficient inventory management system via bar-code scanners. Supermarkets imposed their own quality standards and practices for FFV procurement which included: (1) delivery in consistent volumes and quality (consistency in terms of colour and size); (2) deliveries of moderate volumes but continuous throughout the year; (3) acceptance of only up to 10% of damaged produce; (4) refrigerated transport for the produce; (5) product to be packed in cardboard boxes rather than loose; (6) receipt of produce only before noon; (7) payment only after 8 to 45 days after delivery-depending on the product; (8) discount to cover the supermarket’s putting the product on sale (promotion). But, still supermarkets bought 10%-100% of FFVs via the CEDAs (local F&V markets) across products and supermarkets. The quality requirements imposed for FFVs were similar to the standards that were required to export FFVs. These led to the emergence of new wholesalers-cum-growers-cum-exporters who not only displaced the traditional wholesalers but also guaranteed quality, appearance/presentation, and delivered the produce all round the year. There were new FFV wholesalers in the Mexico City CEDA, who supplied the supermarket chains direct from the growing areas, without having to pass physically through either the CEDA or the distribution centre (Schwentesius and Go’mez, 2002).

The supply chains of five supermarkets for FFVs in Africa and Asia i.e. Alice in South Africa, TOPS in Thailand, Thai Fresh United in Thailand, Hortico in Zimbabwe and Homegrown in Kenya were shorter, condensed, streamlined and involved direct delivery to centralized distribution centers in contrast with traditional multilevel and fragmented marketing systems. The supermarkets contracts with the producers varied from unwritten (in

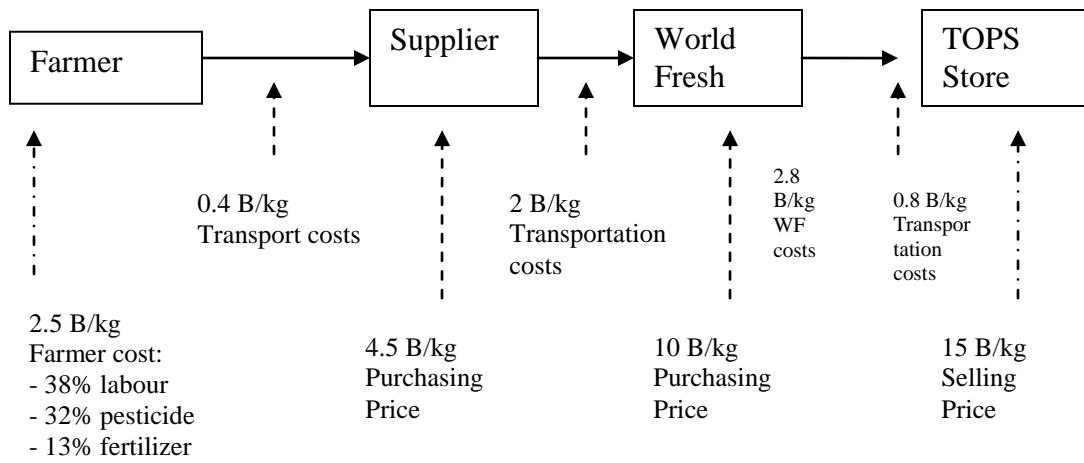
case of Hortico), to contracts with weekly price negotiations in case of Alice; and price and volume arrangements per cropping cycle in the case of Thai Fresh United. Producers performing more functions as wholesalers had been eliminated. Small producers were compliant as a result of public and private partnerships that included significant support to small suppliers in each of the five cases (Boselie et al, 2003).

SPAR in South Africa procured fresh produce from the surrounding area, as compared to the centralized fresh product procurement and distributions systems of local competitors and other major retailer groups in South Africa. Commercial farmers supplied most (70%) of the store's needs for fresh produce. Emerging farmers accounted for the rest though they did not have any cold chain facilities, but still supermarket procured from the small-scale farmers as they made deliveries in frequent small volumes and fresh produce moved fast in the store. The pricing of produce was determined through negotiations that were based on market prices, quality delivered and the supply and demand conditions prevailing in the market (Louw et al, 2006).

TOPS in Thailand had established a system of preferred suppliers around the 'World Fresh' central distribution system (fig. 2.1). These procurement channels were not uniform and highly variable. Five alternative procurement channels used by the World Fresh were:

1. direct purchase from the farmers;
2. wholesaler linked to farmers that deliver products;
3. local supplying companies that buy products at wholesale market;
4. importing products from abroad; and
5. direct purchase at wholesale market.

The highest average value was delivered through wholesalers (US\$115,000 per month), while quantities purchased directly from farmers were negligible. Five large vegetable suppliers delivered around 60% of the total turnover, while approximately 20% of turnover was delivered by 57% of small suppliers. This implied a marketing chain where many small farmers were involved, but dominated by a few large corporate suppliers.

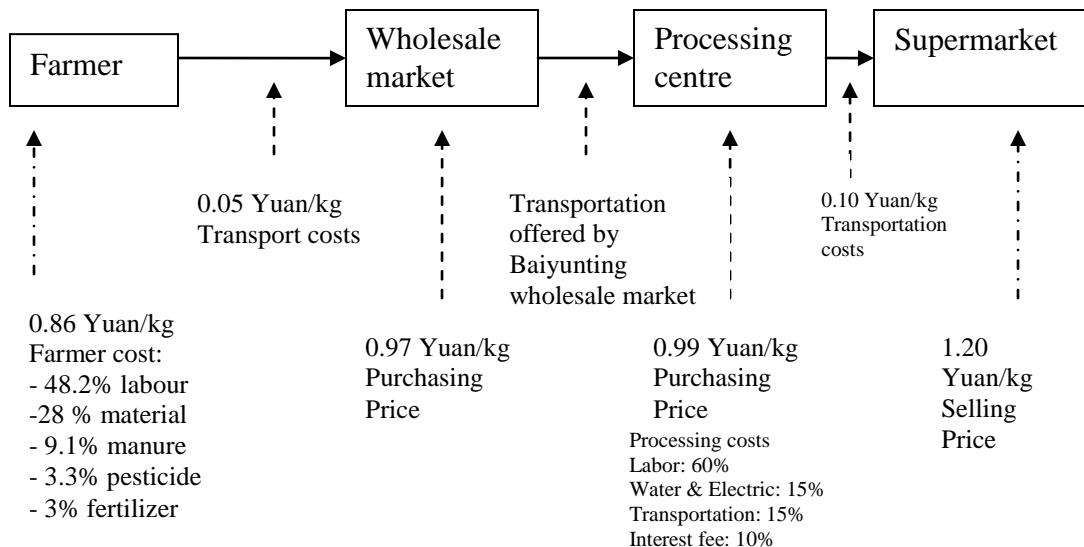


**Figure 2.1: Supply chain cost analysis of cabbage from Chiang Mai (Baht/kg)**

Source: Ruben et al, 2007.

Fixed costs for the purchase of refrigerated trucks, standard crates, and the establishment of standard crates constituted 35% of the total purchasing costs, and thus economies of scale could be reached by purchasing from larger suppliers instead of small-scale farmers. The use of a limited number of well located and sophisticated preferred suppliers enabled a reduction in the distribution costs up to 50%, which resulted in savings up to 2.5-5% in total chain costs. The total number of suppliers of perishables was reduced from over 250 to only 60 growers overtime (Ruben et al, 2007).

Huacheng Supermarket in Nanjing, China relied on three different chains to source vegetables: Baiyunting wholesale market through which about 70% of vegetables for the supermarket were procured. Supermarket also had contractual arrangements with Chaoda, an integrated vegetable company, and Jiangxizhou, a local farmers' organisation. Approximately a quarter of Huacheng's supermarket purchase was procured from Jiangxizhou, a small agricultural island located in Nanjing City (fig. 2.2). The latter share was gradually increasing, since Huacheng signed a delivery contract with the producers in Jiangxinzhou village where the farmers took charge of pre-selection of the vegetable produce and the transport of the vegetables to Huacheng processing centre. Vegetables procured from all three suppliers were directly delivered at the processing centre, which handled the first stage of vegetable processing, taking care of washing, cutting, grading and packing. Then, the produce was transported to the shops in cooled trucks (Ruben et al, 2007).



**Figure 2.2: Supply chain cost analysis of tomato from Nanjing (Yuan/kg)**

Source: Ruben, et, al 2007.

Small farmers in China were contracted by packers who in turn supplied to supermarkets. All packers studied had minimum farm size requirements, but the minimum was quite small (0.13 to 0.20 ha). Packers contracted with the help of local village leaders (Miyata et al, 2009). In Vietnam, farmer organizations had written contract with the supermarkets (Moustier et al, 2009). Local supermarkets in Madagascar procured F&Vs mostly from local, informal, suppliers rather than from companies selling high standard vegetables. Local supermarkets did not value quality and standards sufficiently and were hesitant to engage in contracts which were needed for producing such standards. Thus, the high standards suppliers found the modern retail chains in Madagascar not (yet?) interested in their products (Minten et al, 2009).

In Indonesia, Hero, a large supermarket chain procured F&Vs through centralized procurement system and established its own preferred suppliers and private standards. Small-scale farmers, especially those with low levels of human and financial capital, supplied to such chains only when they were linked to preferred suppliers, who, in turn, ensured supermarket's standards. Otherwise, small-scale farmers supplied part of their produce to relatively small domestically-owned chains, albeit at a low price. The average share of farmers in gross value of produce in six vegetables, namely: cabbage, carrot, chili-pepper, potato, shallot, and tomato in traditional value chain was 35.4% compared to only 26% in the

supermarket chain. However, the absolute prices received by the farmers for these vegetables, except tomato, were higher in modern value chain compared to that in the traditional value chain (69.8% of the modern value chain price). But, the supermarket and its preferred suppliers cornered most of the gross value in modern chain channel (53% and 21% respectively). Farmers preferred to sell to the modern retail chain because of lower transaction costs and assured purchase besides higher absolute price received (Chowdhury et al, 2005).

In Honduras, 57% of the farmers supplying the supermarket channel received higher price than the spot markets, compared to only 26% of farmers supplying the spot market. Farmers participating in the supermarket, on an average, sold 21.4% of the produce in spot markets. 96% of the farmers supplying the supermarket channel were members of a farmer organization, compared with only 56% of farmers supplying the spot markets. Further, farmers participating in the supermarket channel had a greater degree of trust in their buyers than farmers supplying the spot markets. Initially, farmers were reluctant to supply the produce to supermarket channel since they were paid two or three weeks after delivering the produce. However, through interaction with other farmers who were already participating in the supermarket channel and with the supermarket buyers over time, mutual trust developed that could even withstand delays in payments or rejections of the produce (Blandon et al, 2008).

### *2.1.2 Farmer profile*

In Guatemala, the supermarket supplying tomato farmers had higher farm size (9.3 ha) and cultivated area (4.6 ha) than the traditional market supplying farmers (7.8 ha and 2.5 ha respectively). Supermarket-channel farmers were more specialized in tomato production (91% of cropped land) than the traditional-channel farmers (68% of cropped land). Moreover, about 50% of the supermarket-channel producers were much more specialized in horticultural crops than the traditional channel producers (19%). 77% of the traditional channel farmers grew grain crops compared with 61% of supermarket producers. Further, 80% of the supermarket channel farmers had irrigation compared with that only 35% of the traditional channel farmers. The irrigation coverage was higher among the supermarket

channel farmers (50% of total area) than that among the traditional channel farmers (15%). 74% of the supermarket farmers cultivated the crop twice a year compared to that by only 20% of the traditional channel farmers (Hernandez et al, 2007).

In China, 53% farmers contracted with supermarket due to the stable or guaranteed fixed price and another 24% due to higher price offered by the packers. Access to information on improving quality and better access to inputs were also reported by 10% and 3% farmers respectively (Miyata et al, 2009). In Kenya, supermarket channel farms were on average five times larger, in overall farm size, than traditional channel farms (9–18 ha vs. 1.6–2.4 ha per farm depending on the crop). Moreover, supermarket channel *kale* farmers had 75% under irrigation as compared to 18% in case of traditional channel *kale* supplying farmers. The supermarket channel farmers were also more diversified—producing twice the variety of horticultural crops compared to the traditional farmers, helping them to manage risk and reduce transaction costs for supermarkets to deal with them (“one stop shopping”). All the supermarket supplying farmers had cellphones as compared to only 30% in case of traditional channel supplying farmers. The supermarket farmers used more of hired labour than the traditionally growing farmers as evident from the fact that in case of *kale* production, 79% of the permanent farm workers on traditional channel farms were family members, while for supermarket channel farms, 79% were hired employees. Further, traditional farmers had only the primary education while the supermarket farmers had a secondary education. If farmers had drip/overhead irrigation, then it increased the probability of participation in supermarket channel by 46% (Neven et al, 2009).

### *2.1.3 Costs and Returns*

Supermarket supplying tomato farmers in Guatemala had 20% higher yield and 24% higher gross income/hectare compared with that of the traditional farmers but 36% higher costs in supermarket-channel resulted into slightly lower net income (0.4%) than that in the traditional channel. Farmers preferred to sell to wholesalers due to: procurement of all quantities and grades all round the year; low transaction costs and risk; and quick payment (Hernandez et al, 2007). The supermarket supplying contracted apple growers in China had 28% higher yields, 35% higher family labor productivity, and 28% higher per capita income

compared to independent apple growers. However, in case of green onions, contract growers had somewhat larger farms and more irrigated land (both differences were small but statistically significant at 5% level) than the non-contract growers. The yield difference was not statistically significant. The contract farmers earned 2.4 times as much from green onion production compared to non-contract growers. The total and per capita household income of the contract green onion growers was 32% greater than that of non-contract growers. When farmers asked how their income had changed since they began contract farming, majority of farmers reported that their income had increased: 51% reported small increase, 25% perceived a large increase, 21% said no change and only 3% reported small decrease (Miyata et al, 2009).

Members of farmer organizations supplying supermarkets in Vietnam were paid higher prices per kg than the non-member farmers (43% higher for rice, 33% for litchis and 67% for tomatoes). Although the production costs were slightly higher in case of member farmers (18% for rice, 2% for litchi, and 67% for tomatoes), but the profits per kg of produce sold to supermarkets were also higher among the member farmers (65% for rice, 38% for litchi and 400% for tomatoes). Further, in addition to higher prices, the main advantage of supermarket interface appreciated by the farmers was the greater degree of stability of prices compared to the traditional markets (Moustier et al, 2009).

In Kenya, average land productivity and average labor productivity were, respectively, 59% and 73% higher for supermarket channel kale farmers than for traditional channel farmers. Supermarkets paid the highest wholesale price for kale in the market (about 10–20% higher than traditional retailers), but only 34% of the supermarket channel farmers reported the higher price as the key reason for selling to supermarkets. 46% also reported lower transaction costs and lower market risks in the supermarket channel as compared to the traditional market channel (Neven et al, 2009).

In Madagascar, more than 90% farmers contracted with Lecofruit, an exporter company to Europe, as it changed the way of cultivation of off-season vegetables. Farmers started to use compost with inputs which they were not doing earlier. It resulted in increase in yield of off-

season vegetables from 3.6 to 6 tonnes/hectare. The productivity of the rice was 64% higher on the plots with contract compared to plots without contract. Thus, there were significant spillovers from contract farming on the production of rice. Further, the estimated length of the lean period of the contract farmers reduced to 1.7 months which was about 3.7 months before the contract with the firm and 4.4 months in the study as a whole. 61% farmers also reported that price in the contract, on average, was higher than the local market. About three quarters of farmers stated that access to a source of income during the lean period was main reason for signing the contract. 66% farmers found it better on stable income round the year. Access to inputs on credit and learning of new technologies was also reported by 60% and 55% farmers respectively (Minten et al, 200).

#### *2.1.4 Producer support*

The intermediate companies or external collective organizations in Switzerland had lowered costs and had improved technical support to producers and promoted the introduction of new high quality varieties (apricots) and new products (plums, grapes) with better added value to the producers (Reviron and Chappuis, 2005). In Guatemala, %age of growers provided inputs on credit by input companies was higher in case of the supermarket channel (83%) compared to that in case of traditional channel (71%). 81% of the supermarket channel farmers also obtained technical assistance from the input companies compared to 62% of the traditional channel farmers (Hernandez et al, 2007). Hortico in Zimbabwe provided inputs in pre-weighted quantities on credit, which was funded in part by a revolving fund. If the value of the delivered produce was less than the input costs, the producer was given an interest free loan for an agreed payback period (Boselie, et al, 2003).

In South Africa, SPAR retailer provided interest-free production loans up to three months to growers upon presentation and approval of a business plan which were deducted at the time of delivery of produce. Growers' farms were visited by SPAR technical personnel to ensure product quality standards. Further, supermarket initiated to require progress report from the farmers to enable SPAR personnel to provide management support. The supermarket developed a strong trust with farmers though had only a verbal contract with the producers (Louw et al, 2006).

In case of TOPS in Thailand, another entity- World Fresh- trained the growers at farm level in applying Good Agricultural Practices (GAP) and agents at other levels in the supply chain implemented Hazard Analysis and Critical Control Points (HACCP) principles. Suppliers who failed to deliver 100% of the order had to pay for the short delivery of the produce against purchasing costs. Detection of excessive residue levels by the ‘World Fresh’ laboratory could result in rejection of the produce and recurrent default led to exclusion. Upon default of residue levels, suppliers were forced to prove the quality of their next shipment with laboratory tests for which they had to bear the costs (Ruben et al, 2007). Global retail company, Lecofruit which exported most of the vegetables from Madagascar to European supermarkets had written agreement with the farmers and provided seeds, fertilizers and pesticides as a part of the contract. The company deducted the cost of the inputs in kind through the crop sale proceeds (Minten et al, 2009).

#### *2.1.5 Problems*

In Switzerland, producers had to ensure the product quality. However, despite the major change in the organization, costly investments in quality control and storage facilities, and Eurep-gap certification, the risks for the packers and the producers remained very high. The price paid was indexed on the conventional market price; not on the production costs. The producers had less means to find other partners than the retailers and did not have the benefit of long-term contracts. Thus, producers were tied to higher standards but these standards that were initially earning a premium tended to become conventional and the minimum point of entry to the supermarket shelves (Reviron and Chappuis, 2005). In Mexico, though supermarkets paid their suppliers higher prices than did other buyers (such as the traditional wholesalers who operate in the public wholesale markets-CEDAs), the net benefit to the supplier was somewhat diminished by the strict quality standards and practices, making the organization of the process complicated for the supplier (Schwentesius and Go'mez, 2002).

In Guatemala, more capitalized tier of small farmers enjoyed advantages with the supermarket channel, but also incurred some entry costs that the traditional farmers did not face (Hernandez et al, 2007). Small producers in Thai Fresh United were required to change

long standing production practices; grow to precise quality standards and implement specific production practices which sometimes resulted into higher rejection rates. Homegrown required that all its suppliers should have toilet and washing facilities, a pesticide store, spraying equipment and waste pesticide disposal facilities. For small producers with little or no access to credit, such an investment might be impractical and/or not economically viable. Furthermore, risks to small producers of producing to strict quality requirements were considerable. In case of Hortico in Zimbabwe, 40% of small growers incurred a loss on their first crop which however reduced to 15% during second planting as most growers adapted very quickly (Boselie et al, 2003).

In case of SPAR retailer in South Africa, farmers did not coordinate their supply schedules which sometimes resulted in delivering the produce at the same time and oversupply on a specific day. The glut of the produce forced the supermarket to buy it at lower prices to ensure the clearance of the stock. These lower prices did not please the farmers. Another problem was that the store was making payments on weekly basis on Friday afternoons irrespective of which day the delivery were made. The often-cash constrained emergent farmers started to make all the deliveries on Fridays, resulting in the oversupply. The retailer also secured loan repayment on these Fridays by subtracting the amounts owed from the farmers' earnings (Louw, 2006).

Small suppliers in case of TOPS in Thailand delivered the produce in small lots, often in non-refrigerated trucks, with high variation in quality and quantity. Due to this variability, the reception of F&Vs and quality control took a long time and led to high costs which led to high ordering and invoice costs. Further, delivery was unreliable, leading to out-of-stock and as a consequence missed sales in stores. Stores had to maintain high stocks as buffers, leading to additional costs. The delivery of the produce was made in non-standardized crates, resulting in high handling costs for transferring the produce to standardized crates. Tracking and tracing of produce were very difficult. There were also frequent price changes which sometime led to mistake in price determination (Ruben et al, 2007).

In China, Huacheng Supermarket in Nanjing, used cooled vehicles to deliver vegetables to supermarkets, leading to an increase in transport costs. Labour costs were the major costs for both production and marketing of tomatoes. Due to poor transport conditions-most farmers used bicycles or tricycles-direct delivery costs were low, but farmers incurred high tomato losses. Long distance transport also resulted in poor quality. In processing, labour costs were again a major component (60%); the remainder was made up by transport costs (15%), water and electricity (15%) and rent fees (10%). Apart from problems with quality standards, unstable supply, low turnover and high operational costs represent major limitations for Huacheng supermarkets. The mandatory 11% value added tax made prices less competitive and profit margins lower compared to the wet market (Ruben et al, 2007).

In order to ensure quality, Alice in South Africa had provided written product specifications to producers. In case of Homegrown, producers had to comply with a written code of practice that specified equipment, production practices, record-keeping, use of child labour etc. (Boselie et al, 2003). World Fresh, a leading supplier to TOPS in Thailand started a preferred supplier program to improve the consistency of timing and quality of deliveries by reducing the number of suppliers and streamlining the supply chain. The principal characteristics of these arrangements were:

- i) long term delivery contracts based on quality, quantity and prices;
- ii) using the standardized crates and-if required-refrigerated transport;
- iii) value added activities such as cutting, trimming, grading and packing; and
- iv) backward chain control to track and trace the produce (Ruben et al, 2007).

#### *2.1.6 Inclusion of small farmers*

Hortico supermarket in Zimbabwe had a supply base of more than 4,000 small producers with an average farm size of around two hectares. It had designed and operated the supply chain with a view to integrate small producers. Small producers could provide the required care and had lower costs than larger growers. Furthermore, small producers had lower rejection rates for certain non-traditional vegetables than the large-scale growers. Hortico responded to changes in quantities demanded at short notice without any wastage since their supply base was spread over a large number of small suppliers organized into relatively small

collection centers. In Thailand, TOPS had found that small producers were able to adapt to organic production methods since practices like crop rotation and selection of resistant varieties were long established elements of traditional production system. The strategies were aimed at including small producers in supermarket supply chain involving partnerships between public and private sector stakeholders (Boselie et al, 2003). SPAR supermarket in South Africa procured produce from emerging small farmers as these delivered produce in smaller quantities, thus ensuring produce freshness. This helped the supermarket to build rapport among the farming community (Louw et al, 2006).

## **2.2 The Indian retail chain interface with primary producers**

Several exploratory studies on FFV retail chains in India compare the yields and costs of production and marketing of vegetables in both retail chain and traditional market channels. One such study on cauliflower in Hoskote, Bangalore found that the retail chain farmers had considerably lower transaction costs (Re. 0.7/head in Collection Centre (CC) and Re. 0.6/head for consolidator) than that in *mandi* (Rs. 1.1/head for commission agent and Re. 0.9/head for wholesaler) although the cost of production of retail chain farmers was higher - irrespective of the fact whether they sold directly to CC (Rs. 30,325/acre) or through the consolidator (Rs. 39,850/acre) -than those selling in *mandi* (Rs. 20,500/acre). Average prices and net returns for these two types of cauliflower farmers selling to organized retail (directly and through consolidator) were about 12% and 27% (prices) and 31% and 43% (returns) higher respectively than that from sale in *mandi*. The difference was even larger when the amount charged by the commission agent (usually 10% of sale price) in the *mandi* was taken into account (Joseph et al, 2008).

A similar study on major vegetables- cabbage, cauliflower and tomato- in the case of Spencer's found that the food retail chain farmers attained higher respective yields (33, 12.5 and 30 tonnes/acre) than that for non-retail chain farmers (30, 12, 25 tonnes/acre). The retail chain farmers had marginally lower yield in carrot (12 tonnes/acre) than that for non-retail chain farmers (13 tonnes/acre) but, in all crops, retail chain farmers had considerably lower transaction costs than the non-retail chain farmers: cabbage Rs. 180/tonne and Rs. 700/tonne, cauliflower Rs. 189/tonne and Rs.1200/tonne, carrot Rs. 775/tonne and Rs.

1905/tonne and tomato Rs. 640/tonne and Rs. 1000/tonne. The food retail chain farmers received higher prices for cabbage (Rs. 3.5/kg), cauliflower (Rs. 8.4/kg), carrot (Rs. 15.5/kg) and tomato (Rs.6.5/kg), as compared to respective prices of Rs. 3/kg, Rs. 7/kg, Rs. 14/kg, Rs. 5.5/kg received by farmers selling in traditional market. The %age increase in net profits of food retail chain farmers over non-food retail chain farmers in cabbage, cauliflower, tomato, and carrot was 48, 40, 34 and 18 respectively (Mangala and Chengappa, 2008). Similarly, Namdhari Fresh provided higher prices for baby corn (Rs.7/kg) and *bhindi* (Rs.9/kg) at farm gate itself as compared to only Rs.4/kg each for the two crops in *mandi* (Dhananjaya and Rao, 2009).

In case of MDFVL Fruit and Vegetable Ltd. (MDFVL) run procurement operation for spinach in Haryana, contract farmers received 8% higher prices than those received by non-contract farmers, mainly for better quality and as an incentive for ensuring a regular supply. Contract farmers obtained substantially higher net profits (78%) than that obtained by non-contract farmers (Birthal et al, 2005). The farmers supplying tomatoes to this chain in Uttaranchal had lower yields (11 tonnes/acre) and higher costs of production (Rs. 2.8/kg) compared with 13.6 tonnes/acre and Rs. 2.6/kg for those selling to private traders, but reduced transaction costs (Rs. 0.14/kg) compared to Rs. 1.83/kg for farmers selling to traders. There was higher profit of Rs. 2.75/kg for MDFVL farmers in comparison with Rs. 1.5/kg for farmers selling to traders. But, the retail chain farmers incurred higher costs on pesticides and fungicides to meet quality specifications demanded by MDFVL (Alam and Verma, 2007).

Farmers supplying to the organized outlets either indirectly (through consolidator) or directly to CC owned larger land holdings (9.38 acres, and 4.42 acres respectively) than those owned by those supplying to commission agents (4.39 acres), wholesalers (2.31 acres) and Shandies/local villagers (3.75 acres). Farmers supplying to CC and consolidators had higher proportion of irrigated land (77% and 61%) as compared to those of farmers delivering to other channels (42-60%) though 80% of operated land of farmers delivering to wholesalers was irrigated (Joseph et al, 2008). Similarly, farmers supplying to MDFVL had larger landholdings (3.25 acres) than the non-retail chain farmers (2.8 acres) (Alam and Verma,

2007). In Spencer's case, the average land holding of the farmers delivering vegetables at CC was 6 acres compared with just two acres in case of traditional market farmers although %age of irrigated area was same (75%) across both categories. Of the total farmers studied, about 47% and 37% of the farmers associated with Spencer's were small and medium respectively and only 16% were marginal as compared with high proportion of marginal (93%) and small proportion of small farmers (7%) supplying produce in traditional markets (Mangala and Chengappa, 2008). Thus, though the paper states the retail chain model was suited for small farmers, the field data used by the authors shows that the retail chain worked with relatively larger farmers, both in terms of local land holding size as well as standard definition of small farmer in India (upto 5 acres). Thus, all these studies reveal that food retail chains worked with relatively larger landholders who were resource rich as well.

In the initial stages of establishment of supply chain operation, rejection rate in food retail chain (Spencer's) farmers was higher but over time, it reduced to 8%. The farmer price was based on prices prevailing in modern auction system of National Dairy Development Board (NDDB)'s Safal market, HOPCOMS (a co-operative FFV retail chain run with Government support) and K.R. wholesale market in Bangalore. Spencer's also ensured support price even in case of glut in the market, so that the farmers did not incur losses (Mangala and Chengappa, 2008). In another case, retail chain procured only 30% of the total tomatoes. But, rejection rate for some federations supplying to the retail chain was as high as 50-60% due to small size of fruit and pest infection, and long distance transport of produce to Delhi where final quality check was done. Besides, poor grading by farmers deliberately and lack of supervision led to higher rejections although it was also stated that, sometime, rejection was deliberate to avoid oversupply (Alam and Verma, 2007). The supermarkets procured graded produce, which caused two problems for the farmers: (1) farmer was still dependent on the local trader to sell the rest of her crop; and (2) in selling all her produce to the local trader, she would get a higher average price. The retail chain procured only high quality produce (about 30% of total production), for which she obtained a higher price. However, the price obtained for the rest of the produce was lower than average (Punjabi and Sardana, 2006).

In Andhra Pradesh, organized retailers (ABRL's More, Reliance Fresh, ITC Choupal Fresh, Heritage's Fresh@ and Spencer's) in Vontimamidi (a vegetable growing region near Hyderabad, India) procured about 25% of the total fruits and vegetables produced. The average procurement per day in each retail chain varied between 4-14 tonnes during week days and reached upto 7-17 tonnes during week-ends. Procurement prices were based on the prices prevailing each day for each F&V at the Bowenpally market in Secunderabad and were generally set higher than the prices prevailing at the Bowenpally market. 95% of farmers had gained by selling through the organised retailers. About 62% of the producers' gain was 25-75% higher than that in the *mandi*. The major reasons to sell to organised retailers were: higher price, use of electronic weighing scales, savings from commission charges (4-10%) payable at the local *mandi*. Further, 65% of farmers working with the retail chains were small and marginal farmers (Sulaiman et al, 2010).

Another recent study (Pritchard et al, 2010) of impacts of supermarket procurement based on 78 registered farmers across three CCs (28 in Kolar, 23 in Bijapur and 27 in Belgaum) of Reliance Fresh (RF) in Karnataka showed that the CCs operated as delivery and dispatch stations servicing up to 200 farmer suppliers, and acted as a hub to a major DC on the outskirts of Bangalore. The average operational holdings of RF farmers were much smaller in Kolar (2.5 ha) than those in Bijapur (8.2 ha) and Belgaum (9.3 ha) but all of them were much higher than the average operational holding in the study areas. Although farmers were 'registered suppliers' to RF but the sales to RF in Kolar accounted for only 24.8% by volume and 32.3% by value of output as compared to 39% by volume and 47.6% by value in Bijapur and only 7.6% by volume and 19.5% by value in Belgaum, which indicated that majority of farm output was sold to traders and destined for various wholesale markets. In Bijapur, only 43% grape growers supplied grapes to RF only, 38% split their sales between RF and various local traders, and 19% sold their entire crop to traders only. RF neither established any institutional mechanisms of governance (such as written contracts) in its areas of procurement nor possessed the market power to impose dependent relations on farmers. Farmers were free to grow what they wanted, and to sell their output on whatever terms, and to whom, they wished. The Kolar region was serviced by 20-30 traders ('large merchants'), and seven supermarket CCs. Farmers did not generally possess strong loyalties one way or

the other among traders, or between traders and supermarket buyers. Farmers were aware of price conditions across different markets and price realization obtained by their neighbours due to mobile phones.

During the time of harvest, CC in-charge posted the ‘offer price’ based on which farmers decided whether or not to supply their produce by comparing the revenue realisation (gross price net of transaction costs) from alternative channels. Agreements were reached wholly on the basis of oral assurances. Thus, without contracts or similar committal obligations to lock in farmer supply, CC managers faced a messy task of matching supply and demand. RF procured F&Vs of ‘A Grade’ only. It paid higher price at their dispatch-door in return for better quality, but, with efficiencies in logistics and handling, the effect of these cost imposts on final (supermarket shelf) prices is discounted (vis-à-vis the fragmented transactional arrangements of wet markets). CCs made public their ‘offer prices’, and this transparency – along with their positive reputation for prompt payment (cash or cheque on day of delivery) – provided a strong element of certainty to farmers, in contrast to the situation when they sold to traders, which was dependent on bargaining, and thus, entailed uncertainty. About 89% farmers in Kolar, 96% in Bijapur and 96% in Belgaum perceived the offer prices from supermarket CCs as ‘reasonable’ or ‘mainly reasonable’. Indeed, 96% farmers indicated that the entry of supermarkets into their local growing areas had been ‘good for prices’. The weighted average price paid by RF as percentage of that paid by traders was higher in most of the vegetables ranging from 120 to 300%. Although RF claimed that it invited ‘registered’ farmers to facilitate farmer dealings with recommended seed and chemicals suppliers, but farmers used their traditional agrarian axioms of ‘past experience’ and ‘advice from neighbours’ for input use. Farmers did not regard supermarket chains as important sources of advice as almost none of them used them for seed, a few (2-3%) for chemicals and advice on harvest, with major sources being other farmers or self management.

Since RF procured only A grade of the produce, farmers had to bear the costs of finding an alternative buyer for the rejected produce. Rejection rates for grapes and green beans were less than 2%, as compared to 23% in tomatoes. Though RF paid a healthy premium for ‘A’ grade tomatoes, but growers ran a greater risk of having their produce rejected. Farmers also

undertook sorting and grading, prior to delivery which imposed an additional cost on growers, but farmers did not have to pay commissions or ‘unloading fees’ unlike in mandi. Deliveries at CCs were subjected only to visual tests (checking for damage from insects, disease, etc.) and the requirement that produce met the criterion of uniformity of size. Thus, the role of quality parameters in supermarket procurement remained quite rudimentary.

### **2.3 Food retail chains and traditional retailers in Mexico**

The expansion by the multinational retail giants from the USA and France into Mexico since 1990s stimulated the process of the consolidation and multinationalization, but without any substantial loss in traditional retail channels. Moreover, this expansion led to the geographic deconcentration of supermarkets from Mexico City. The consumer preference for shopping in supermarkets fell from 75% in 1993 to 56% in 2000. From 1993 to 1998, supermarkets even lost 5% of consumer acceptance for FFV purchases. The small local markets and shops were convenient for food purchases by Mexican consumers, who had the habit of buying several times a day, and, if possible, on credit. Also, the *tianguis* (mobile street markets) were not paying any tax or rent, and, thus competed unfairly with supermarkets that had to pay both (Schwentesius and Gomez, 2002).

But, a more recent study reveals that the FDI in the modern retail sector in Mexico had accelerated the transformation of the sector as a whole by reducing the market share, productivity and margins of traditional retailers. Moreover, these modern (transnational) retailers were better connected to global commodity chains, thus, importing more than their local counterparts. So, the net effect on the local producers was negative. The modern retailing sector was characterized by a low skilled, unstable and weakly unionized labour force. FDI flows in retailing had a negative effect on remuneration since wages in retailing were still far lower than the average wage in the economy (50%). In the context of aggressive competition among the main retailers, attracting skilled labor was less important than reducing costs in order to gain market share by lowering prices. Thus, FDI did not produce positive effects in terms of wages for workers. Significant backward externalities were also observed. Following Wal-Mart’s lead, local retailers had reorganized significantly by internalizing the distribution of goods within distribution centres, centralizing their purchases

and pursuing a permanent low prices strategy. Using new informational technologies, buyers had increased their ability to exert governance on value chains. These changes had affected local suppliers negatively, as they lost negotiating power and suffered higher pressures on their margins leading to the asymmetries between local firms; diminishing their capacity to learn and grow. Wal-Mart even became the main contributor to the Mexican commercial deficit. The growing pressure of imports and the increasing governance power of retailers led to the elimination of some local suppliers and a concentration process in supply chains with a risk of immiserising growth for the surviving firms (Durand, 2007).

## **2.4 Food retail chains and traditional retailers in India**

In India, the number of street vendors increased after the economic liberalization policy was initiated in 1991. The street vendors in India constituted about 2% of the population of the metropolis. The total number of street vendors were estimated around 10 million. According to the study by National Alliance of Street Vendors in India (NASVI) around 20% of the earnings of the street vendors were taken as rent by municipal authorities and the police. In Ahmedabad, 30% of the vendors had taken to street vending due to the loss of their jobs in formal sector. A similar study by SEWA in Ahmedabad, showed that half of the laid-off textile workers had taken to street vending. In Ahmedabad, around 40% of the 80,000 street vendors were women (Bhowmik, 2005).

In Mumbai, 71% of the unorganized retailers reported decline in sales with the emergence of the organized retail. Only 18% of the shops/hawkers reported that their sales were unaffected by the large retail chain malls while only 11% reported an increase in sales as they opined that they offered products and services not available in the malls. Some eateries close to the malls also reported an increase in sales due to patronage of the mall employees. All the F&V retailers showed a decline in sales after the opening of organized retailers. Most frequently shops reported a 20% fall in sales but the intensity varied by type of product. 64% reported a loss of high value customers. The decline in sales had most frequently impacted larger shops (400-500 sq ft and 300-400 sq ft) and least commonly the size range of 100-200 sq ft. Only 14% reported some new sales initiatives like tele-orders, home delivery and sales on credit. Despite the falling sales, 96% of the retailers did not increase their working hours as they

reported that their family members were already working for 11 to 14 hours per day. 63% of the unorganized retailers felt threatened by the opening of malls. 16% of them felt threatened with closure. Hawkers, particularly women and children, faced eviction drives and harassment around the malls. 41% reported an increase in eviction drives, 24% in harassment by agents of the malls, while 17% reported an increase in bribes and *hafta* (weekly bribes to local officials and police). 72% of the hawkers experienced a fall in sales and all reported falling profits (Kalhan, 2007).

Joseph et al (2008) carried out a study on impact of the organized retailing on unorganized retailers in India (photo 2.1). For this purpose, 1999 unorganized retailers were surveyed in the vicinity of the organized retailers; of which 65% belonged to grocery and general store, 19.7% to textile and clothing shop, 7.6% to fixed FFV seller and 7.8% to push cart hawkers. Fixed FFV shops on an average had a shop size of 129 sq.ft. The unorganized retail outlets employed more family labour (1.5 persons/shop) than hired labour (1.1 persons/shop). The study revealed that there was an increase in employment in South (2.7%) and East (1%) but decline in the West (-3.4%) and no employment change in North (-0.1%); overall a negligible increase in employment (0.8%) after the emergence of organized retail outlets in India.

The annual decline in turnover and profit was the highest in West (19% each) followed by East (11% in turnover and 16% in profit), North (10-11% each) and insignificant in South (1%); the overall annual decline in turnover and profit ranged between 8-9% in India. Further, unorganized retailers who reported decline in turnover due to competition from organized retailers was highest in West (59%), followed by East and North (48% each) and least in South (23%); the overall being 40%. Category-wise, 39% of the fixed fruit/vegetable sellers and 34% F&V hawkers reported decline in turnover. The adverse impacts on the sales and profit weakened over time. The annualized closure of the unorganized retailers due to the competition from organized retailers was higher in West region (3.2%), 1.5% each in North and South and least in the East (0.4%); the overall in India being 1.7%. The unorganized retailers had undertaken a number of steps in response to competition from the organized retailers such as: adding new product lines and brands (53-56% each), better display (60%), renovation of the store, introduction of self-service (34%), reduced expenses (34%), reduced

prices (33%), discontinued some products (28%), enhanced home delivery (25%), more credit sales (21%) etc. Only 10% of the unorganized retailers were willing to take up the franchisee with the organized retailers (Joseph et al, 2008).

Another sample of 805 unorganized retailers (control sample) was also taken from unorganized retailers who were located away from the organized retailers to test whether the impact of the organized retailers had been confined only to traditional retailers in the vicinity of these retailers or not. The control sample recorded an overall growth in turnover and profit of about 2% and 5% respectively. Only 24-25% of unorganized retailers in the controlled sample reported decline in turnover and profit each due to the emergence of the organized retail outlets. The study recommended that the cooperatives and associations of the unorganized retailers should be encouraged for direct procurement from suppliers and farmers and ensured better credit availability to unorganized retailers from banks and micro-credit institutions (Joseph et al, 2008).



**Photo 2.1: Modern retail chain and traditional vendor face-to-face (Source: Sridhar (2007)).**

Gopalakrishnan and Srinivasa (2009) argue that corporate food retail which they turn as ‘corporate food provision’ will accelerate many key elements of India’s agricultural crisis as it will produce a decline in land productivity, reduce food security, adversely affect price

stability and negatively impact employment and credit sectors. Critically commenting on the ICRIER study (2008), they argue that farmers and traditional retailers are not homogenous categories with common interests. The class and social contradiction within these categories need to be taken into account. They are of the view that as against the existing food system in India which is dominated by small actors including farmers, traditional retailers and traders who operate in various niches of complex network of institutions will be transformed into a corporatised and controlled industrialized agricultural production and marketing system. There will be a shift of production decisions from farmers to corporate buyers and farmers will have to make additional investments to meet new standards or suffer rejection of produce or non-purchase which will diminish any gains from secure prices. They quote studies across the globe in the context of contract farming to support argument. They cite cases of interlocking of market, delay in payment to producers and transferring of the risk to the producers and control to the corporate buyer in new networks. They also point out the implications for the traditional markets and producers supplying them due to the expansion of the corporate food retail. They also point to the poor working condition in the chains for farm and factory workers. On the other hand, there is evidence of decline of small traditional stores due to the expansion of the modern retail in countries like Argentina, Chiili, Brazil and India. On the whole, produce may not benefit in terms of higher returns and consumer may have to pay higher prices.

## **2.5 Summary**

The above review of evidence on impact of food retail chains on primary producers shows that generally they excluded small producers of fruits or vegetables due to diseconomies of small scale of these growers and their inability to meet quality standards. Even when retail chains started with large numbers of producers including small farmers, over time they rationalised the grower numbers and led to exclusion of small farmers. Farmers growing for supermarket chains were larger landholders and more resourceful in general than their counterparts almost everywhere. Supermarkets imposed their own quality standards and practices for FFV procurement which included delivery in consistent volumes and quality. Small producers were compliant as a result of public and private partnerships that included significant support to small suppliers in some cases e.g. in South Africa. Also, when small

producers worked through consolidators/packers for retail chains or producer organizations, they were able to supply to supermarket chains. Though supermarkets paid their suppliers higher prices than did other buyers, the net benefit to the supplier was somewhat diminished by the strict quality standards and practices, making the organization of the process complicated for the suppliers.

In India too, the story was not very different and supermarket supplying farmers were generally larger than their open market counterparts though the farmers got better returns from retail chains supply due to either higher price or lower cost of transaction though chains generally bought only A grade and left the rest of the produce for the farmer to sell off in the open market. Even yields of such growers were lower and cost of production higher than that of farmers who grew for the open market. Only co-operative channel was inclusive of smallholders and had mechanisms to ensure their participation.

On the other hand, traditional vendors are differentiated by size, number of items carried, pricing strategies, and customer segments targeted, among others. They are part of the larger community of street vendors except fixed shopkeepers and suffer from lack of space, legal rights to sell and other local corrupt practices of local authorities and agencies. Most of them sell small quantities and borrow working capital and sell on a daily basis.

## **Chapter 3**

### **F&V Retail Chains and Primary Producers in Gujarat - inclusiveness and impact**

#### **3.1 Introduction**

This chapter examines the role of F&V retail chains in linking primary producers with end markets with the help of case studies of the retail chains (Reliance Fresh (hereafter RF) and ABRL's More) in Gujarat. It examines the organisation and structuring of the chains from farm to fork and assesses the nature of this linkage in terms of inclusiveness and effectiveness of the chains' operations at the farmer level. Section two profiles the operations of the retail chains both at the front end and the back end in terms of processing and retailing of perishable produce in Ahmedabad and procurement from neighbouring areas. Section three examines the farmer interface based on a primary survey of growers of two major crops- cauliflower and cabbage in case of RF and cauliflower and tomato in case of ABRL - by analysing the profile of farmers working with the chains, their incentives to work with them, and the effect the chains were able to make on their incomes. Section four concludes the chapter with major issues emerging from the case studies and suggestions for more effective and inclusive interface.

Gujarat is an important vegetable producing state with major production of potatoes, onion, tomatoes, cabbages, green chillies, cauliflower and brinjals besides green peas and lady finger. Major market- Ahmedabad received more than 35 vegetables with atleast 1200 quintals in 1999-2000 (Gandhi and Namboodiri, 2005).

#### **3.2 RF: A profile**

Reliance Retail Limited (RRL), a subsidiary of RIL (Reliance Industries Ltd.), was set up to lead Reliance Group's foray into organized retail. The RF, a wholly owned subsidiary of RRL was born in November, 2006 with its first store in Hyderabad. RF was evolved from Ranger Farms which wholesaled FFVs to push-cart vendors and other bulk customers. Since then, RRL has rapidly grown to operate 590 stores across 13 states at the end of 2007-08. RRL launched its first 'Reliance Digital' store in April 2007 and its first and India's largest hypermarket 'Reliance Mart' in Ahmedabad in August 2007. RRL has also launched its first

few specialty stores for apparel (Reliance Trends), footwear (Reliance Footprints), jewellery (Reliance Jewels), books, music and other lifestyle products (Reliance Timeout), auto accessories and service format (Reliance Autozone) and also an initiative in the health and wellness business through ‘Reliance Wellness’. RRL also focused on building strong relationships in the agri-business value chain through RF which sells fruits, vegetables, and staples in its stores.

### **3.21 Store Formats and Retailing**

All RF outlets deal in F&Vs. RF had 700 stores in India and 110 in National Capital Region (NCR) alone, by early 2009. All the RF stores were owned stores and varied in size and format (table 3.1; photo 3.1).

**Table 3.1: Profile of RF in Gujarat**

Type of outlet	Format	Size of outlet (sq.ft.)	Number of outlets	Location of outlets
RF	Convenience	3000 to 5000	52	32 in Ahmedabad, 9 in Baroda and 11 in Surat
Reliance Super	Mini-hypermarket	> 10,000 to 20,000	10	One each in Ahmedabad, Baroda, Anand, Navsari, Vapi, Bhavnagar, Bhuj, Jamnagar, Bherauch, Himmatnagar
Reliance Mart	Hypermarket	> 75,000	3	Two in Ahmedabad and one in Jamnagar

Source: RF Regional Office, Ahmedabad

Number of F&V Stock Keeping Units (SKUs) per store ranged between 65 and 70, occupying about 15-25% of store space. Each of the RF stores was managed by one store manager and 18 store staff working in two shifts. The average footfalls in weekdays were around 400 while on week-ends increased to 600. The City Processing Centre (CPC) for F&Vs was located in Naroda. The F&Vs were classified into 8-10 product categories: leafy vegetables, tropical F&Vs, basic vegetables, cuts and sprouts, melons, mangoes, apples and citrus fruits etc. Only 2% of its FFVs were cut and packed. All city indents were consolidated and demands placed by the CPC to the Collection Centre (CC).



**Photo 3.1: A view of RF and ABRL's More stores in Ahmedabad**

The share of sales of F&Vs in total sales of RF stores was about 2.5%. On an average, a RF outlet sold one tonne of F&V/day which was 0.5 tonne/day earlier. The RF claimed that its share in organised F&V retail was 50%. The employees at the store trained specifically for F&Vs were called 'F&V champions'. Although, stores sold pre-packed vegetables like tomato, onions, potatoes, cut vegetables and other imported items, but it was difficult to sell them as they had to be declared "Best before" and their "Expiry dates" were to be mentioned. For tomato, potato and onion, prices were lower in the stores than un-organized retailers. The product promotion was done through leaflets, banners, and bi-weekly promotional schemes. The Reliance Food Processing Solutions Pvt. Ltd. was another arm of Reliance Industries Ltd, which was into wholesaling, and export. It focused on selected SKUs like onions, grapes etc. Sometimes, it supplied to the RF stores. More recently a 'market down' strategy has been used in all the stores to clear the unsold F&Vs at lower price. After that, the unsold F&Vs were dumped. The RF stores also stocked their own private label in staples and food under 'Reliance Select' label.

### **3.22 Processing at CPC**

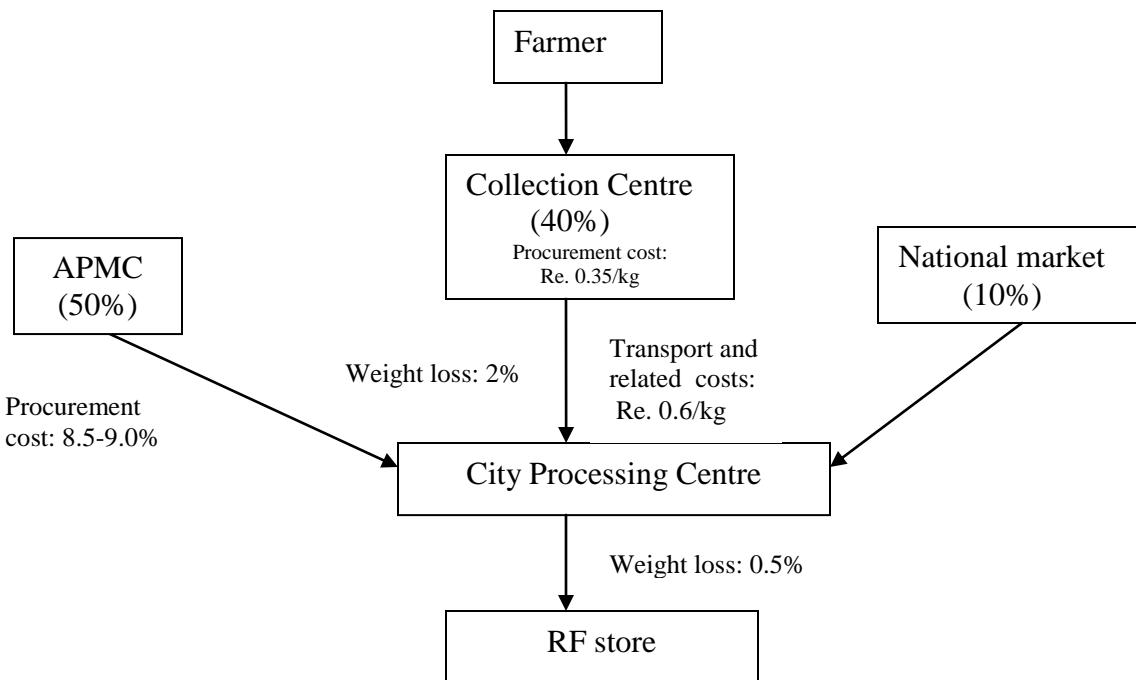
The processing of FFVs was carried out at the CPC which had mechanical facilities for washing and grading of potatoes. At CPC, the produce stayed for maximum of 12 hours. It had capacity to handle 70-80 tonnes of F&V per day. But, it handled 10 tonnes of fruits and 30 tonnes of vegetables daily. It had controlled atmosphere facility. The CPC was spread over 58000 sq.ft. area and major activities involved receiving, sorting, grading, allocation

and dispatch (figure 3.1; photo 3.2). The potato washing gave better look to the produce and helped in sorting as defects became more visible after washing. It had 10 supervisors for three shifts beside 20 workers per shift. The produce procured from the farmers at CC was graded and put into crates and sent to CPC which undertook grading, if needed, and did store wise crating and packing including cutting and packing vegetables and fruits. At CPC, cabbage and cauliflower were subject to further shredding which led to further weight loss of 3-4 %. After that, weighing in crates and store wise allocation of the produce was carried for dispatch to stores. For the afternoon supply from CPC to stores, refrigerated vehicles were used. The green leafy vegetables were delivered twice a day.

Earlier, the stores were supplied only once during the day. But, later, the supply to the stores was done twice a day. Produced harvested in the evening went to the stores the next day after around 12-16 hours while produce harvested in the morning reached the store in only 6 hours from the CC. Distribution cost was Re. one/kg excluding the secondary transport cost from CPC to store which was Re. 0.75/kg. Buying directly from farmers had resulted in saving of 6% commission at APMC *mandi*, getting Reliance Retail (RR) grade of produce, consistent quality, and regular supply from farmers.

### **3.23 Procurement**

There were three CCs for F&Vs (one each in Prantij, Nainpur and Padra) in Gujarat. Another CC (Chiloda) was closed due to low volumes and overlap with Prantij CC. Even in south Gujarat, CC at Kergaon near Chikli in Valsad district was closed due to its non-central location for Surat market, and the entire procurement for Surat was done from the APMC market. The Nainpur CC was 35 kms. away from CPC and procured five tonnes of F&Vs daily.



**Figure 3.1: Procurement and distribution system of RF in Gujarat**



**Photo 3.2: Cauliflower and cabbage grading and processing at DC in Ahmedabad**

Of the total procurement of F&Vs, procurement from APMC constituted about 50%, from CCs about 40% and the rest (10%) was procured from the national markets (figure 3.1). The main vegetables procured at CC in Prantij were coccinea (*giloda*), cluster bean, cauliflower, cabbage, cucumber, long melon, melon, brinjal, bitter gourd, and sponge gourd. The cauliflower and cabbage constituted about 30% of the total procurement at CC and 15% of the total F&Vs in stores. The daily procurement of cauliflower and cabbage was 1.5 tonne

each. The minimum procurement per farmer in cauliflower/cabbage was around 500 kg and maximum up to three tonnes per farmer. Cauliflower and cabbage were supplied by 15-20 farmers in each crop. Over a period of time, number of farmers supplying to RF had increased. RF generally selected those farmers who could invest and maintain the quality of vegetables (photo 3.3). About 140-150 farmers were registered with the CC at Prantij. The average F&Vs procured at each CC was 5-6 tonnes delivered by about 30 regular farmers.

The CC procured about 1.5 tonnes of cauliflower and cabbage each from two farmers each. The CC procured about 40% of the total cabbage and cauliflower production of the supplying farmers. In other vegetable crops, it procured as much as 70-80%. The other vegetables included okra, cucumber, brinjal, bitter gourd and bottle gourd. The maximum procurement at CC was 12.5 tonnes and minimum 0.5 tonne per day. Excluding potato, it was 10 tonnes/day. The CC procured an average of 15 SKUs ranging from a maximum of 22 and minimum of 10, all from 25 farmers. Crates were given to some farmers who supplied sensitive crops like cucumber and green brinjal. The farmers brought cucumber in plastic



**Photo 3.3: Delivery and grading of vegetables at the CC in Prantij**

bags. More perishable vegetables like cucumber and green vegetables were bought pre-graded by the farmers and CC only did occasional sample quality checks. About 98-99% of the major vegetables like cauliflower, brinjal, bitter gourd, cabbage and cucumber were procured through CC only. Onion and potatoes were procured from *mandi*. For leafy vegetables, procurement was done twice a day, from *mandi*. The average price of vegetables

was around Rs 7/kg. RF had more recently introduced new vegetables (exotics) in the area. These included broccoli, and red and yellow capsicum. It had also introduced package of practices for vegetables like cucumber and long melon.

After grading was done at field level, one more grading was done by the farmer/labour in the trailer itself at CC before unloading the produce (photo 3.4). RF did not provide any inputs to farmers but guided them on crop practices. The farmers were paid in cash on the spot on daily basis. For the farmer, transport cost upto CC was included in price. If the cost of transport to *mandi* was Re. 0.5/kg and only Re. 0.2/kg to CC then Rs.0.3/kg was deducted from farmer price. There were no variations in transport cost across villages. The backward calculations based on differential cost pricing were made to arrive at the farm gate price for the farmers. The farm gate price was generally the APMC *mandi* price-transportation cost of produce to *mandi*. Price was conveyed to the farmers in the evening based on the previous day *mandi* price as procurement at CC and functioning of *mandi* both started at 9 a.m and it was not possible to convey the same day price.



**Photo 3.4: Graded vegetables at CC**

The CC at Prantij was managed by a CC in-charge and a field in-charge trainee (both regular) supported by six laborers. Generally, there was one labour for every 1.25 tonnes of F&Vs procured at CC. The cost of procurement at CC depended on volume of F&Vs delivered at

CC. Generally, it was Re. 0.35/kg + primary transport cost from CC to CPC. The primary transport cost was Re. 0.60/kg. There was no wastage of produce at CC but at CPC, it was around 2%. The store level wastages hovered around 12%, including dumping. The weight loss of F&Vs while transporting it from CC to CPC was around 2% while only 0.5% while delivering from CPC to store. The cost of procuring from APMC *mandi* comprised of: 6% commission, 0.5% market cess, Re. 0.15/kg. labour cost, and transportation cost. Thus, total cost of procurement from *mandi* was 8.5% to 9%. The CC incharge claimed that direct procurement from farmers had benefited RF as it got only RR grades compared to RR grade and other grades in *mandi*, and it could meet the target of procurement due to fixed quantity agreed in advance with farmers. However, it also faced several problems in F&V retailing which were: inconsistent quality of produce, price fluctuations in market, poor information dissemination to farmers, un-balanced production of F&Vs, instability of front end sales, and poor quality and perishability of the product.

The staff at the CC were of the view that the bargaining power of the farmers had increased as the presence of retail chains and *mandi* gave them the multiple options to sell their produce. Moreover, exploitation of farmers had reduced in *mandi* as the RF and other retailers in the area absorbed 30-40% of the farmers produce. The demand for F&Vs was same in *mandi* but due to reduction in supply in *mandi*, farmers had better position in *mandi*. For farmers, selling to RF resulted in time saving, transparent price, proper weighing of produce and lower cost of marketing of produce.

### **3.24 Quality specifications and Rejections**

For cauliflower, RF preferred medium (500-700 gms), white, compact curds; without insect pest attack and not exposed to sun-light. Cauliflower was needed to be harvested immediately after maturity; otherwise it lost its compactness. The quality was checked manually. Only the RR grade produce was procured from the farmers. In cabbage, RF preferred medium to large size flowers, without any cuts and disease and insect attack. The heads were to be harvested when they were solid (firm to hand pressure) but before they cracked or split. The leaves were to be unexpanded, crispy and tightly packed. In cabbage,

harvesting could be delayed by 1-2 days even after maturity which gave farmers some extra time to decide where to sell the produce.

Initially, rejection rates at CC were higher but overtime, they came down and ranged between only 1-2% as farmers became aware of the quality parameters. The average rejection rate in RF was 1.7%. About 90% farmers harvested the crops, according to the maturity stage of the crop. All the RF farmers did grading at the field level before selling to RF and *mandi*.

### **3.2A ABRL's More**

#### **3.2A1 Introduction**

ABRL is the retail arm of the Aditya Birla Group, a US\$ 24 billion group with a market capital of US\$ 31.5 billion and a Fortune 500 company. ABRL entered the Indian retail landscape with the acquisition of the 176 Trinethra supermarkets in January 2007 (table 3.2). In May 2007, ABRL launched its first supermarket store-'More' in Pune under the convenience store category and first hypermarket at Mysore in mid-2007. ABRL had increased its store count to 648 in 2008-09 and five hypermarkets compared to 492 supermarket stores and two hypermarket stores in the previous year, a growth of 29%. During the period, the retailer also raised its total retail space to 16,80,000 sq.ft., signifying a growth of 24%. Further, More registered over 100% growth in its retail turnover (from Rs. 52,700 lakh in 2007-08 to a staggering Rs. 112,800 lakh in 2008-09) (table 3.3). The ABRL established its first store in June, 2007 at Pune under the convenience store category. By early 2009, it had 655 convenience stores across several states of India.

**Table 3.2: ABRL-Retail journey at a glance**

<b>Year</b>	<b>Milestone</b>
January 2007	Acquisition of Trinethra Super Retail Ltd. 176 small format stores in AP, Karnataka, Kerala and TN
May, 2007	Launch of 'More'; First set of stores open in Pune
March, 2007	First More Megastore hypermarket opens in Mysore
April, 2008	Reaches 500 store mark

Source: Misra, 2009.

By mid 2009, it had 642 supermarkets and five hypermarkets across India with 400 stores in south India alone. With the acquisition of Trinethra Super Retail (TSR) in Andhra Pradesh,

Karnataka, Tamil Nadu and Kerala in January 2007, ABRL re-branded the Trinethra stores in South India as “More”. TSR stores also included the acquired FabMall stores. As a result, 275 Trinethra stores and 68 FabMall stores in Karnataka were re-branded as ‘More’. ‘More’ stores offered a wide range of product categories including F&V, staples, personal care, home care, household general merchandise and dairy products. ‘More.’ also had its own label across value, premium, and select ranges. In 2008-09, ‘More’ supermarkets recorded a sales growth of 15%. ABRL closed down 107 supermarkets as it did not find them profitable (*The Hindu Business Line*, Sept. 15, 2009; ABRL website). All the back-end operations of DC and CC were still managed in the name of TSR while the front end was done by the ABRL.

**Table 3.3: ABRL-Retail details**

Parameter	2007-08	2009 (Oct.)
Retail presence (cities)	55	67
Retail space (million sq. ft.)	1.35	1.84
No. of stores	492	653
<i>Supermarkets</i>	490	648
<i>Hypermarkets</i>	2	5
Retail turnover (Rs. Lakh)	52,700	112,800

Source: Misra, 2009.

In May 2009, ABRL introduced a value preposition for its customers in the form of ‘Hamesha Extra’ to offer extra value to its customers every time they came to shop at a More outlet. Stores with such a scheme registered a growth of 25-30%. ABRL had 14.3% of its revenue from its private label product portfolio, while remaining 85.7% came from branded products. ABRL introduced the ClubMore loyalty programme in May, 2007 in all its supermarket and five hypermarket stores. The scheme had enrolled 1.4 million members. Over 300,000 Clubmore members shop at ABRL stores every month and accounted for over 40% of the sales. The average bill value for a Clubmore member was thrice that of a non-member. Average footfalls (in terms of number of bills) at More supermarket were 160,000 on week-days and 200,000 on week-ends. ABRL aimed at improving the margins through: merchandising strategy implementation, enhanced share of private label and driving a profitable F&V business model. The higher turnover in the FY 2008-09 was achieved due to the closure of about 107 under-performing stores. The closure of these stores did not impact the turnover of the other stores but had indirect impact through better turns of inventories and

thereby freshness of the stocks (Misra, 2009). It had 350 SKUs with private labels which were priced 10-15% lower than the competing brands.

### **3.2A2 Store formats and retailing**

ABRL had 20 stores in Ahmedabad and 8 in Baroda which were catered to by the distribution centre based at Ahmedabad. The supermarket store space ranged from 2000 to 3000 sq. ft. and that of hypermarket around 75000 sq. ft. All outlets were managed by ABRL. The number of Stock Keeping Units (SKUs) varied between 2500-3000. The average number of employees per store was 14 including one manager and assistant manager. The average footfalls were around 300 during week-days and ranged 450-600 during week-ends. All stores sold F&Vs. ABRL claimed to have 30% share in organized retailing of F&V and considered RF as its main competitor. 22 tonnes of F&Vs were sold daily with each store selling about 0.6 tonnes. The dry SKUs like onion and tomato account for 70% F&V sales. The wastage at the retail store was around 10%. The consumer price was benchmarked against another retailers and purchase price. There was no price change in store during the day. The store devoted 25% space to F&V and the share of profit from FFVs in total profit in the store was ranged between 18-19%. Two employees were deployed to look after F&V. The stores sold F&Vs in loose form only. The cut and pack FFVs comprises of 0.5% of the total FFVs at the store. ABRL had been able to achieve viability in F&V business in Ahmedabad stores but not in Baroda and Surat. The promotional media used include newspapers and leaflets beside schemes during festivals. The quality maintenance and price determination remained major challenges.

#### **Box 3.1: Spencer's Retail**

*Spencer's Retail Limited is one of India's largest and fastest growing multi-format retailers with 246 stores, including 36 large format stores across 50 cities in India. Spencer's focuses on verticals like food and grocery, F&Vs, electrical goods and electronics, home and office essentials, garments and fashion accessories, toys, food and personal care, music and books. Currently, the two verticals-fashion and private label contribute about 15% of the total revenue of Spencer's which is targeted to be enhanced to 30% within next two years. In the last decade, Spencer's suffered due to the disproportionate rise in cost and incurred a loss of Rs. 220 crore. Earlier it had about 400 stores (Business Economics, 2009). Spencer's currently runs about 250 stores (including about 36 large format stores) across 50 cities in India, employing more than 6,000 people. The annual turnover was Rs. 1,050 lakh in FY 2008-09 compared to that of Rs. 792 lakh in FY 2007-08, reflecting an increase in turnover of 40%. Spencer's Retail recently launched its largest store of 12,000 sq.ft in Tiruchirapalli in Tamil Nadu. It is Spencer's first large format store in Tiruchirapalli and 60<sup>th</sup> in Tamil Nadu (Progressive Grocer, 2009).*

**Box 3.2 Comparative customer perception of quality of retailing of different types of retail outlets**

<i>Store Quality Characteristics&gt; Store Name</i>	<i>Customer experience</i>	<i>Store experience</i>	<i>Location</i>	<i>Merchandise quality</i>	<i>Merchandise pricing</i>
<i>Subhiksha</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>
<i>More</i>	<i>3</i>	<i>3</i>	<i>1</i>	<i>3</i>	<i>2</i>
<i>RF</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>
<i>6Ten</i>	<i>1</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>
<i>Spencer's</i>	<i>3</i>	<i>1</i>	<i>3</i>	<i>3</i>	<i>1</i>
<i>Local kirana</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>2</i>

Note: (rating on 1-3 scale) 1=Poor, 2=Good and 3=Excellent

Source: *Retailer*, 3(3), May, 2008, p. 39.

### **3.2A3 Processing and procurement**

The processing of FFVs was carried out at Distribution Centre (DC) which were hired and managed by a third party. It handled 24 tonnes of F&Vs daily. Most of the vegetables were dispatched loose or only in shrink wraps. The produce took 5-6 hours to reach from CC to DC and another 12 hours from DC to retail stores. The produce was stored for maximum of one day. The DC did sorting, grading and crating manually. The DC did not have any air conditioning facilities, grading table or processing facility. The DC cost was Re. 0.69/kg of produce. The DC operated in three shifts. Each shift was managed by one supervisor and 8-10 casual laborers. Thus, one DC catered to 20 stores in Ahmedabad and Baroda.

The requirements of vegetables at each CC was demand driven and the farmers were informed about the indent of each vegetable for a particular day by the managers at CC either by phone or personally. The farmers were aware of the price in advance before the transaction actually took place which helped the farmers to decide where to sell the produce. Sometimes ABRL defaulted partially as it procured small quantity of good quality produce and rejected remaining quantity and grades (photo 3.5). The farmers fetched lower price for the rest of the produce.



**Photo: 3.5: Grading of vegetables at CC**

There were about 125 listed farmers under the Farm Productivity Improvement Programme (FPIP). Under the FPIP, there is crop inspection card which has details of farmer profile, source of irrigation, type of land, crop name, variety and production, details of meetings, purpose of meeting, suggestions given, condition of crop and production (photo 3.6). ABRL conducted monthly meeting in villages jointly with the Bayer Crop Science to provide agri-input extension services and conducting trials in some of crops. Both ABRL and Bayer Crop Science implemented a sustainable partnership model involving all stakeholders in the okra value chain to achieve:

1. Overall improvement in net profitability, measured in terms of better yield, better quality and better prices for project farmers in Gujarat
2. Procurement of high-quality and uniform-sized okra from farmers via CCs of ABRL
3. Continuous supply of healthy and nutritious okra to consumers

Bayer Crop Science India implemented its “5P” production process comprising: production, protection, programme monitoring, passport and post-harvest to guide and monitor the project farmers.

**Production:** Nunhems, a subsidiary of Bayer Crop Science, introduced okra variety Sonal was selected and made available to the project farmers. The okra variety Sonal covers all ABRL’s downstream quality requirements and provides excellent resistance against infestation of Yellow Vein Mosaic Virus (YVMV). Nunhems vegetable seed experts guide all project farmers on Good Agricultural Practices (GAP).

**Protection:** A spray schedule was designed and project farmers implemented this spray schedule during the production season. It was a key success factor for the protection of okra against pest and diseases during the production process.

**Programme monitoring:** The whole okra production season was monitored spray schedule by regularly visiting the project farmers.

**Passport:** A new passport system was introduced to all farmers and stakeholders to keep spray schedule throughout the okra production season. All inputs were well documented and traceable.

**Post-harvest:** One of the main requirements of ABRL was the uniform size of the produced okras. Bayer Crop Science India gave farmers guidance on the grading to accommodate ABRL standards.

### **Photo 3.6: FPIP pass book for the farmer**

ABRL claims that all targets set in the okra food chain partnership project have been well exceeded. The project resulted in 40% increase in net income per acre of okra. Aditya Birla Retail Ltd received high-quality okra as per specification and quality requirements ([www.bavercropscience.com](http://www.bavercropscience.com)).

Out of these 125, 100 supplied at CC on a regular basis. About 12-15 delivered the produce daily at CC. Potato, cabbage, brinjal, cauliflower, tomato, bitter gourd, okra, chilli were the major vegetable crops delivered at CC from the adjoining villages like Prantij, Vadvasa, Chandrala, Majra etc. The total daily requirement of vegetables at CC was between 3.5 to 4.0 tonnes which was brought by around 15 farmers each with one SKU. The daily requirements of the tomato at CC were one tonne and the daily indent of the tomato remained incomplete due its short supply. The CC was comprised of a staff of 2 managers (CC incharge and field

officer) and 4-5 laborers. The laborers did unloading, weighing, grading and sorting of the produce. The CC incharge was on ABRL pay roll while the field incharge and laborers were hired by Global Agri. Pvt. Ltd.

ABRL procured from the farmers through individual, oral and non-registered contact. There was no contract between ABRL and the farmers. The vegetables were procured on the basis of their indent requirement. ABRL did not provide any agri-input to the farmers or any advance payments to farmers. The farmers were purchasing the agri-inputs either from PACS or *mandi*.

ABRL had about 45 active informal contract growers and also bought from APMC market through vendor and purchased apples from Adani Agri-Fresh through a vendor. Major vegetables like cabbage, cauliflower, chilies, bitter gourd and *bhindi* were procured from one or two farmers daily as the company required vegetables in small quantities. Quality check was done manually at CC through the CC incharge. The previous day *mandi* price was the farmer price for the next day. The farmers were paid in cash only and payment was made through CMS (Cash Management Services) of ICICI Bank, the next day. Four copies of purchase receipt were made one each for the farmer, the bank, the CC and the DC and had details of farmer quantity bought, price and type of vegetable. The procurement cost including transport cost was Re. 0.85 /kg. Company bought only A grade produce.

There were about 15 to 20 farmers identified at CC for each SKU and each farmer could supply 3-4 SKUs. There was no commitment to buy and sell in advance. Only in exotic crops like broccoli and cherry tomato there was assured buy back and these were mostly grown by large farmers. The CC staff provided extension on crop variety and cultivation practices which had led to new ways of growing bottle gourd known as ‘telephone system’ where it was raised above the ground unlike the earlier practice. Similarly, ABRL introduced golden variety in cabbage. For small quantity SKUs, small farmers were preferred. The farmers’ benefit of supply to ABRL included prompt and fair payment, fair weight and price and lower marketing cost. The CC contributed 25-40% of the total procurement depending upon the season. Farmer’s price for the day was not lowered but was revised upwards if

needed. CC procurement was not cheaper in price but worked out less costly as there was no dump material as only A grade material was procured. The prices could vary across days widely as they were linked to *mandi* prices e.g. price of *giloda* varied from Rs. 4.5-17/ kg across seven lots giving an average price of Rs. 9.19 /kg.

### **3.2A4 Quality specifications and Rejections**

The quality parameters included color, size and shape and health of the produce. For example, cabbage should be between 400-800 gms, potato 40-65 mm in diameter. The quality specifications of ABRL for cauliflower were: white, compact, medium to large size of curds (generally 500-800 gm) without any insect-pest and disease attack. Yellow curds highly exposed to sunlight were rejected. For tomatoes, ABRL preferred bigger size, red coloured, shiny, matured tomatoes; free from insect-pest and disease attack. Pressed and exposed to sunlight tomatoes were not preferred. In one kg, there should be around 8-10 tomatoes. Most of the farmers harvested the crops on the basis of maturity of crop rather than the requirement of ABRL (photo 3.7). ABRL did not differentiate on price as it purchased only A grade produce. The farmers sold cauliflower without any grading in *mandi* and they obtained a single price for that in *mandi*. The tomatoes were graded and packed grade-wise and sold to *mandi* at different prices according to different grades. In the event of shortage of supply of vegetables in the market, ABRL field officer visited the field and informed the farmers of higher price if sold to ABRL.



**Photo 3.7: Vegetables being brought at the CC**

The rejection rate at ABRL was 2.5%. The rejected vegetables were sold to the Jamalpur *mandi* at very low price. If the produce was of too poor quality then it was used as fodder. Initially, when ABRL started the operations in the area the rejection rates were as high as 10% but, overtime as farmers became aware of the quality standards of ABRL, the rejection rated reduced to 2.5%. After sorting and grading at CC before purchase, another quality check was carried out at DC level where rejections were amounted to 0.5%.

### **3.3 The RF and ABRL farmer interface**

The primary data for the study was collected from RF and ABRL farmers supplying the produce at Majra CC (about 35 km. from Ahmedabad) in case of RF and Tazpur CC in case of ABRL (about 40 km. from Ahmedabad). In case of RF, farmers belonged to villages of Majra, Chandrala, and Ghadkan and Prantij, Tazpur, Vadvasa, Majra and Chandrala in case of ABRL in Sabarkantha district of Gujarat. Two major crops- cauliflower and cabbage – in case of RF and -cauliflower and tomato- in case of ABRL were taken for study as these were the major crops procured by the chain in terms of volumes and number of farmers (table 3.4).

**Table 3.4: Farmer category and crop-wise distribution of RF and ABRL farmers**

Retail chain>	RF		ABRL	
Crops>	Cauliflower	Cabbage	Cauliflower	Tomato
Farmers' category				
Small (>2.5 to ≤5 acres)	2 (14.3)	3 (21.4)	-	-
Semi-medium (>5 to ≤10 acres)	5 (35.7)	4 (28.6)	6 (50.0)	5 (50.0)
Medium (>10 to ≤25 acres)	4 (28.6)	4 (28.6)	5 (41.7)	4 (40.0)
Large (>25 acres and above)	3 (21.4)	3 (21.4)	1 (8.3)	1 (10.0)
All	14 (100)	14(100)	12 (100)	10(100)

Note: \* Figures in brackets are % in total number of farmers in each crop and chain

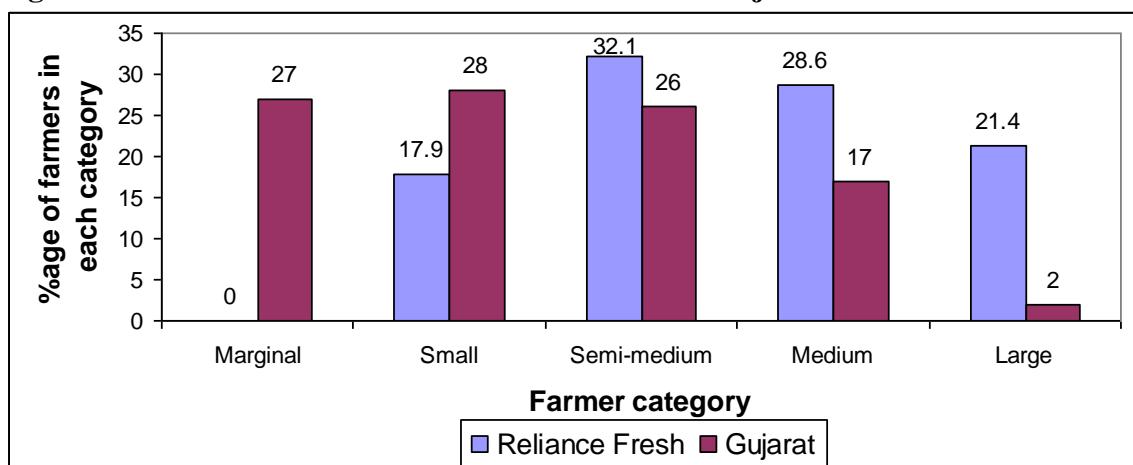
#### **3.31 RF-Farmer profile**

About 75% of farmers were associated with RF for less than one year. 15% for 1-2 years, and very few (10%) were associated with the chain for more than two years. Of the total farmers interviewed, about 1/3<sup>rd</sup> were semi-medium followed by medium (29%) and large (21%) and small farmers (18%). The average owned holdings of small, semi-medium, medium and large farmers were of the order of 4.3, 10.6, 15.6 and 29.3 acres respectively. Leasing in practice was present among all categories except semi-medium farmers. But, leasing out practice was found in semi-medium and medium categories only. With the leasing in and leasing out

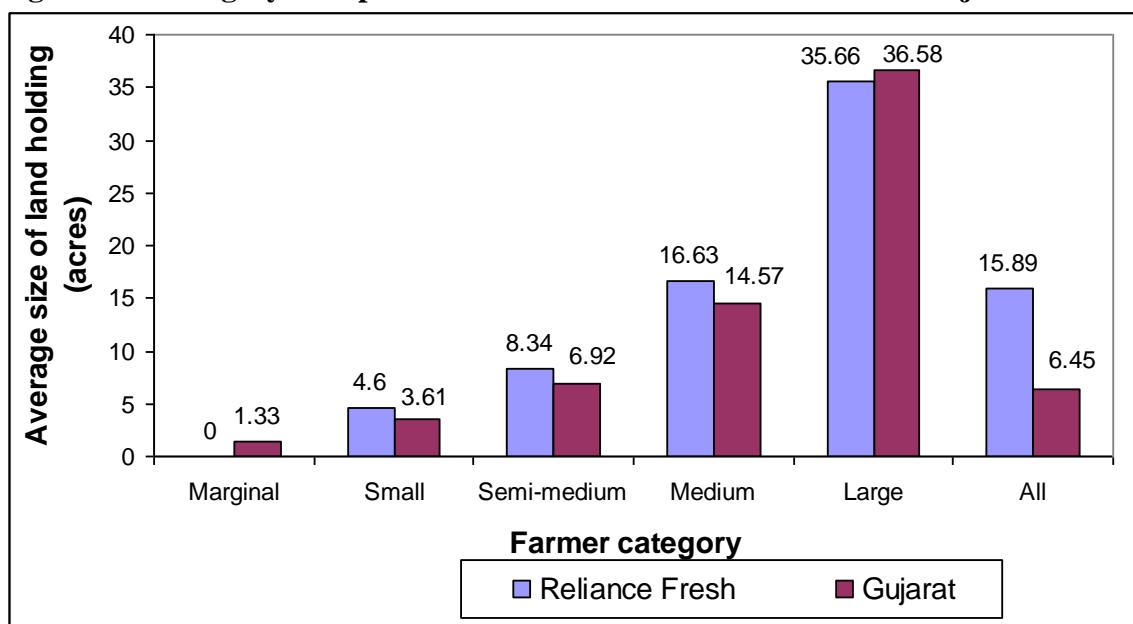
practice, the average operated land holdings of small, medium, and large farmers increased to 4.6, 16.63, and 35.66 acres respectively, while that of semi-medium farmers decreased to 8.34 acres. Overall, the average operated holding size increased from 14.91 acres to 15.89 acres. The %age of the leased-in area in operated area was the highest in case of medium farmers (17.7%) followed by medium (8.0%) and small farmers (6.5%), with overall being 12.9%. The leased out land as proportion of owned land was higher in case of semi-medium farmers (21.0%) compared with only 8.0% among medium farmers; and overall average being 7.2%. The %age of cultivated area to total was the highest in case of small farmers (96%), followed by medium (92%), semi-medium (87%) and large farmers (71%), and 81% among all farmers (table 3.5).

RF did not have any marginal farmers as against 27% marginal holdings in Gujarat. The RF also had a lower proportion of small farmers (18%) compared with the proportion of small farmers (28%) in Gujarat. But, RF had higher proportions of semi-medium (32%), medium (29%) and large (21%) farmers compared with the respective proportions of 26% in semi-medium, 17% medium and 2% large landholders in Gujarat (fig. 3.2). The average operated area of retail chain farmers (15.89 acres) was much higher than the average size of the operational holding (6.4 acres) in Gujarat (fig. 3.3) (Singh, 2008). Further, small and semi-medium farmers who accounted for 50% of all farmers together accounted for only 22% of the area operated and only small ones just 5% despite being 18% of the total farmers surveyed (table 3.5).

**Figure 3.2: Profile of RF farmers and all farmers in Gujarat**



**Figure 3.3: Category wise profile of RF farmers with all farmers in Gujarat**



**Table 3.5: Distribution of RF farmers by land holding category (in acres)**

Parameters> Farmer category	No. of farmers	Land owned	Leased-in land#	Operated land	Leased - in land as %age of operated area*	Net cultivated area*	Average operated area (% of total) in Gujarat
Marginal	-	-	-	-	-	-	1.33 (27) {5.67}**
Small	5 (17.9)\$	4.3	0.3 (-)	4.6{5.2}**	6.5	4.4 (95.7)	3.61 (28) {15.66}
Semi-Medium	9 (32.1)	10.56	- (2.22)	8.34 {16.9}	-(21.0)	7.22 (86.6)	6.92 (26) {27.35}
Medium	8 (28.6)	15.63	2.25 (1.25)	16.63 {29.9}	13.5 (8.0)	15.38 (92.5)	14.57 (17) {37.71}
Large	6 (21.4)	29.33	6.33 (-)	35.66 {48.1}	17.7	25.33 (71)	36.58 (2) {13.61}
All	28(100)	14.91	2.05 (1.07)	15.89 {100}	12.9 (7.2)	12.93 (81.4)	6.45 (100) {100}
Landholders with sharecropper	6 (21.4)	20.0	1.41	21.41	6.6	17.12 (80)	-

Note: \$- Figures in brackets are % of each category in total number of farmers.

\*Figures in parenthesis indicate %age of net cultivated area in operated area. #Figures in brackets are for leased out land. \*\*these figures are % share of each category in total area operated.

The large landholders in the study area were found to practice two types of sharecropping systems. In one, the landowner paid 1/5<sup>th</sup> of the gross income from the crop to the sharecropper ('Bhagia'). All the variable input costs were borne by the farmer while labour cost was borne by the sharecropper. The system was mainly practiced in cereal crops and other crops like cotton and castor which were less labour intensive. In the other system, sharecropper shared 1/4<sup>th</sup> of input costs as well as value of produce with the landowner. Initially, all the expenses including labour were paid by the farmer, but 1/4<sup>th</sup> of the total expenses was deducted from the 1/4<sup>th</sup> of the gross return from the crop paid to the sharecropper. This system was commonly practiced in labour intensive crops like vegetables including cauliflower, cabbage and tomato. Of all the RF farmers interviewed, 21% of the farmers had sharecroppers and their average operated land holding was 21.4 acres which was higher than the overall average operated size of holding across all farmers (15.89 acres). Farmers with sharecroppers had lower leased-in land as a %age of the operated land (6.6%) than the overall average of about 13%.

The %age of farmers practising leasing-in was the highest among large farmers (66.7) followed by medium (50) and small farmers (20), with the overall average being 32%. Leasing-out was practised by only 25% and 22.2% of farmers in medium and semi-medium farmer categories respectively; overall practised by 14% farmers only. The farmers who practised leasing-in, in general, had lower average owned landholdings than average size of owned land holdings of all farmers. Similarly, semi-medium and medium farmers who leased out land had higher average own land holdings than the respective averages in each category and the overall average owned holding (table 3.6).

**Table 3.6: Category-wise distribution of leasee/leaser RF farmers (acres)**

Parameters> Farmer Category	No. of farmers	%age of farmers leasing in/out land	Land owned	Leased-in land	Leased out land	Operated land
Small	1	20.0	1.5	1.5	-	3.0
Semi-medium	- (2)	- (22.2)	- (20.0)	-	- (10.0)	- (10.0)
Medium	4 (2)	50.0 (25.0)	13.75 (20.0)	4.50	- (5.0)	18.25 (15.0)
Large	4	66.7	19.0	9.5	-	28.5
All	9 (4)	32.1 (14.3)	14.72 (20.0)	6.39	- (7.5)	21.11 (12.5)

Note: Figures in parenthesis are land details for those who leased out land; others are for those who leased-in.

Small farmers had 100% tubewell irrigated area in comparison with about 93% irrigated area in medium, 87% in semi-medium and 81% in large farmers; the overall %age being 88. Small farmers did not have any drip irrigated area. The %age of drip irrigated farmers and %age of drip irrigated area in semi-medium farmers was 33.3 and 12.3 respectively. The respective figures in medium category were 75% and 21%. All large farmers had about 55% of their area as drip irrigated in comparison to only 54% of all farmers who had 33% drip irrigated area. In general, %age of drip irrigated farmers and that of drip irrigated area increased with increase in size of land holdings (table 3.7). Only 40% of small farmers had farm machinery like tractor-cum-trailer, plough/cultivator, pumpset/borewell compared to ownership of machinery by all farmers in other categories.

**Table 3.7: Category-wise distribution of RF farmers by source of irrigation (acres)**

Irrigation source> Farmers' category	Tubewell irrigated area	Irrigated area as %age of operated land	Drip irrigated area	%age of drip-irrigated to total irrigated area
Small	4.6	100.0	-	-
Semi-medium	7.22	86.6	0.89 (33.3)	12.3
Medium	15.4	92.6	3.25 (75.0)	21.1
Large	29.0	81.3	16.0(100.0)	55.2
All	14.0	88.1	4.64 (53.6)	33.1

Note: Figures in brackets indicate the %age of farmers with drip irrigation in total.

In general, the family size of the farmers in each category increased with increase in size of land holdings. Thus, family size of large farmers was larger (13) than the medium (12), semi-medium (8) and small farmers (5). The %age of farm family workers of the total family size was around 61% in small and semi-medium farmers, while it was lower in medium (39%) and large (45%) farmers, the overall being 49% (table 3.8). The heads of all the RF households (henceforth hhs) were fairly literate as more than 50% of them were either graduate or post-graduate and more than 21% SSC and HSC degree holders each. All the heads of large farmer households and 80% of heads of small farmer hhs and 44% of semi-medium farmer hhs were graduate. The heads of medium farmer hhs were either HSC degree holders or SSC degree holders.

40% of small farmers had off-farm income compared to 33% in semi-medium and 25% in medium farmers with overall average being 32%. The large holders did not have any off-

farm income. Thus, off-farm income declined with increase in size of land holding. The number of adults/acre of land with off-farm income was relatively higher in small farmers (0.17) compared to only 0.04 and 0.06 in semi-medium and medium farmers respectively, the overall being 0.03. The medium farmers had higher number of adults/family (1.0) compared to small (0.8) and semi-medium farmers (0.3), overall average being 0.5. The medium farmers had higher off-farm income of Rs. 3750/month/person compared to that of small (Rs. 2000/month/person) and semi-medium farmers (Rs. 1333.3/month/person). Thus, medium farmers had a lower %age of households with off-farm income and higher off-farm income/person/month than the other categories (table 3.9).

**Table 3.8: Farmer category-wise average family size and structure of farm workers**

Family details> Farmers' Category	Family members				Average family size	Farm family workers				Average farm workers	%age of farm workers in family		
	Adult		Children			Male	Adult		Children				
	Male	Female	Male	Female			Male	Female	Male	Female			
Small	2.2	1.8	0.6	-	4.6	1.8	1.0	-	-	2.8	60.9		
Semi-medium	2.7	2.3	1.0	1.8	7.8	2.2	1.7	0.7	0.2	4.8	61.5		
Medium	4.5	4.2	1.5	1.7	11.9	2.7	1.5	0.5	-	4.7	39.5		
Large	5.0	3.0	2.7	2.7	13.4	3.0	2.0	0.7	0.3	6.0	44.8		
All	3.6	2.9	1.4	1.6	9.5	2.5	1.6	0.5	0.1	4.7	49.5		

**Table 3.9: Category-wise distribution of RF farmers by average off-farm income**

Off farm parameter> Farmer category	% of hhs having off-farm income	No. of adults/acre of land with off-farm income	No. of adults/family with off-farm income	Off-farm income (Rs./month/person)
Small	40.0	0.17	0.80	2000.0 (5000.0)
Semi-medium	33.3	0.04	0.33	1333.3 (4000.0)
Medium	25.0	0.06	1.00	3750.0 (7500.0)
All	32.1	0.03	0.53	1857.1 (5777.8)

Note: Figures in parenthesis indicate the averages for only those hhs which had off farm income.

The %age of Gross Cropped Area (GCA) under contact crops was same (47%) both in case of farmers with sharecroppers and all RF farmers. But, farmers with sharecroppers had lower %age of GCA under cauliflower (12%) than that in case of all farmers (17%). The %age of GCA under cabbage was same (20%) across both groups. Across all categories, %age of GCA under contact vegetable crops was higher in small farmers (75%) followed by semi-

medium (65%), medium (51%) and large farmers (29%), the overall average being 47% (fig. 3.4). Small farmers put higher %age of GCA under cauliflower (34%) than that by semi-medium (23%), medium (17%) and large farmers (10%). Altogether, RF farmers put about 17% of GCA under cauliflower. Small farmers did not have any area under exotic vegetables, while %age of GCA under these crops by large (1.5%) and medium farmers (1.4%) was higher than that by semi-medium farmers (0.9%). The %age of GCA under other vegetables was higher in small farmers (15%) than that in semi-medium (13%), medium (11%) and large farmer (0.2%) categories, the overall average being 7.5%. Large farmers put higher %age of GCA under paddy (20%), potato (14%) and cotton (13%) than the average for all categories (12%, 9% and 10% respectively). In fact, small farmers did not grow any paddy, potato or cotton crop. The cropping intensity was higher on small farms (185) than that on semi-medium (162), medium (160) and large farms (144). Thus, small farmers were intensive cultivators of vegetables than the other farmer categories (table 3.10).

**Table 3.10: Category-wise distribution of RF farmers by cropping pattern and cropping intensity**

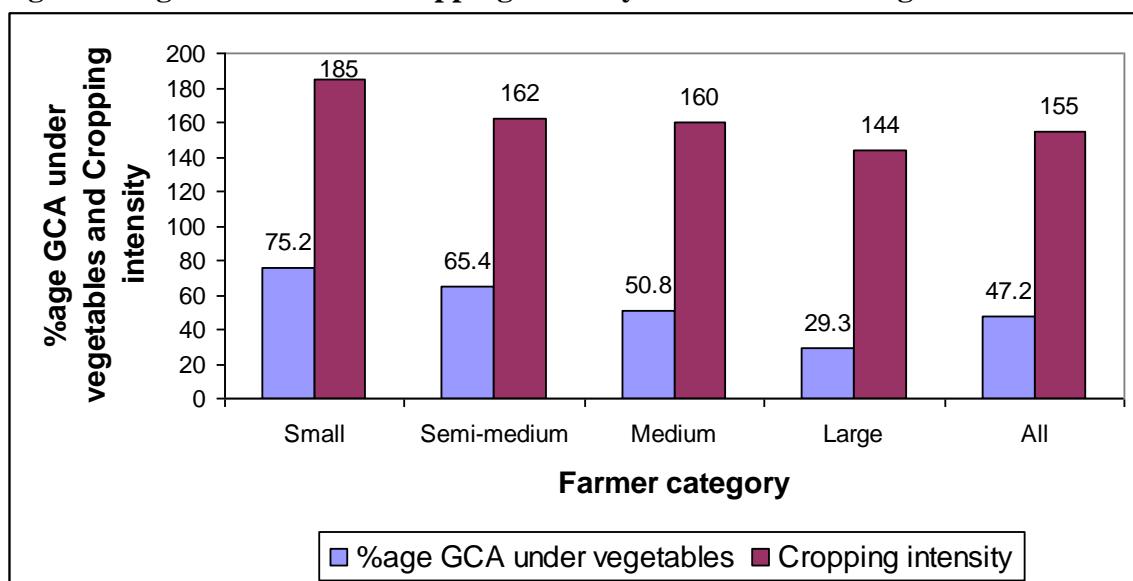
Farmer category> Crop-wise GCA (acres)	Small	Semi-medium	Medium	Large	All
<b>Contact crops</b>					
Cauliflower	2.80(34.4)	2.75(23.5)	4.22(17.1)	3.64(9.9)	3.37(16.8) (12.0)**
Cabbage	2.12(26.0)	3.30(28.2)	5.18(21.0)	6.44(17.6)	4.30(21.4) (20.0)**
Exotics	-	0.10(0.9)	0.35(1.4)	0.55(1.5)	0.25(1.2)
Other vegetables*	1.20(14.7)	1.50(12.8)	2.75(11.2)	0.08(0.2)	1.50(7.5)
<b>Contact crop GCA and % of total GCA</b>	<b>6.12(75.2)</b>	<b>7.65(65.4)</b>	<b>12.50(50.8)</b>	<b>10.71(29.3)</b>	<b>9.42(46.9) (47.2)**</b>
<b>Non-contact crops</b>					
Wheat	1.50(18.4)	1.80(15.4)	3.07(12.5)	5.35(14.6)	2.87(14.3)
Paddy	-	1.25(10.7)	1.72(7.0)	7.50(20.5)	2.50(12.4)
Potato	-	-	2.50(10.2)	5.07(13.9)	1.80(9.0)
Cotton	-	0.50(4.3)	2.82(11.5)	4.82(13.2)	2.00(10.0)
Fodder	0.52(6.4)	0.50(4.3)	2.00(8.1)	3.15(8.6)	1.50(7.5)
<b>Non-contact GCA and % of total GCA</b>	<b>2.02(24.8)</b>	<b>4.05(34.6)</b>	<b>12.11(49.2)</b>	<b>25.89(70.7)</b>	<b>10.67(53.1)</b>
Grand GCA	8.14 (100.0)	11.70 (100.0)	24.61 (100.0)	36.60 (100.0)	20.09 (100.0)
Net cultivated area	4.40	7.22	15.38	25.33	12.93
Cropping intensity	185	162	160	144	155

Note: Figures in brackets are % share of each crop in GCA in each category.

\* *bhindi*, bottle gourd, brinjal, cucumber, bitter gourd and French beans

\*\*for landholders with sharecroppers

**Fig. 3.4: Vegetable area and cropping intensity across farmer categories -RF farmers**



### 3.32 Cauliflower production and procurement

Cauliflower is a three month crop planted either in June-July or November-December. Harvesting in cauliflower starts two months after transplanting and continues for one month till fully harvested. Of the total cost of production of Rs. 43317/acre in cauliflower, major costs of production were hired labour (18.0%), pesticides (17%), fertilizers (15%), irrigation (14%), and seeds (14%) (table 3.11).

**Table 3.11: Cauliflower production costs of RF farmers**

Type of farmer> Cost (Rs./acre)	Farmers with sharecropper/s	Owner cultivators	All
Land rent	3200.0 (6.0)	2974.4 (7.3)	3023.1 (7.0)
Land preparation	1880.0 (3.5)	1748.8 (4.3)	1776.9 (4.1)
Seed	6000.0 (11.3)	6254.5 (15.5)	6200.0 (14.3)
FYM	1500.0 (2.8)	1118.2 (2.8)	1200.0 (2.8)
Fertilizer	6250.0 (11.8)	6631.8 (16.4)	6550.0 (15.1)
Pesticide	7242.0 (13.6)	7570.4 (18.7)	7500.0 (17.3)
Irrigation	6265.3 (11.8)	6097.3 (15.1)	6133.3 (14.2)
Labour	Hired 20744 (39.1)	4107.6 (10.1)	7816.9 (18.0)
	Family -	3967.0 (9.8)	3116.9 (7.2)
Cost of production	53081.3 (100.0)	40470.4 (100.0)	43317.1 (100.0)

Note: Figures in brackets are % share in average cost of production for each category.

The farmers did not spray any weedicides, but practised intercultural operations with either hired (produce sharing labour) or family labour. The labour cost and, thus cost of production, was higher for sharecropping system based farmer owners compared with that of the owner cultivators (table 3.11).

Cauliflower was delivered at CC in loose form only (photo 3.8). In Jamalpur *mandi*, farmers could sell cauliflower packed in cloth only which was not returned to farmers. The packing cloth cost between Rs. 10-12. Thus, farmers did not incur any packing cost in selling cauliflower to RF as compared to that in *mandi*. Large farmers generally preferred to sell in Jamalpur *mandi* than to RF because RF's indent requirement was very small. The transportation cost was also lower in RF because of close proximity of its CC to the farmers' field. Generally, transportation costs of for one delivery of cauliflower at CC in tractor-trailer cost between Rs. 150-200, if hired. The cost was, in fact, lower as most of the farmers owned tractors-trailers. The transporters charged Re. 0.50/kg to transport the produce to Jamalpur *mandi*. Thus, resulting cost of transportation was higher while selling to *mandi* (Re.0.5/kg) compared to that in retail channel (Re. 0.15/kg). The farmers also reported spoilage and weight losses in *mandi* channel which were altogether absent in retail channel. Thus, in all, transaction costs of the farmers were reduced to less than 1/4<sup>th</sup> in selling to RF (table 3.12).

**Table 3.12: Transaction costs of RF farmers in cauliflower**

Channel> Transaction costs	RF		<i>Mandi</i>	
	(Rs./kg)	(Rs.)	(Rs./kg)	(Rs.)
Cost of packing cloth	-	-	0.16	2986.7
Transportation cost	0.15	2800.0	0.50	9333.4
Spoilage/weight loss	-	-	0.04	746.7
Marketing cost	0.15	2800.0	0.70	13066.7

Average yield of cauliflower of RF farmers was 186.7 quintals/acre. The farmers sold only 41% of the cauliflower to the retail channel and 59% in *mandi* consisting of 42% in 'A' grade, 11.3% in 'B' grade and 5.7% in 'C' grade. The rejection rate of 1.7% at CC forced farmers to sell the rejected produce as 'C' grade produce in *mandi*. Reliance Retail (RR) grade cauliflower fetched a price of Rs. 9.0/kg compared to 'A' grade price of Rs. 8.0/kg in *mandi* and the price for 'B' and 'C' grades in *mandi* was Rs. 4.5/kg and Rs. 2.5/kg



**Photo 3.8: Delivery of vegetables by farmers at CC**

respectively. But, the average price for January-April,09 for cauliflower was Rs. 7/kg and Rs. 6.4/kg in RF and *mandi* respectively. Although cost of production of Rs. 2.32/kg was same in both channels, but reduced transaction cost in retail channel (Re. 0.15/kg.) resulted in higher costs of production and marketing in *mandi* channel (Rs. 3.02/kg) than that in retail channel (Rs. 2.47/kg). Farmers received net income of Rs. 4.5/kg in retail channel compared to Rs. 3.4/kg in *mandi* channel and Rs. 3.9/kg from both channels (table 3.13).

**Table 3.13: Average proportionate costs and returns of RF farmers in cauliflower**

Marketing channels> Costs/returns (Rs./acre)	RF	Mandi
%age of crop sold to each channel	40.3	59.7
Quantity of each grade sold (Kg/acre)	7522.7	11144.0
Price in each channel (Rs./kg)	7.02	6.41
Gross returns	52809.3	71433.3
Cost of production	17456.8(2.32)	25860.3(2.32)
Marketing cost	1128.4(0.15)	7800.8(0.70)
Cost of production and marketing	18585.2(2.47)	33661.2(3.02)
Net income in each channel	34224.2(4.55)	37771.8(3.39)
Net income	71996.0(3.86)	

Note: Figures in brackets are average cost of production and net income per kg.

### 3.33 Cabbage production and procurement

Cabbage is a cool-season crop sown in August, November and March for early, main season, and late crop respectively. The seedlings become ready for transplanting in 4–6 weeks

depending on weather conditions. The harvesting generally starts 75 days after sowing. The cost of production of cabbage was Rs. 44721.4/acre. Major costs of production of cabbage included cost on pesticides (22%), hired labour (18%), fertilizers (14%), seeds (13%) and irrigation (12.5%). In cabbage also, farmers did not spray any weedicide; instead did only intercultural operations with hired (produce sharing) or family labour. The cost of labour and total cost of production was same for two types of farmers (table 3.14).

**Table 3.14: Cabbage production costs of RF farmers**

Type of farmer> Cost (Rs./acre)	Farmers with sharecropper/s	Owner cultivators	All
Land rent	3250.0 (7.4)	2935.0 (6.6)	3025.0 (6.8)
Land preparation	2232.2 (5.0)	1965.5 (4.4)	2041.7 (4.6)
Seed	5426.0 (12.3)	5792.1 (13.1)	5687.5 (12.7)
FYM	1800.0 (4.1)	1706.62 (3.9)	1733.3 (3.9)
Fertilizer	6000.0 (21.3)	6291.62 (22.3)	6208.3 (21.8)
Pesticide	9425.0 (12.3)	9880.0 (22.3)	9750.0 (21.8)
Irrigation	5420.0 (12.3)	5683.62 (12.8)	5608.3 (12.5)
Labour	Hired	10660 (24.1)	6234.34 (14.1)
	Family	-	3799.88 (8.6)
Cost of production	44213.2 (100.0)	44288.7 (100.0)	44721.4 (100.0)

Note: Figures in brackets are % share in average cost of production for each category.

While delivering produce at CC of RF, farmers incurred cost of transportation of Re. 0.20/kg as against Re. 0.50/kg in *mandi*; mainly due to proximity of CC to their farms and use of their owned two wheelers/cars or tractor-cum-trailers to bring the produce. Moreover, farmers had to pack their produce in cloth in *mandi* which was not returned. In *mandi*, farmers also reported spoilage/weight loss of produce (table 3.15).

**Table 3.15: Transaction costs of RF farmers in cabbage**

Channel> Transaction costs	RF		<i>Mandi</i>	
	(Rs/kg)	(Rs.)	(Rs/kg)	(Rs.)
Cost of packing cloth	-	-	0.15	2887.5
Transportation cost	0.20	3850	0.50	9625.0
Spoilage/weight loss	-	-	0.05	962.5
Marketing cost	0.20	3850	0.70	13475.0

The average yield of cabbage of RF farmers was 192.5 quintal/acre. Although RF procured about 41% of the farmers' produce but after accounting for rejection rate of 1.7%, the net produce sold to RF stood at 40.3%. The rejected produce was sold as 'C' grade in *mandi*

which was 5.4% of the total. ‘A’ grade sold in *mandi* was 43% and ‘B’ grade 10.6% of the total production. Farmers received higher price for RR grade (Rs. 4.5/kg) compared with price of A grade (Rs. 4.0/kg) in *mandi* and the price for B and C grade in *mandi* was Rs. 3/kg and Rs. 1.5/kg respectively. But, the average price for January-April, 09 for cauliflower was Rs. 4.6/kg and Rs. 4.4/kg in RF and *mandi* respectively. The total cost of production and marketing in retail channel was lower than that in the *mandi* channel mainly due to the lower transaction cost in retail channel. The net income in retail channel was Rs. 2.0/kg as compared to only Rs. 1.4/kg in *mandi* with overall net income earned in both channels being Rs. 1.6/kg. (table 3.16).

**Table 3.16: Average proportionate costs and returns of RF farmers in cabbage**

<b>Marketing channels&gt; Costs/returns (Rs./acre)</b>	<b>RF</b>	<b>Mandi</b>
%age of crop sold to each channel	40.3	59.7
Quantity of each grade sold (Kg/acre)	7757.75	11492.2
Price in each channel (Rs./kg)	4.57	4.38
Gross returns	35452.9	50336.0
Cost of production	18022.7 (2.32)	26698.7 (2.32)
Marketing cost	1551.6 (0.20)	8044.7 (0.70)
Cost of production and marketing	19574.3 (2.52)	34743.3 (3.02)
Net income in each channel	15878.6 (2.05)	15592.7 (1.36)
Net income	31471.4 (1.63)	

Note: Figures in parenthesis are per kg. costs and returns.

Majority of the farmers sold produce to RF as it saved a lot of time. They had to wait in queues in *mandi* and, sometimes pay for meals. The saving of transportation costs and packing cloth for cauliflower and cabbage were other reasons reported by the farmers for selling to RF. The retail chain linkage had improved quality of their produce for some of them as they became more quality conscious. Confirmation of price in advance and higher price were other reasons reported by some farmers (table 3.17). But, farmers sold produce in *mandi* due to excess production and lower indent from RF. Moreover, rejected produce and lower grade produce also had to be sold in *mandi*. Sometimes, indent of RF did not match with the harvest of the produce (table 3.18). About 39% RF farmers defaulted mainly due to lower indent (45%) of RF. About 36% defaulted when price in RF was lower than the *mandi* price. Some of the farmers (18%) defaulted due to higher production of vegetables which forced them to sell entire produce in *mandi* in order to avoid transportation costs to two channels.

**Table 3.17: Distribution of farmers by reasons for selling to RF (multiple responses)**

Reasons for selling to RF	%age no. of farmers reporting
Time saving	26 (92.9)
Less transportation costs	16 (57.1)
Saving cost of packing cloth	10 (35.7)
Improvement in the quality of produce	4 (14.3)
Confirmation of price in advance	4 (14.3)
Higher price	2 (7.1)
Saving expenses of meal	2 (7.1)

Note: Figures in brackets are % of total farmers surveyed.

**Table 3.18: Distribution of farmers by reasons for selling to *mandi* (multiple responses)**

Reasons for selling to RF	%age no. of farmers reporting
Excess production	20 (71.4)
Lower indent of RF	8 (28.6)
To sell lower grades and rejected produce	6 (21.4)
Mismatch of indent with harvest	2 (7.1)

Note: Figures in brackets are % of total farmers surveyed.

### 3.34. Prices received in RF and *Mandi* and retail prices

The average RF cauliflower price was higher than that in *mandi* across all the four months. Overall, average price in RF was Rs. 7.0/kg compared to an average of Rs. 6.4/kg in *mandi*. The standard deviation of *mandi* price was higher than that in RF price across all the four months, except January. The coefficient of variation also showed a lower variation across days and months (except January where it was slightly higher) in case of RF prices as against that in *mandi* prices revealing that the RF prices were more stable than the *mandi* prices (table 3.19).

**Table 3.19: Month-wise average price (Rs./kg), SD and CV in daily price of cauliflower\***

Month>	January, 09		February, 09		March, 09		April, 09		All(January-April, 09)	
Channel>	<i>Mandi</i>	RF	<i>Mandi</i>	RF	<i>Mandi</i>	RF	<i>Mandi</i>	RF	<i>Mandi</i>	RF
Price	5.93	6.16	3.47	4.39	7.63	8.44	8.23	8.92	6.41	7.02
S.D.#	2.56	2.70	1.22	1.18	1.47	0.96	0.96	0.86	2.46	2.41
C.V.**	43.19	43.87	35.08	26.89	19.28	11.32	11.68	9.67	38.28	34.22

\*at RF CC and Jamalpur *mandi* in Ahmedabad; \*\*CV: Coefficient of variation; #SD: Standard Deviation; Source: RF CC and [www.agmarknet.nic.in](http://www.agmarknet.nic.in) (downloaded on Sept. 15, 2009)

In cabbage too, average RF prices were higher than that in *mandi* across all the four months. Overall, average price in RF price was Rs. 4.6/kg compared to average *mandi* price of Rs. 4.4/kg. The standard deviation in *mandi* price was higher than that in RF price across all the four months except April. The coefficient of variation also showed a lower variation across days and months (except April) in RF prices as against those in *mandi* prices indicating that the RF prices were more stable than the *mandi* prices (table 3.20).

Even during the fieldwork days, the RF prices were found to be higher than the *mandi* prices for 'RR'/'A' grade for both cauliflower and cabbage. But, it is important to note that these are best grade produce prices and therefore not strictly comparable as produce sold in *mandi* is mixed (A.B and C grades). Therefore, it is possible that the farmer may realise a higher net price for his total produce sold in *mandi* compared with part sales to RF and part to the *mandi*. The Reliance retail prices for all the vegetables (except cauliflower and *bhindi*) were more than double of the procurement prices at the CC level and producer's share in consumer rupee varied between 40-60% across vegetables (table 3.21).

**Table 3.20: Month-wise average price (Rs./kg), and coefficient of variation in daily price of cabbage\***

Month>	January, 09		February,09		March,09		April,09		All (January-April 09)	
Channel>	<i>Mandi</i>	RF	<i>Mandi</i>	Reliance Fresh	<i>Mandi</i>	RF	<i>Mandi</i>	RF	<i>Mandi</i>	RF
Average Price	3.78	4.42	3.33	3.46	4.96	5.05	5.15	5.30	4.38	4.57
S.D.#	0.68	0.65	0.58	0.43	0.58	0.49	0.72	0.72	1.00	0.91
C.V.**	18.05	14.63	17.55	12.38	11.75	9.69	13.93	14.78	22.79	20.07

\*at RF CC and Jamalpur *mandi* in Ahmedabad; \*\*C.V: Coefficient of variation; #SD: Standard Deviation

Source: same as in table 3.20.

**Table 3.21: Crop-wise prices of major vegetables at CC and retail store\***

<b>Price (Rs/kg)&gt; Major vegetables</b>	<b>CC</b>	<b>Retail Store</b>
Cauliflower	9.0	16.90
Cabbage	4.5	9.5
<i>Bhindi</i>	18.0	28.0
Cluster bean	11.0	28.0
Brinjal round green	7.5	16.0
Red cabbage	18.0	36.0

\* as on 25.04.2009.

### 3.35 Problems in the interface

57% of RF farmers faced problems in their link with the retail chain. The lower indent from RF and higher rejection rates were the major problems. Sometimes, lack of crates, lower price for RR grade, and little time given by the chain to harvest the produce for which farmers had to hire casual labour at higher costs, were other reasons reported by some farmers (table 3.22).

**Table 3.22: Distribution of farmers by problems faced in retail chain linkage**

<b>Problems faced</b>	<b>No. of farmers reported</b>
Lower indent	6 (37.5)
Higher rejection rates	4 (25.0)
Lack of crates	2 (12.5)
Low price for RR grade	2 (12.5)
Give little time to harvest	2 (12.5)

Note: Figures in parenthesis indicate the %age of responses who reported problems.

The farmers were of the view that government should fix prices for FFVs and allow more of retail chains which will increase market competition. They also demanded regulation of *mandi* price. On the production front, they wanted subsidies for vegetable growers and training for growing vegetables (table 3.23). The farmers wanted the retail chain to procure entire produce (of all grades). Some farmers also wanted fixed prices of FFVs in advance from the chain and farm pick up of produce while some others wanted RF to provide loans, regular indent, and written contract to make the supply chain smoother (table 3.24).

**Table 3.23: Distribution of farmers by opinion on role of government/policy**

<b>Role of Govt. /policy</b>	<b>Response of farmers</b>
Should fix the prices for FFVs	7 (31.8)
Opening of more retail chains	5 (22.7)
Regulation of <i>mandi</i> price of FFVs	4 (18.2)
Provide subsidy to vegetable growers	3 (13.6)
Make retail chains procure entire produce	2 (9.1)
Provide training for growing FFVs	1 (4.5)

Note: Figures in parenthesis indicate the %age responses to total number of responses.

**Table 3.24: Distribution of farmers by opinion on the role of RF/buyer**

<b>Role of RF</b>	<b>Response of farmers</b>
Should procure all the produce and grades	20 (50)
Fix the prices of FFVs in advance	6 (15)
Provide loans	4 (10)
Should pick from the farm	4 (10)
Others*	6 (15)

Note: Figures in parenthesis indicate the %age responses to total number of responses included regular indent, written contract, and more outlets in cities.

### 3.3A1 ABRL-Farmer profile

About 82% of farmers were associated with ABRL for less than one year, 14% for 1-2 years and only 4.5% for more than two years. Of the total farmers interviewed, half of ABRL farmers were semi-medium followed by medium (40.9%) and large farmers (9.1%). Leasing in practice was higher among medium farmers (33%) compared with semi-medium farmers (9.1%), and large farmers (nil). The %age of leased-in area in operated land was also higher among medium farmers than that in semi-medium farmers. The leasing out practice was altogether absent among all categories of farmers. The %age of cultivated area in total was the highest among medium farmers (90) followed by semi-medium (82) and large farmers (78), the overall average being 84. With leasing in, the average size of holdings of all farmers went up from 14.15 acres to 14.74 acres while that of leasing-in farmers increased from 9.13 acres to 12.38 acres. All the ABRL farmers were semi-medium (50.0%), medium (40.9%) or large (9.1%) farmers compared with the respective proportions of 27% each of marginal and small farmers, 25.5%, semi-medium, 16.7% medium and 2.4% large land holders in Gujarat (fig.3.5). The average operated area of retail chain farmers (14.74 acres) was much higher than the average size of the operational holding of 6.45 acres in Gujarat (fig.3.6) (Singh, 2008).

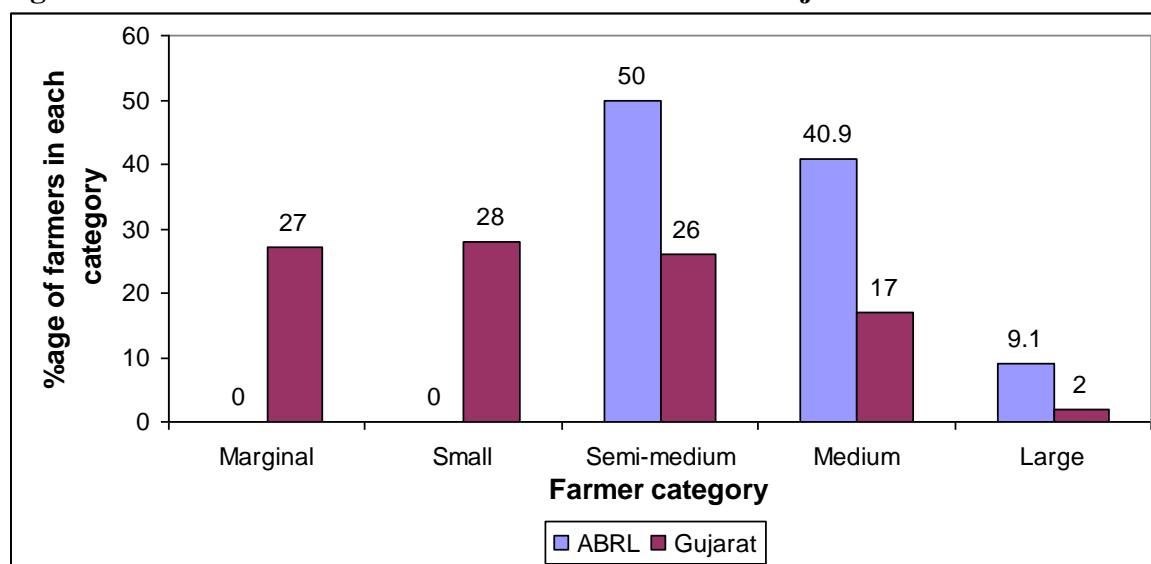
Average operated holding of tomato farmers was almost double than that of cauliflower farmers. %age of leased-in area in operated land was also higher in case of tomato farmers (4.3) than that in case of cauliflower farmers (3.5). But, net cultivated area of cauliflower farmers as %age of operated area was higher than that in tomato farmers (table 3.25). Among all the ABRL farmers interviewed, about 18% had sharecroppers. The average operated land size of these farmers was almost double (28 acres) than that across all farmers (14.7 acres). Leasing-in practice was absent across all farmers with share croppers while in general, about 4% of the operated land was leased-in across all ABRL farmers.

**Table 3.25: Category-wise distribution of ABRL farmers by land holdings (in acres)**

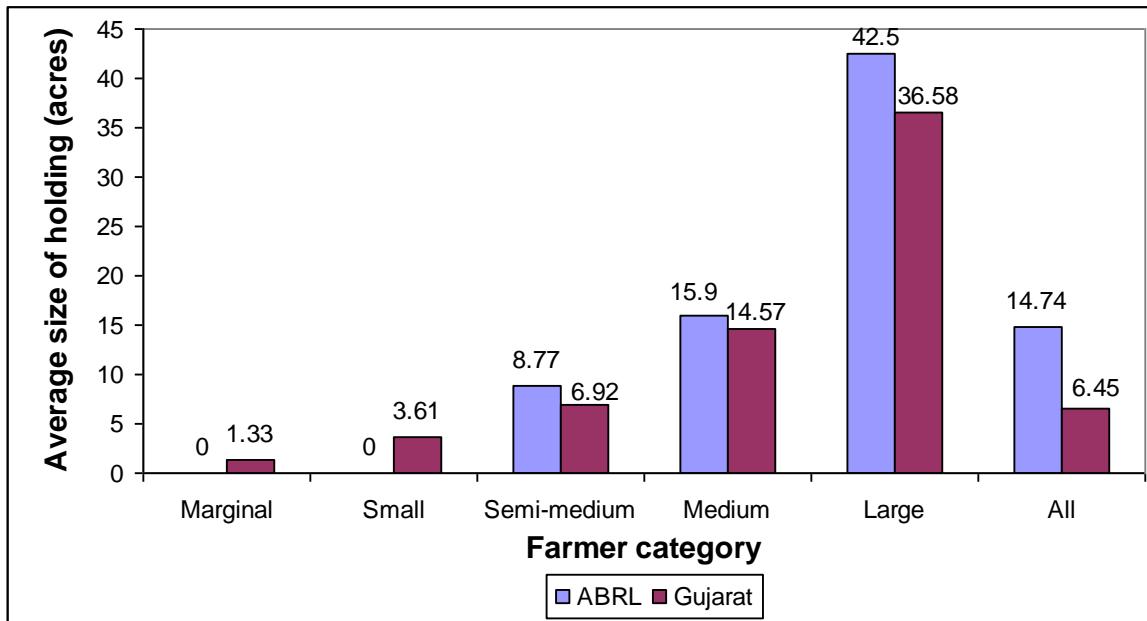
Parameters> Farmer/crop category	No. of farmers	Land owned	Leased-in land	Operated land	% of leased- in operated	Net cultivated area*
Semi-medium	11 (50.0) {1}	8.32 {5.0}	0.45 {5.0}	8.77 {10.0}	5.1 {50.0}	7.18 (81.9)
Medium	9 (40.9) {3}	15.00 {10.50}	0.90 {2.67}	15.90 {13.17}	5.6 {20.2}	14.2 (89.7)
Large	2 (9.1) {-}	42.50	-	42.50	-	33.00 (77.6)
Cauliflower	12 (54.5)	10.31	0.38	10.69	3.55	9.50 (88.9)
Tomato	10 (45.5)	18.75	0.85	19.60	4.34	15.9 (81.1)
All	22 (100) {4}	14.15 {9.13}	0.59 {3.25}	14.74 {12.38}	4.00 {26.3}	12.41 (84.2)

Note: Figures in {} indicate land holding details for those farmers who leased in land. \*Figures in parenthesis are percentage of net cultivated area of operated land.

**Figure 3.5: Profile of ABRL farmers and all farmers in Gujarat**



**Figure 3.6: Category wise profile of ABRL farmers with all farmers in Gujarat**



Among all categories of farmers, %age of irrigated area in operated land was highest in medium farmers (89.4) than that in semi-medium (81.9) and large farmers (74.1), the overall average being 83.2%. The semi-medium farmers did not possess any area under drip-irrigation in comparison to about 22% and 50% of medium and large farmers respectively with such area. Overall, about 13% farmers had area under drip irrigation. The %age of drip irrigated area to the total irrigated area was also higher in large farmers than the medium farmers, the overall average being 8.9%. The crop-wise irrigation profile of farmers revealed that although %age of irrigated area in operated land was lower for tomato farmers (79.6%) than that of cauliflower farmers (88.9%) but tomato farmers had put about 13% of total irrigated area under drip irrigation as compared with only 3.5% under drip irrigation in case of cauliflower growing farmers. The proportion of drip irrigated farmers was higher among tomato growing farmers than that among cauliflower growing farmers (table 3.26). Although both cauliflower and tomato crop farmers were rich in ownership of farm machinery, but still the tomato farmers had an edge over cauliflower farmers as only 92%, 83% and 75% of cauliflower farmers had tractor-cum-trailers, diesel engines and ploughs/cultivators respectively compared with tomato farmers all of whom possessed these farm equipments (table 3.27).

**Table 3.26: Farmer category and crop-wise irrigation profile of ABRL farmers (area in acres)**

Irrigation source> Farmer/crop Category	Tubewell irrigated	%age operated land irrigated	Drip irrigated	%age drip irrigated area to irrigated area
Semi-medium	7.18	81.9	-	-
Medium	14.22	89.4	1.56 (22.2)	11.0
Large	31.5	74.1	5.00 (50.0)	15.9
Cauliflower	9.50	88.9	0.33 (8.3)	3.5
Tomato	15.60	79.6	2.00 (20.0)	12.8
All	12.27	83.2	1.09 (13.6)	8.9

Note: Figures in brackets indicate the %age of farmers with drip irrigation in total.

**Table 3.27: Crop-wise distribution of ABRL farmers by ownership of farm machinery**

Farm machinery ownership> Crop-wise	Tractor/ Trailer	Plough/ Cultivator	Pumpset/ borewell	Electric motor	Diesel engine	Potato digger	Sprayer
Cauliflower	11 (91.7)	9 (75.0)	12 (100.0)	12 (100.0)	10 (83.3)	-	12 (100.0)
Tomato	10 (100.0)	10 (100.0)	10 (100.0)	10 (100.0)	10 (100)	3 (30.0)	10 (100.0)
All	21 (95.5)	19 (86.4)	22 (100.0)	22 (100.0)	20 (90.9)	3 (13.6)	22 (100.0)

Note: Figures in brackets indicate the %age of farmers in total.

The family size of the farmers in each category increased with increase in size of land holdings. Thus, large farmers had higher family size (11) than the medium farmers (10) who in turn, had a higher family size than the semi-medium farmers (7). Moreover, %age of farm family workers of the total family size was higher in semi-medium farmers (76) than that in medium (49) and large farmers (26), the overall average being 58. Thus, family labour for farm activities reduced with increase in size of land holdings. The female children of medium and large farmers did not work at all for farm activities. The crop-wise distribution of farmers revealed that the families of the tomato growing farmers were bigger in size compared to the families of the cauliflower growing farmers. The %age of farm family workers of the total family size was higher in cauliflower growing farmers (60) than that in tomato growing farmers (54). Moreover, female workers of tomato households participated

very little in farm activities compared with the cauliflower growing households. The female children of the tomato farmers did not do any farm activity (table 3.28).

**Table 3.28: Farmer category and crop-wise family size of ABRL farmers**

Family details Farmer/ crop Category	Family members				Farm family workers						
	Adult		Children		Average family size	Adult		Children		Average farm workers	%age of farm workers in family
	Male	Female	Male	Female		Male	Female	Male	Female		
Semi-medium	3.3	2.2	0.8	1.2	7.5	2.9	1.5	0.8	0.5	5.7	76.0
Medium	3.6	3.0	2.2	1.0	9.8	2.8	1.4	0.6	-	4.8	49.0
Large	4.0	3.5	2.0	2.0	11.5	1.5	1.0	0.5	-	3.0	26.1
Cauliflower	3.1	2.4	1.1	2.0	8.6	2.5	1.8	0.4	0.5	5.2	60.5
Tomato	4.0	3.0	2.0	0.2	9.2	3.0	1.0	1.0	-	5.0	54.3
All	3.5	2.6	1.5	1.2	8.8	2.7	1.4	0.7	0.3	5.1	58.0

Farmers working with ABRL were fairly literate as none of them was illiterate or under matriculate. All the large farmers had graduate degree while among medium farmers, more than half of the farmers had graduate degree. The graduates were the least in semi-medium category. Generally, the %age of SSC holders, HSC holders was maximum among semi-medium farmers and started to decline with increases in size of land holdings. The proportion of SSC degree holders and graduates was higher among tomato farmers (20% and 50% respectively) than that among cauliflower farmers (16.7% and 33%). However, %age of HSC degree holders was higher among cauliflower farmers (50%) than that among tomato farmers (30%). Thus, among all ABRL farmers, more than 40% were either graduate degree holders or higher secondary degree holders each, and rest (18%) senior secondary degree holders (table 3.29). Half of the large farmers had off-farm income as against only 11% in case of medium farmers. Surprisingly, semi-medium farmers did not possess any off-farm income. The number of adults/acre of land and number of adults/family with off-farm income was quite low in medium farmers compared with that in case of large farmers. The off farm income/month/person was also higher in large farmer category (Rs. 6250) than that in medium farmer category (Rs. 433.3) (table 3.30).

**Table 3.29: Farmer category-and crop-wise distribution of farmers by literacy level of hh**

Literacy level> Farmer/crop category	SSC level	HSC level	Graduate
Semi-medium	3 (27.3)	6 (54.5)	2 (18.2)
Medium	1 (11.1)	3 (33.3)	5 (55.6)
Large	-	-	2 (100)
Cauliflower	2 (16.7)	6 (50.0)	4 (33.3)
Tomato	2 (20.0)	3 (30.0)	5 (50.0)
All	4 (18.2)	9 (40.9)	9 (40.9)

Note: Figures in parenthesis indicate the percentage of the total.

Although %age of cauliflower households with off-farm income was slightly lower than that in case of tomato growing households, but the number of adults/acre of land and number of adults/family with off-farm income was significantly lower in cauliflower households as compared to that in tomato growing households. The average off-farm income/month/person was also higher in tomato (Rs. 1250) than that for cauliflower farmers (Rs. 325) (table 3.30).

**Table 3.30: Farmer category-and crop-wise distribution of ABRL farmers by average off-farm income details**

Off farm parameters>		% of hhs with off-farm income	No. of adults/acre of land with off-farm income	No. of adults/family with off-farm income	Income (Rs./month/person)
Farmer category	Medium	11.1	0.007	0.11	433.3 (3900)
	Large	50.0	0.02	1.00	6250.0 (12500)
Crops	Cauliflower	8.3	0.008	0.08	325.0 (3900)
	Tomato	10.0	0.01	0.20	1250.0 (12500)
All		9.1	0.009	0.14	745.4 (8200)

Note: Figures in parenthesis indicate the averages for only those hhs which had off farm income.

Although all the farmers had two-wheelers and televisions, even then, across categories, household asset ownership was lower among semi-medium farmers, followed by medium farmers. The large farmers were rich in household asset ownership as all large farmers had cars/four-wheelers and dish TVs. 50% of large farmers even had pick-up trucks. Furthermore, tomato growing farmers had more household assets than cauliflower growing farmers as 60%, 30% and 100% of tomato farmers had car/four-wheeler, pick-up truck and dish TV respectively compared with 41.7%, 16.7% and 75% respectively possessed by cauliflower farmers (table 3.31).

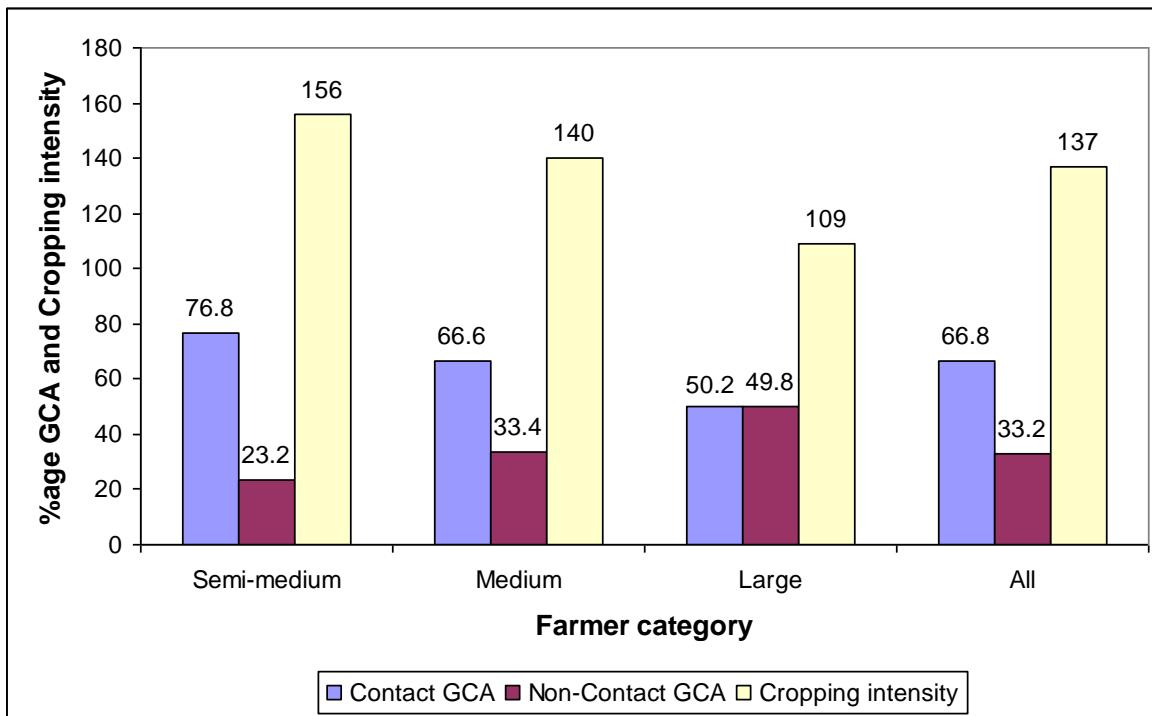
**Table 3.31: Farmer category and crop-wise distribution of ABRL farmers by household assets**

<b>Household assets&gt;</b>		<b>Car/jeep</b>	<b>Pick-up truck</b>	<b>Dish TV</b>
Farmers' category	Semi-medium	2 (18.2)	-	8 (72.7)
	Medium	7 (77.8)	4 (44.4)	9 (100)
	Large	2 (100)	1 (50.0)	2 (100)
Crops	Cauliflower	5 (41.7)	2 (16.7)	9 (75.0)
	Tomato	6 (60.0)	3 (30.0)	10 (100)
All		11 (50.0)	5 (22.7)	19 (86.4)

Note: Figures in parenthesis indicate the %age of farmers in each category

Across categories, %age of total Gross Cropped Area (GCA) under contact vegetable crops was higher in semi-medium farmers (76.8%) followed by medium (66.6%) and large farmers (50.2%), the overall average being 66.8% (fig. 3.7). The %age of GCA under contact crops was lower in case of farmers with sharecroppers (54%) than that in case of all farmers (67%). The %age of GCA under cauliflower was also lower among farmers with sharecroppers (10%) than that across all ABRL farmers (21%). However, %age of GCA under tomato across farmers with sharecroppers and all ABRL farmers was almost the same (about 18%). The medium farmers had a relatively higher %age of GCA under wheat while semi-medium and large farmers had higher %age of GCA under cotton/castor and potato respectively. The large farmers growing potatoes were commercial growers with significantly higher %age of GCA (about 44%) under potatoes and they had only 50% of GCA under non-contact crops compared with 60-70% in case of other categories of farmers. The medium farmers had 3.5% of the total GCA under fodder which was just 0.9% and 1.6% in semi-medium and large farmers respectively. This perhaps supported higher income from milch animals obtained by medium farmers compared to that obtained by semi-medium and large farmers. The cropping intensities were higher for semi-medium farmers (156) followed by medium (140) and large farmers (109), indicating that semi-medium farmers were intensive cultivators of the crops, particularly vegetables (fig. 3.7). The %age of GCA under cauliflower was the highest in medium farmers (25.2%) followed by semi-medium farmers (21.4%). Similarly, %age of GCA under cabbage was higher in semi-medium (22.3%) than that in case of medium (10.1%) and large farmers (4.6%). However, in tomato, %age of GCA was similar across semi-medium (19.6%), medium (17.7%) and large farmer (19.8%) categories (table 3.32).

**Figure 3.7: GCA and cropping intensity across farmer categories –ABRL farmers**



Cauliflower growing farmers had higher GCA under the crop (30.5%) compared with the overall 20.7% GCA under cauliflower. Similarly, tomato growing farmers had higher %age of GCA (26.7%) under tomato compared with the overall %age of GCA of 18.7% under tomato. The %age of GCA under other vegetables was higher in case of cauliflower growing farmers (11.7%) than that in case of tomato growing farmers (4%). The cauliflower growing farmers also had higher %age of the total GCA under contact crops (73%) than that in tomato growing farmers (61%). The tomato farmers put higher %age of GCA under brinjal than that by the cauliflower farmers who put higher area under cabbage. The tomato growing farmers had higher %age of GCA under non-contact crops (38.7%) than that in case of cauliflower farmers (26.6%), the overall average being 33.2%. Also, potato was grown only by tomato growing farmers (table .3.32).

**Table 3.32: Farmer category and crop-wise distribution of ABRL farmers by cropping pattern and cropping intensity**

Crop-wise GCA (in acres)	Farmer category			Crop-category		
	Semi-medium	Medium	Large	Cauliflower	Tomato	All
<b>Contact crops</b>						
Cauliflower	2.40 (21.4)	5.00 (25.2)	2.91 (8.1)	4.33 (30.5)	2.53 (12.4)	3.51 (10)** (20.7)
Cabbage	2.50 (22.3)	2.00 (10.1)	1.67 (4.6)	2.40 (16.9)	2.00 (9.8)	2.22 (13.1)
Tomato	2.20 (19.6)	3.50 (17.7)	7.13 (19.8)	1.30 (9.2)	5.44 (26.7)	3.18 (18)** (18.7)
Brinjal	0.70 (6.2)	1.35 (6.8)	2.83 (7.9)	0.73 (5.1)	1.68 (8.3)	1.16 (6.8)
Other vegetables*	0.82 (7.3)	1.35 (6.8)	3.49 (9.7)	1.66 (11.7)	0.82 (4.0)	1.28 (7.5)
<b>Contact crop GCA and % to total GCA</b>	<b>8.62 (76.8)</b>	<b>13.20 (66.6)</b>	<b>18.03 (50.2)</b>	<b>10.42 (73.4)</b>	<b>12.47 (61.3)</b>	<b>11.35 (54)** (66.8)</b>
<b>Non-contact crops</b>						
Wheat	0.50 (4.5)	2.32 (11.7)	1.33 (3.7)	1.10 (7.7)	1.58 (7.8)	1.32 (7.8)
Potato	0.25 (2.2)	1.50 (7.6)	15.74 (43.8)	-	4.77 (23.5)	2.17 (12.8)
Cotton/castor	1.76 (15.7)	2.10 (10.6)	0.23 (0.6)	2.18 (15.4)	1.26 (6.2)	1.76 (10.4)
Fodder	0.10 (0.9)	0.70 (3.5)	0.59 (1.6)	0.50 (3.5)	0.26 (1.3)	0.39 (2.3)
<b>Non-contact GCA and % in total GCA</b>	<b>2.61 (23.2)</b>	<b>6.62 (33.4)</b>	<b>17.89 (49.8)</b>	<b>3.78 (26.6)</b>	<b>7.87 (38.7)</b>	<b>5.64 (33.2)</b>
Grand GCA	11.23 (100.0)	19.82 (100.0)	35.92 (100.0)	14.2 (100.0)	20.34 (100.0)	16.99 (100.0)
Net cultivated area	7.18	14.2	33.00	9.50	15.9	12.41
Cropping intensity	156	140	109	149	128	137

Note: Figures in brackets are % of GCA under each crop.

\*Other vegetables were chilli, *bhindi*, cucumber, bottle gourd, bitter gourd, beetroot, and cowpea;

\*\*for landholders with sharecroppers

Cotton/castor was predominantly grown by cauliflower farmers. The %age of GCA under fodder was also higher in cauliflower growing farmers (3.5%) than that in tomato growing farmers (1.3%). The cropping intensity was also higher on cauliflower growing farms than that on tomato growing farms. Thus, cauliflower farmers were intensive cultivators of

vegetables than the tomato farmers. Overall, 2/3<sup>rd</sup> of the total GCA was for growing non-contact crops. Cauliflower, tomato, cabbage and potato emerged as the major crops as they accounted for about 21%, 19%, 13% and 13% of the total GCA (table 3.32).

### **3.3A2 Cauliflower production and procurement**

The cauliflower is a three month crop which can be grown either in June-July or November-December. The harvesting in cauliflower starts two months after sowing and continues for one month till fully harvested. Of the total cost of production of Rs. 38317/acre in cauliflower, the major costs of production were hired labor (18.8%), irrigation (16.3%), pesticide (15.7%), fertilizer (15.5%) and seed (13.2%). Farmers did not spray any weedicides. Instead, they practised weeding operations with manual labour either hired (mainly through produce sharing labor) or family (table 3.33).

**Table 3.33: Production costs of ABRL farmers in cauliflower**

Crop> Cost (Rs./acre)		Cauliflower
Land rent		2880 (7.5)
Land preparation		1685 (4.4)
Seed		5050 (13.2)
FYM		370 (1.0)
Fertilizer		5950 (15.5)
Pesticide		6000 (15.7)
Weedicde		-
Irrigation		6250 (16.3)
Labour	Hired	7208 (18.8)
	Family	2924 (7.6)
Cost of production		38317 (100.0)

Note: Figures in brackets are % share in average cost of production.

The cauliflower was delivered at CC either in loose or by packing in cloth. Generally, 50-55 kg was packed in one packing cloth. The packing cloth cost Rs. 10-12 which was returned by the CC but not in case of Jamalpur *mandi*. So, farmers could use it again while selling to ABRL but not while selling to *mandi*. Thus, packing cost in cauliflower was lower while selling to ABRL as compared to that in *mandi*. Large farmers generally preferred to sell in Jamalpur *mandi* than to ABRL because the ABRL indent was very small. The transportation cost was also lower at the CC as it was located close to the farmers' fields. Generally, one

trip of tractor-trailer to CC cost Rs. 150-200, if hired. The cost reduced further as most of the farmers owned tractors-trailers and incurred only diesel costs. The transporters charged Re. 0.50/kg to transport the produce to the Jamalpur *mandi*. Thus, the resulting cost of transportation was higher in *mandi* compared to that in ABRL channel. The spoilage and weight losses were also reported to be higher in *mandi* channel as compared to that in retail channel. Thus in all, total transaction costs of the farmers were reduced to one-third by linking with the ABRL retail channel (table 3.34).

**Table 3.34: Transaction costs of ABRL farmers in cauliflower**

Channel> <b>Transaction costs</b>	<b>ABRL</b>		<b>Mandi</b>	
	<b>(Rs/kg)</b>	<b>(Rs.)</b>	<b>(Rs/kg)</b>	<b>(Rs.)</b>
Cost of packing cloth	0.08	1384	0.20	3460
Transportation cost	0.14	2422	0.50	8650
Spoilage/weight loss	0.06	1038	0.08	1384
Marketing cost	0.28	4844	0.78	13494

The average yield of cauliflower was 173 quintals/acre. The farmers could sell only 35% of the produce to the retail channel and sold the rest (65%) to *mandi* after accounting for all the rejections. Although, ABRL provided only *mandi* price to farmers, but the average price in retail channel was Rs. 3.6/kg, (slightly higher) than the *mandi* price (Rs. 3.5/kg). The total cost of production and marketing of cauliflower was only Rs. 2.5/kg in retail channel as against of Rs. 3.0/kg. in *mandi* channel, resulting in net income of Rs. 1.1/kg in retail channel compared to only Re. 0.5/kg in *mandi* channel. Even in absolute terms, the net income of farmers from 35% of the produce sold to retail channel was higher than that from 65% of the produce sold to the *mandi* channel. Thus, farmers were able to increase their overall net income to Re. 0.72/kg from Re. 0.51/kg in *mandi* channel after linking with the ABRL retail channel as the retail channel gave a net income of Rs. 1.11/kg (table 3.35). 22% of farmers harvested according to the requirements of the ABRL. About 42% of farmers graded cauliflower as against all farmers in tomato. Due to this grading, about 10-15% of the produce was rejected at farm level itself to avoid the rejections at CC.

**Table 3.35: Proportional costs and returns of ABRL farmers in cauliflower**

<b>Marketing channels&gt; Costs and returns/acre (Rs./acre)</b>	<b>ABRL</b>	<b>Mandi</b>
%age of cauliflower sold to each channel	35.0	65.0
Quantity sold to each buyer (Kg/acre)	6055	11245
Price in each channel (Rs./kg)	3.6	3.5
Gross sales proceeds	21798.0	39357.5
Cost of production	13411.0 (2.21)	24906.1 (2.21)
Marketing cost	1695.4 (0.28)	8771.1 (0.78)
Cost of production and marketing	15106.4 (2.49)	33677.2 (2.99)
Net income in each channel	6691.7 (1.11)	5680.4 (0.51)
Net income	12372.0 (0.72)	

Note: Figures in brackets are cost/net income per kg. of cauliflower

### 3.3A3 Tomato production and procurement

Tomato is a 5-6 month long crop which grows best either in rainy or winter season. The harvesting starts after 75 days of transplanting and continues for 2-3 months depending upon the applications of fertilizers, pesticides and irrigations. In the total cost of production of Rs.50276/acre, the major costs were pesticides (24%), irrigation (18%), fertilizers (16%), seed (13%) and hired labor (11%). The large doses of pesticides and fertilizers were required to extend the yielding period of the crop. Moreover, as evident, the usage of family labour for tomato cultivation was quite lower (table 3.36).

**Table 3.36: Production costs of ABRL farmers in tomato**

<b>Crop&gt; Cost (Rs./acre)</b>	<b>Tomato</b>
Land rent	3450 (6.9)
Land preparation	2440 (4.9)
Seed	6500 (12.9)
FYM	150 (0.3)
Fertilizer	8100 (16.1)
Pesticide	12150 (24.2)
Weedicide	350 (0.7)
Irrigation	8900 (17.7)
Labour	5702 (11.3)
Family	2534 (5.0)
Cost of production	50276 (100.0)

Note: figures in brackets are % share in average cost of production.

Cartoons were used to pack tomatoes both for retail channel and *mandi*. Usually one cartoon contained 20-25 kg of tomatoes. The cartoons at CC were returned to farmers which could be re-used for 3-4 times. But, farmers had to sell the tomatoes in Jamalpur *mandi* in cartoons.

Thus, they had to bear the extra cost for cartoons every time. The cost of cartoon for packing tomatoes for retail channel was Re. 0.30/kg as against a higher cost of packing of Re. 0.68/kg in *mandi* channel. Moreover, farmers found the closely located CCs as convenient mode of selling the crops as they could easily bring their produce in their own tractors/two-wheelers. This had not only reduced transportation costs by 1/4<sup>th</sup> in retail channel but saved time as well (table 3.37). Farmers had to pay Rs 10 per 20 kg of produce to the transporter to deliver produce to *mandi* where they not only had to stand in queues but also improper weighing and cheating resulted into lower price realisation; coupled with additional costs for meals, etc. The unloading of the produce was done by the labour of the buyer in the *mandi*.

**Table 3.37: Transaction costs of ABRL farmers in tomato**

Channel> <b>Transaction costs</b>	<b>ABRL</b>		<b>Mandi</b>	
	<b>(Rs./kg)</b>	<b>(Rs.)</b>	<b>(Rs./kg)</b>	<b>(Rs.)</b>
Cost of cartoon for packing	0.30	7575.0	0.68	17170.0
Transportation cost	0.11	2777.5	0.47	11867.5
Marketing cost	0.41	10352.5	1.15	29037.5

The tomato farmers sold 40% of the total produce to ABRL and 60% in *mandi*. An acre of tomato yielded about 80% of A grade produce, 10% of B grade produce and 10% of C grade produce. Since ABRL only procured 40% of the A grade tomatoes, the rest of the A grade and other grade produce was sold in *mandi*. But due to rejection of 2.5% by ABRL, the net produce sold to retail turned out to be 39%. Thus, %age of A, B and C grade tomatoes sold in *mandi* was 40%, 10% and 11% respectively. The average yield of tomato was 252.5 qunitals/acre. The price for A grade was higher in *mandi* (Rs. 4.5/kg) than in ABRL (Rs. 4.4/kg), but still farmers preferred retail chain as their transportation costs and time involved in selling produce were reduced. The net income in retail chain channel was Rs 2.0/kg as against only Re. 0.74/kg in *mandi* channel. Thus, the farmers increased their overall net income from tomato to Rs.1.3/kg as the retail net income was Rs. 2/kg. compared with that in *mandi* channel being only Re. 0.74/kg (table 3.38).

**Table 3.38: Proportional costs and returns of ABRL farmers in tomato**

Marketing channels> Costs and returns (Rs./acre)	ABRL	Mandi		
Grade	A	A	B	C
%age of crop sold to each channel	39.0	40.0	10.0	11.0
Quantity of each grade sold (Kg/acre)	9847.5	10100	2525	2777.5
Price in each channel (Rs./kg)	4.4	4.5	3.0	2.0
Gross returns	43329	45450	7575	5555
		58580 (3.8)		
Cost of production	19607.6 (1.99)	20110.4 (1.99)	5027.6 (1.99)	5530.4 (1.99)
Marketing cost	4037.5 (0.41)	11615.0 (1.15)	2903.8 (1.15)	3194.1 (1.15)
Cost of production and marketing	23645.1 (2.40)	31725.4 (3.14)	7931.4 (3.14)	8724.5 (3.14)
Net income in each channel	19683.9 (2.00)	13724.6 (1.36)	906.2 (0.36)	-3169.5 (-1.14)
		11461.3 (0.74)		
Net income		33200.5 (1.31)		

Note: Figures in brackets are cost/income per kg. of tomato.

The farmers sold 37.8% of the total produce in retail channel and 62.2% of the produce in *mandi*. The %age of produce sold in different channels varied across different vegetables. In cauliflower, %age of crop sold to retail channel and *mandi* was 36% and 64% respectively while in tomato the respective figures were 40% and 60%. About 64% of the farmers had given ABRL as the first preference channel and ranked it better than the *mandi*.

Major reasons for selling to retail chain were that the transportation costs were reduced to great extent as they brought the produce in their own two wheelers, four-wheelers or tractor-cum-trailers instead of hiring transport which cost Re. 0.50/kg which was needed to access Ahmedabad market. Selling to ABRL also resulted in saving of farmers' time as loaded trucks of farmers at *mandi* had to wait for several hours. In retail channel, they incurred only diesel expenses. The farmers could reuse the packing cloth used to pack cauliflower and cartons used to pack tomatoes as both were returned to farmers. Higher income in retail channel, proper weighing, lower wastages, and fixed price for the day (unlike at Jamalpur *mandi* as sometimes wholesalers pay different prices during the same day at different times) were the other reasons reported by the farmers for selling the produce to retail channel (Table 3.39).

**Table 3.39: Distribution of farmers by reasons for selling to ABRL  
(multiple responses)**

Reasons for selling to ABRL	%age no. of farmers reporting
Time saving	85
Lower transportation costs	80
Reuse of packing cloths/cartoons	80
Higher income	72
Proper weighing	45
Saving of meal expenses	30
Lower wastages on the way	25
Fixed price for the day	25

### **Box 3.3 Spencer's farmer speak**

*Rajnibhai Patel, 3 acres holder, with 0.6 acre of vegetables*

*"Earlier I used to sell my ladyfingers at Jamalpur Market every alternate day and now I sell my entire produce to Spencers. They pay cash and there is no loss of packing material. Further, there is saving of my time due to local sales. I used to spend Rs. 100/- as marketing cost when dealing with Jamalpur Market. There are no deductions here and no unloading charges but I get the same price as I used to get in Jamalpur Market."*

*Pankajbhai Patel, 6 acre holder, with 4 acres of vegetables*

*"I save time and cost by selling here. It used to take my full day for selling in Jamalpur and the total cost of selling there was Rs. 140/- per day including transport cost Re. 0.5 per kg.(Rs. 10 for pack of 20 kg.), Rs. 50/- for 10% deduction and Rs. 80/- for daily wage (Rs. 50) and cost of food (Rs. 30). By selling here, my farm work does not suffer as I can get back to the farm immediately. Further, there is no risk of transport to a distant place and packing material worth Rs. 15/- per pack is returned here which was not the case in Jamalpur. Here, it costs only Re. 0.2 per kg. and if a lot is smaller, it can be transported by bike or scooter. Thus, I save Re. 0.3 per kg. of transport cost by selling here. I agreed to 10% lower price by Spencer's than the Jamalpur market as selling cost here is lower for me" (Singh, 2009).*

### **3.3A4 Farmer default**

Because of the relatively new association with ABRL, more than 54% of the farmers linked with the chain defaulted on delivery due to the lower indent by ABRL (42%) forced farmers to use the market channel to market the produce which in turn increased their transportation costs. So, they preferred to sell the entire produce to the *mandi*. The farmers also defaulted when prices in ABRL were lower than the *mandi* price (33%) and there was higher production of vegetables (25%) forcing farmers to sell the produce at one place only to avoid multi-channel transportation costs.

### 3.3A5 Problems in interface

About 68% of the farmers wanted to continue working with ABRL. About 64% of the farmers in this channel reported problems. The lower indent from ABRL was the major problem as they had to sell the rest of the produce in *mandi* which increased their transportation costs. Since ABRL purchased only A grade produce, the rest of the produce fetched lower price in *mandi*. Some of the other major problems reported by the farmers were: absence of farm level pick up by ABRL, lack of compensation in the event of glut in market and no provision for inputs (table 3.40).

**Table 3.40: Distribution of farmers by problems faced in selling to ABRL**

Problems while selling to ABRL	No. of farmers reporting
Lower indent	7 (50.0)
Purchase of only A grade	6 (42.9)
Absence of farm picking	4 (28.6)
No compensation in the event of glut in market	3 (21.4)
Not providing inputs	2 (14.3)
Not having formal contract with farmers	1 (7.1)
Remaining B&C grades fetch less price	1 (7.1)
Giving less time to harvest after informing the indent	1 (7.1)
Irregular indent	1 (7.1)

Note: Figures in parenthesis indicate the %age of responses among the farmers who reported the problems in selling to ABRL.

The farmers suggested that ABRL should procure all the produce and grades. Moreover, it should give indents in advance rather than giving it in the morning as it would decrease their dependence on labour. Due to this instant and adhoc indent, hiring labour became difficult and they had to pay higher wages (table 3.41).

**Table 3.41: Distribution of farmers by suggestions on supply chain improvement**

Role of ABRL	%age farmers reported
Should purchase all the produce and grades	80
Advance information of daily indents	50
Should give higher prices	40
Indent should be supply driven; not demand	10

Note: these are multiple responses and therefore do not add upto 100.

Farmers were of the view that the government should allow more retail chains (40%) as it would create competition among the retail chains and they could bargain with retail chains.

Further, some farmers wanted government to act as intermediary between farmers and companies by forming formal contracts between the two (10%) and another 10% wanted the entire produce purchase being made mandatory. Besides this, 30% farmers wanted subsidised inputs.

### **3.4 Emerging Local enterprise in F&V retailing**

#### ***3.4A HarraFresh***

Mr. Bajaj had been in textile garments since 20 years with brands like Hasejaa, Harra and Harra KBC. The HarraFresh Pvt. Ltd. established in 2008 started the van based delivery in Dec., 2008. 60% of its sales are B to C and rest B to B. Now, it has 15 such vans and 15 tonnes of sales per day. Each van has one tonne capacity and there are four people including driver manning the van with 2 points of sales in each van. The vans had a host of animated characters like ‘Lalu Tamatar’ and ‘Raseela Nimboo’ among others. The company also advised these employees to donate Re.0.1 from every kg of vegetables sold to a fund that would take care of the vendor’s children education (Times of India, Ahmedabad, 25<sup>th</sup> May, 2009).



#### **Business model**

It has a unique model of involving traditional vendors into its operations where in they are trained in customer and sales management and given uniforms. Now, there are 60 such vendor including a few women who work for the company. They are hired on a monthly payment basis besides performance based incentives and mediclaim and accidental insurance. A vendor is generally paid Rs. 4000/month. The vendor is given one day off in a week. The company avoids competing with existing vendors and has 3-4 major societies which are regularly supplied F&Vs.

## Consumer market

Each society has 80-450 households and a total of 1000 households are covered. The vans carry 30-40 SKUs including 30-35 in vegetables and 15-20 in fruits.

## Procurement

The procurement is done from different sources depending on the SKU and target market. The unsold F&Vs in B to C market (20-30%) are sold back to the mandi by the procurement centre. Altogether for both B to B and B to C, about 15% of the total procured produce is sold back in the mandi. It has one distribution centre from where the vans start at 7.30 am and go on selling till 9pm. The grading and procurement is done by the procurement centre or the trader.



## Marketing

There is one van in-charge who is responsible for sales. A van stays a society for 2-3 hours and it visits only once or twice a week. The Unique Selling Proposition (USP) of the company are freshness, attractiveness, color and convenience. The prices are market price based and quite competitive as they are discovered with a lot of market intelligence.

The daily sales of a van amount to 0.6 tonne worth Rs. 6000 which gives Rs 150/person/day based on 10% commission besides the monthly salary. The retail vans are replenished once a day. The vans which are air-cooled and have a weigh scale, billing machine and baskets cost

4 lakh each. All retail sales are on cash basis and B to B on credit. Major vegetables which are fast moving include cauliflower, cabbage, bottle gourd, potato, onion, tomato, lemon and leafy vegetables like spinach and fenugreek. The average price of the vegetables is Rs. 20/kg and that of fruits is Rs. 40/kg. Vegetables account for 70% of the quantity and 40% of value whereas fruits account for 30% of quantity and 60% of value. Retail buyers are supplied twice or thrice a week.

#### Institutional sale

The institutional buyers are supplied directly from distribution centre in ordinary auto rickshaws. The institutions are supplied every day. Exotics F&Vs are sold only to institutional buyers.

“The vegetable vendors that we have employed are the ones who used to make between Rs. 1,500 and Rs. 6,000. Now, these vendors have a steady income and their quality of life has bettered. Now, they don’t have to reach the wholesalers market at 3am and worry about the leftover vegetables at the end of the day,” said chief operating officer of HarraFresh (Ahmedabad Mirror, 25<sup>th</sup> May, 2009). Further one vendor, Kanu Prajapati (40) who joined the HarraFresh opined that, “I used to be insecure about my earnings. But now with HarraFresh, I have got a secure job which pays Rs 4,500 a month” (Times of India, 25<sup>th</sup> May, 2009).

However, the first van delivered the produce in Dec, 2008. The van was a CNG vehicle and green oriented. Of the total 25 vans, 15 vans were on road. The van could carry around one tonne F&Vs all in display. Each van had 4 employees including driver. Two were employed for point of sale. Driver could also act as cashier or perform the sales part. One van carried 25-32 F&Vs with 40-50 variants. The F&Vs were supplied to more than 1000 households in Ahmedabad. The procurement for F&Vs was done through 2-3 procurement centres located near the mandi. The average retail price of the vegetables was reported to be Rs. 20-25/kg while that of fruits to be Rs. 30-35/kg. The company had APMC license to operate in mandi.

### **3.4B Mandi on Wheels**

An IIM-A graduate (Akrosh Sharma) designed an online portal ([mandionwheels.com](http://mandionwheels.com)) in Surat where urban consumers could buy F&Vs online targeted mainly at working urban women. Adding up more than 100 members within 10 days of launching the portal, he was now eyeing big numbers. He started a company 'Greenlink Agri Products & Commodity' in 2007 with an investment of Rs. 1 lakh. Now, it has Rs. one crore sales turnover and is growing at over 30%. The, company handled about six tonnes of vegetables, including 200 kg for home deliveries. Last year, the firm roped in a major diamond exporter to infuse funds of about Rs. 5 crore for expansion.

The company started first outlet in 2007 in 250 sq ft area in Adalaj locality of Surat city. Now, it had four outlets, each of 3,000 sq ft area and aimed to create 10 more of 5,000 sq ft. Footfalls had also grown to 800 from the initial 60. Today, company had 18 employees who handled back-office operations, delivered during the second half of the day after booking orders in the mornings. His 'mandi-styled' retail outlets also sold seasonal and exotic varieties of F&Vs. He was also working on better packaging by using paper instead of plastics to make it environment-friendly (The Economic Times, Ahmedabad, Nov. 13, 2009).

The mandi-styled shops provided the customers the shopping experience of an organized retail outlet and a product display similar to the traditional mandi. Mandi on wheels is an enterprise focused on bringing the 'mandi' closer to customers' home while keeping the essence of great range & fabulous quality alive. The website is another one of the many ways in which it offered door-step delivery of fresh fruits & vegetables. Orders could be placed in a 3 step process which customer could begin by logging in, choosing the needed F&Vs, browsing through offers and mentioning the correct address and phone number. The products were delivered as per the need and on the time promised ([mandionwheels.com](http://mandionwheels.com)). The company was also working with ABRL for its More outlets where it had shop-in-shops for handling F&Vs.

### **3.5 Summary**

RF and ABRL had established their CCs in Prantij to procure F&Vs from farmers. Both had their contact farmers who delivered produce on their own. 75-82% of the farmers were associated with RF and ABRL for less than one year. ABRL did not have any marginal and small farmers while RF had only 18% small farmers as compared to 27% marginal and 28% small farmers in Gujarat. Further, ABRL and RF farmers had higher proportions of semi-medium (50% and 32% respectively), medium (40.9% and 29% respectively) and large farmers (9.1% and 21% respectively) compared to 26% semi-medium, 17% medium and 2% large landholders in Gujarat. Furthermore, average operated land holding size, similar across both chains (15.9 and 14.7 acres respectively), was much higher than the average land holding size in Gujarat (6.4 acres). Thus, both the chains primarily dealt with larger land holders. Leasing-out farmers were altogether absent among ABRL farmers while about 14% of RF farmers were leasing out farmers. Farmers across both categories had tubewells and %age of irrigated area in operated land varied from 83 to 88. The drip irrigated area and drip irrigated farmers across both categories increased with increase in size of land holding. However, RF farmers had higher %age of drip irrigated area to total irrigated area (33%) and higher %age of drip irrigating farmers (55%) compared with that in case of ABRL farmers (9% and 14% respectively). Both chain farmers were rich in ownership of farm machinery.

In general, %age of farm workers in family decreased with increase in size of land holding. Overall, %age of farm workers in family was higher in ABRL than in RF farmers but ABRL large farmers had lower %age of family members as farm workers (26%) than that in case of RF farmers (45%). 40-50% of the farmers in both the groups were graduate. All RF farmers except large farmers had off-farm income while only medium and large farmers had off farm income in case of ABRL farmers. But, 50% of ABRL large farmers had off-farm income against nil in case of RF large farmers. The %age of households with off-farm income was 32% in case of RF compared with only 9.1% in case of ABRL farmers. All RF farmers had higher %age of milch animals (79%), number of milch animals (9) and number of milch animals/acre of land (0.5) compared to 50%, 4 and 0.3 respectively in case of ABRL farmers. Farmers across both chains were relatively rich in household asset ownership. ABRL farmers put higher %age GCA (67%) under contact crops than that by the RF farmers (47%). All RF

farmers except small were found to grow exotic vegetables which were not grown by ABRL farmers. The cropping intensity was higher on RF farms (155) than that on ABRL farms (137). Across categories, cropping intensity varied between 109 to 156 on ABRL farms and 144 to 185 on RF farms. The average yield of cauliflower and cabbage in case of RF farmers was 186.7 qtls and 192.5 qtls. respectively while that in case of cauliflower and tomato of ABRL farmers was 173 qtls and 252.5 qtls respectively. RF procured 41% of the produce in both cauliflower and cabbage each. However, ABRL procured only 35% of cauliflower and 39% of tomato. Thus, on average, farmer across both chains had to sell 59-65% of the produce in Jamalpur *mandi*. Average rejection rate at CC was 1.7% in case of RF and 2.5% in case of ABRL. Farmers realized higher prices in both the retail chains (Rs. 7/kg in cauliflower and Rs. 4.6/kg in cabbage in case of RF and Rs. 3.6/kg in cauliflower and Rs. 4.4/kg in tomato in case of ABRL) as compared to that in *mandi* (Rs. 6.4/kg in cauliflower and Rs. 4.4/kg in cabbage in case of RF and Rs. 3.5/kg in cauliflower and Rs. 3.8/kg in tomato in case of ABRL). The cost of production of cauliflower and cabbage in RF was Rs. 2.32/kg each while that in case of cauliflower and tomato in ABRL was Rs. 2.21/kg and Rs. 1.99/kg respectively). Across both chains, marketing costs were significantly higher in *mandi* channel (Re. 0.7/kg each in cauliflower and cabbage in case of RF farmers and 0.78/kg in cauliflower and Rs. 1.15/kg in tomato in case of ABRL farmers) compared to that in retail channels (Re. 0.15/kg in case of cauliflower and Re. 0.20/kg in case of cabbage in case of RF and 0.28/kg in cauliflower and Re. 0.41/kg in tomato in case of ABRL). The resulting net income was also higher in retail channels (Rs. 4.5/kg in cauliflower and Rs. 2/kg in cabbage in case of RF and Rs. 1.11/kg in cauliflower and Rs. 2/kg in tomato in case of ABRL) as compared to that in *mandi* (Rs. 3.4/kg in cauliflower and Rs. 1.4/kg in cabbage in case of RF farmers and Re. 0.51/kg in cauliflower and Re. 0.74/kg in tomato in case of ABRL farmers).

The chains offered market price based procurement prices and procured only a limited proportion of the grower's crop without any firm commitment and, more, on a day-to-day basis. They made no provision for any input and did not have any formal contract arrangement. The rejected produce was left for the farmer to dispose off elsewhere as the chains procured only 'A'/'RR' grade produce. Farmers supplying to the retail chains found them better on account of lower transportation costs as the CC were located close to the

farmers' field. Lower indent and purchase of only A/RR grade were reported to be the major problems across both the chains.

Although both chains had brought quality consciousness, introduced exotic vegetables and package of practices for certain vegetables like cucumber and long melon, farmers found the chain better on transaction cost as their CCs were located near the farmers' fields which saved farmer's time and cost on selling their produce. The chains, especially RF, also offered somewhat higher prices than market prices in most of the vegetables procured and the coefficient of variation showed lower variation across days and months in case of RF prices as against those in *mandi* prices.

## **Chapter 4**

### **F&V Retail Chains and Primary Producers in Karnataka - inclusiveness and impact**

#### **4.1 Introduction**

Karnataka is one of a few states which have a Market Intervention Scheme (MIS) to procure some agricultural commodities from farmers. It is an ad-hoc scheme to protect the growers of horticultural/agricultural commodities not covered under MSP. These crops may constitute small proportion of GCA at the national level but, are of considerable importance at the regional level. This is intended to help farmers avoid from making distress sale during the peak arrival period in the event of bumper crop when prices fall to very low level. Government of India (GoI) implements MIS for a particular commodity on the request of a State government. Losses suffered are shared on 50:50 basis between the GoI and the concerned State government. A study of farmers under MIS in Karnataka revealed that small farmers were overrepresented in MIS in onion but not in maize. Farmers possessing large quantities of onion or maize preferred to sell the entire quantity in the open market rather than selling partly in open market and partly under MIS. Procedural problems, delayed payments, and difficulty in meeting Fair Average Quality (FAQ) standards were major constraints for not availing the MIS. Lack of transportation facilities and high marketing cost due to the distant location of MIS procurement centres were the other major hurdles for not selling under MIS. Farmers with large volume of produce also preferred to sell in open market because: a) procurement centres put a ceiling on the quantity to be purchased from a single farmer (50 qtls for onion and 100 qtls for maize), and b) there was no guarantee that a farmer would be able to sell the maximum quantity allowed in procurement centres, as s/he might not fulfill the stipulations of FAQ stipulated under MIS centres (Rajkumar et al, 2008).

Karnataka is also one of a few states which have seen significant food retail chain presence in the last few years in F&V procurement and retailing. Agriculture contributes 21% to the Gross State Domestic Product (GSDP) in Karnataka which is the 3<sup>rd</sup> largest producer of fruits and stands 5<sup>th</sup> in area and production of vegetables. Only 26.5% of the GCA is irrigated. Marginal and small holdings account for 72.9% of the total holdings and the average size of an operational holding is 1.74 hectares. In Karnataka, horticultural crops are grown on 13%

of the net cultivated area (16.30 lakh hectares) (Kolady et al, 2007) and account for 5% of the GCA with vegetables alone accounting for 3% of the GCA in 2004-05 as against only 1% in early 1990s and the production during this period mainly grew due to area expansion, not yield (Kanan and Shah, 2010).

In this context, this chapter analyzes the functioning of two fresh food (F&V) retail chains- Aditya Birla Retail Limited (ABRL)'s More and Namdhari Seeds Pvt. Ltd. (NSPL)'s Namdhari Fresh (NF) with special focus on the implications for small producers. The chapter profiles the operations of the chains one of which (More) operates through two models of procurement (direct and indirect) in Karnataka and analyses their primary producer interface with a field study of two major vegetable crops each in each chain and each model. It examines the inclusiveness of the retail chains and their impact on farmer incomes.

The primary data for the study was collected from ABRL and NF management in Bangalore, Collection Centre (CC) staff, and contact and contract farmers supplying the produce at CC in Malur in Kolar district and both contact and contract farmers at CC-cum-Distribution Centre (DC) of the consolidator of ABRL. In the case of NF, produce was mostly collected by NF from villages/farms on its own. The retailing and processing operations and supply chain management was the subject of discussions with the ABRL and NF managers and staff, interview with the consolidator in Belgaum for More, and the procurement effectiveness and problems with the farmers in both the cases. The farmers in Malur belonged to the villages of Kulluru, Dodigolum, Malur, Harrohalli, Appayanagar, Dodnallala and H. Hoskote while in Belgaum to villages of K.K. Koppa, Nagarhal, Honnihal, and Hulikatta. Two major crops- cauliflower and tomato -were taken for study as these were the major crops being procured by the More in terms of volumes and number of supplying farmers. Since, the consolidator in Belgaum worked with two types of farmers in the region- contact and contract vegetable growers- the analysis is carried out across these two categories, besides across the two crops.

In case of NF, contract farmers delivering the produce to NF were chosen from the list provided by NF and the non-contract farmers (i.e. non-NF farmers) were identified with the help of village leaders/key informants. The farmers belonged to the villages of Gonipura, K.

Gollahalli, M. Gopalli, Tipur, B. Palaya, Lingapura, Tittahalli in Bangalore South taluk and M. Goppahalli in Ramanagaram taluk, Bangalore Rural district of Karnataka. Two major crops- *bhindi* and baby corn -were taken for study across both NF and non-NF farmers as these were the major crops being procured by NF in terms of volumes and number of supplying farmers. The number of farmers in each location, crop and category is given in table 4.1.

## **4.2 ABRL- A profile**

ABRL's basic business profile is given in section 3.2 in chapter 3 earlier. In the following sections, only its south Indian procurement and retail operations as they relate to its retailing in Karnataka are described and discussed.

### **4.21.1 ABRI's Bangalore Stores**

More had the largest number of stores in Bangalore across cities in India (photo 4.1). When ABRL took over TSR in 2007, it had 35 stores in Bangalore. In December, 2006 on an average, about 20 tonnes of F&V were supplied to 45 stores daily which increased to 35 tonnes for 60 stores including some dispatches to stores in Mysore, Mangalore etc. As of early March 2008, it had 91 stores with 61 in Bangalore, 10 in Mysore and Mangalore each and 10 in other places. It ran just one hypermarket in Mysore in Karnataka which was originally set up by TSR. The F&V Store Keeping Units (SKUs) in Hyderabad and Kerala stores were handled by third parties from procurement to supply and sold by the store staff. More sold 120 SKUs of F&V in its stores. It was not into institutional sales at all as these were credit sales. For some stores, capsicum and tomato were graded into A and B on trail basis but without any price differentiation. Similarly, banana bunches were split into bunches of three to six fruits to avoid losses due to handling by the customers in the stores. The stores had free home delivery provision with a minimum purchase value. Only store level promotion was carried out. There were no sales allowed from CC or DC. In Bangalore, the share of F&V in total sales was 12-13%

**Table 4.1: Location, category and crop-wise distribution of ABRL and NF farmers**

Location>	ABRL, Malur (Kolar)		ABRL, Belgaum				NF		Non-NF
Linkage with chain>	Contact		Contact		Contract				Non-NF
Crops> Farmer category	Cauliflower	Tomato	Cauliflower	Tomato	Cauliflower	Tomato	Bhindi	Baby corn	Non-NF
Marginal (≤ 2.5 acres)	1 (6.7)	-	1 (20)	1 (16.6)	-	-	3 (20.0)	2 (11.1)	4 (33.3)
Small <td>8 (53.3)</td> <td>6 (60.0)</td> <td>4 (80)</td> <td>6 (83.4)</td> <td>1 (33.3)</td> <td>2 (50.0)</td> <td>10 (66.7)</td> <td>10 (55.5)</td> <td>8 (66.7)</td>	8 (53.3)	6 (60.0)	4 (80)	6 (83.4)	1 (33.3)	2 (50.0)	10 (66.7)	10 (55.5)	8 (66.7)
Semi-medium <td>4 (26.7)</td> <td>2 (20.0)</td> <td>-</td> <td>-</td> <td>-</td> <td>1 (25.0)</td> <td>2 (13.3)</td> <td>6 (33.3)</td> <td>2 (16.7)</td>	4 (26.7)	2 (20.0)	-	-	-	1 (25.0)	2 (13.3)	6 (33.3)	2 (16.7)
Medium <td>2 (13.3)</td> <td>2 (20.0)</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td>	2 (13.3)	2 (20.0)	-	-	-	-	-	-	-
Large(>25 acres)	-	-	-	-	2 (66.6)	1 (25.0)	-	-	-
All	15 (100.0)	10 (100.0)	5 (100)	7 (100.0)	3 (100.0)	4 (100.0)	15 (100.0)	18 (100.0)	14 (100)

Note: Figures in brackets are % share in total number of farmers surveyed in each category (chain and crop).

which was same as space share devoted to F&V. All the SKUs at More stores were sold loose and there was no value addition activity in terms of cut vegetables and fruits and retail packing. Only in baby corn and sweet corn, farmers or aggregators did retail packing as per demand. There was 10% dumping at store level.

In Belgaum, other than Reliance Fresh and More, there were Smart stores of Wadhawan group. Smart had total of 40 stores in Karnataka with 34 in Bangalore, 4 in Hubli and two in Belgaum. In Belgaum, More stores had a turnover of Rs. 1.65 crore compared with Rs. 1.2 crore of Reliance and Rs. 0.6 crore of Smart in 2008-09.



**Photo 4.1: A view of retail outlets of ABRL's More and Reliance Fresh in Bangalore**

ABRL used three different models to do retail business of F&V which are as follows:

1. CC procurement and own store sale
2. SIS (Shop-in-Shop): SIS refers to an arrangement where vendor supplies to store and is paid for what is sold after deducting agreed percentage as selling margin (8-10%). The unsold produce is vendor's liability. This system is used for distant and isolated stores only. The vendor supplied the produce up to the store which then became the property of the store. The vendor was paid for the produce sold at the store after ABRL deducted agreed %age of margin. The store level wastages and dumping was vendor's liability.
3. DSD (Direct Store Delivery): Under DSD, vendor delivered F&V to the store after which it became the property and liability of the store. After delivering the

produce at store, vendor's responsibility ceased. All wastages/damages were borne by ABRL.

#### **Box 4.1: Heritage's Fresh@**

*Fresh@ set up in 2006 is an enterprise of Rs. 292 crore, Heritage Foods India Ltd. which was set up in 1992. Heritage Foods started with Fresh@ in 2006 with a store in Hyderabad. Fresh@ has about 75 stores in Hyderabad (32), Bangalore and Chennai. Heritage Foods has in its chain 2.5 lakh farmers, 6000 collection agents, 40 chilling centres, 10 packing centres and cold stores including one for fruit ripening and vegetable grading and packing set up in 2008 with 60 tonne capacity, besides 2900 milk distributors-cum-agents and 5 lakh milk buyers. It leverages back end strength of the group available in milk procurement which has been built over the last 10 years.*



**Photo: F&V section of the Fresh@ store**

*Fresh@ has two formats of stores:*

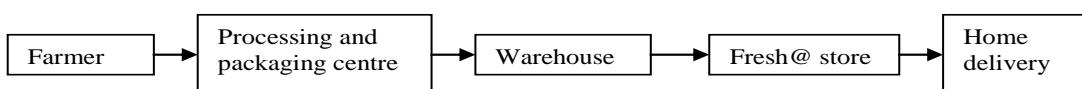
*Flagship store – Spread over 2500 sq. ft. with a merchandise mix which fulfills all the essential home needs of the Indian housewife. This includes FFVs, grocery, processed food, cleaning aids, general merchandise, bakery, dairy, beverages, and frozen food.*

*Daily format store – spread over 1000 sq. ft., is essentially a food store with wide daily fresh needs and the immediate top up needs of the consumer.*

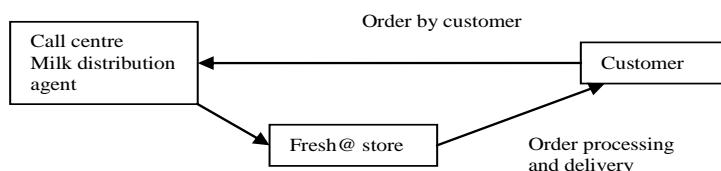
*60-70% of the merchandise across stores is same while 30-40% differs to cater to local requirements and preferences. 30% of all merchandise is F&V.*

*Oven @ Fresh”, brand of bakery products which includes an extensive range of breads, cakes, pastries, savories, chocolates, cookies, sandwiches and salads is sold at stores. It has its own private label called ‘Farmers Pride’ under which it sells rice, wheat, pulses, suji, wheat flour, all spices, dry fruits, mouth freshener, sugar, and other cereals. Most of the stores are located away from the malls in local neighborhoods and each store caters to population within 2 kms. In 2007-08, its turnover was Rs. 300 crore. It has processing plants, pre-cooling plants, cold storages, ripening chambers and grading and packaging facilities in Chittoor and Kolar. The company focuses on home delivery unlike other retail chains and this delivery is done through retail stores. The company wants to use this service for building a unique brand identity. In fact, each store's name also includes the name of the locality e.g. the one at Banjara Hills in Hyderabad is called Fresh@ Banjara Hills. The customers can order at the store, at the call centre, at the milk distribution centre or e-portal. As soon as order is placed, buyer is informed of the availability of the product or its substitute. The buyer can pay on delivery by credit card (Datta and Bhattacharya, 2007).*

**Fig. Value chain of Fresh@**



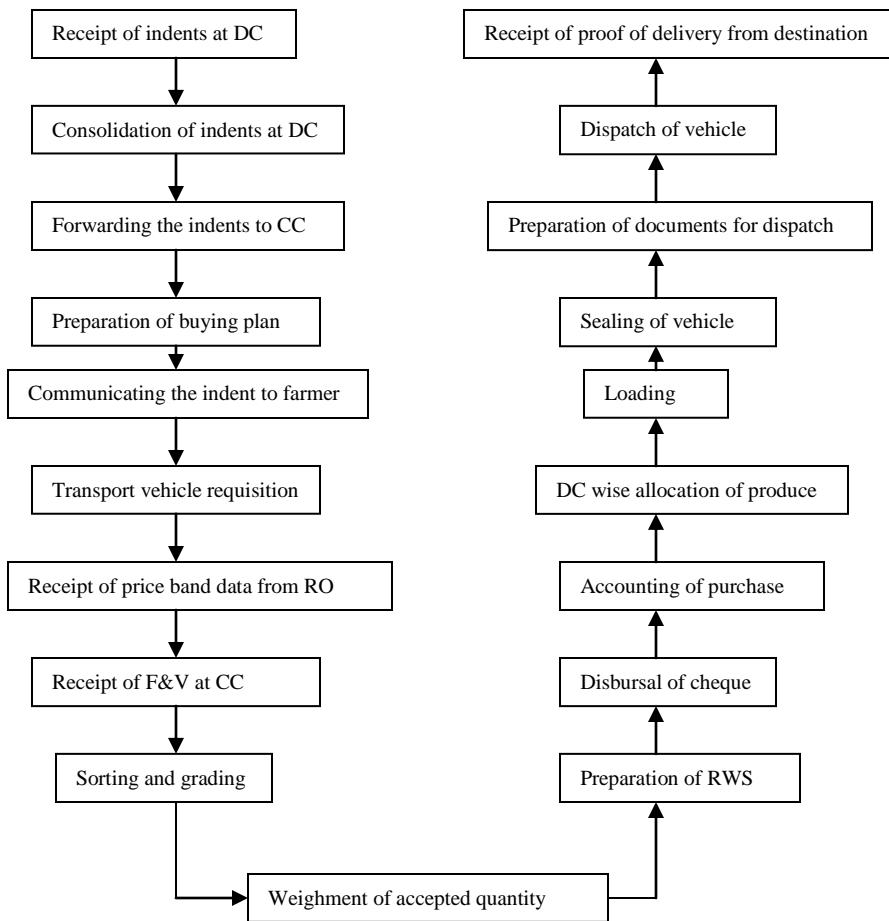
**Fig: Home delivery model of Fresh@**



*Fresh@ works with 187 farmers spread around 4 clusters (each cluster comprises 12-13 villages). Out of this, 131 are designated as “custom farmers” who are its ‘preferred’ producers and it supports them with inputs and technical support. More than 52 varieties of fruits and vegetables including green leafy vegetables are handled. Apart from this, Heritage has 5 collection centres. Field level operations are managed by 15 production and procurement assistants working in the field. Every month, in the first week, training classes for the technical staff are conducted by experts on production and plant protection aspects. The technical staff, in turn, trains the custom and registered farmers. Initially, village meetings are conducted and the services of the firm are explained. Interested farmers can register by filling an agreement form and such farmers would be provided a code and an identity card. Some of the custom farmers willing to invest on poly houses are encouraged to grow exotic vegetables such as yellow and red capsicum, broccoli, red cabbage, china cabbage, etc. These are procured by the company. Heritage Fresh@ sourced about 26-30 tonnes of vegetables during week-days which increased to 42-45 during week-ends. On an average, about 50 farmers supplied vegetables daily (Sulaiman et al, 2010). It has 18000 brand “Heritage Stores” in rural areas (with population of less than 5000) with average floor area of 100 sq. ft. which are franchise arrangements with the milk collection agents (Datta and Bhattacharya, 2007).*

#### **4.21.2 Distribution: Hoskote DC**

The constructed storage area of the F&V DC was about 12,000 square feet. Grading at the DC was manual and no processing was carried out. At the end of the day, culling of F&Vs was done twice or thrice a day for selling the next day and to remove spoiled produce. The staff at DC included eight managerial, seven skilled, and 50 unskilled casual laborers. A laborer was expected to handle 0.8 tonnes of produce daily. The DC received 100 tonnes of produce comprising 100 SKUs. The staff at DC worked in three shifts with average of 30 people per shift. The laborers loaded and delivered F&Vs at the store. The DC carried out weight check, quality check and another grading if needed, and store wise allocation (fig 4.1). There was about 2% wastage at the DC level.



**Figure 4.1: ABRL's process flow chart for F&V**

The main purpose of the DC was random sample checking of F&Vs and then allocating it to different stores in Bangalore, according to the requirement of each store. For potatoes, ABRL preferred regular size between 42-60mm which were packed in gunny bags each of 50 kg weight. The size larger than 60 mm was considered premium. Premium onions were always sold in pre-packed form only. The pre-packed sweet corn was directly delivered at DC by the farmers. The minimum time for the produce to stay at DC varied between 3 and 12 hours. F&Vs delivered from CC were generally fully graded with occasional rejection of about 1%. The rejection rate in cauliflower supplied directly at DC ranged between 5% and 8%. Photo 4.2 below shows the various possible defects in cauliflower and tomato which lead to the rejection of the produce at CC and DC.



**Photo 4.2: Defects in cauliflower and tomato**

#### 4.21.3 Sourcing Models

ABRL used three different models for procurement of F&V: a) Direct sourcing from farmers through CC; b) Sourcing from *mandi*- either directly or through a consolidator/commission agent who bought on ABRL's behalf and sorted, graded and delivered the agreed quantity at DC; c) strategic and direct sourcing (SDS) - from commodity specific important national markets for all stores, all over India.

ABRL had four CCs- two for Bangalore (Malur and Chikbalapur with 500 and 800 farmers each), one for Mysore and one for Mangalore. The total procurement of CCs supplying to Bangalore stores was 10 tonnes each, of which 50% was meant for Chennai. Another 50% of the requirement was procured from the *mandi*. Onion, potatoes are procured through large suppliers under SDS. For some of the fruits like banana (Robusta), the procurement was also done from Safal. The Safal provided only A grade bananas which were further graded at DC and made into smaller bunches of three or six as per market preference. The rejection rate in Safal produce was about 5-6%.

The daily procurement of F&Vs was 30-35 tonnes/day. Out of this, 1.5 tonnes was delivered by Safal, 5 tonnes by vendors, 15 tonnes by CCs at Malur and Chikkblapur and 7 tonnes were procured from *mandi*. About 3-4 tonnes was supplied directly by farmers. ABRL had the APMC wholesaler license to buy directly from *mandi* where they paid 1% market fee. Cauliflower was packed into crates with six pieces per crate. One

vendor/farmer delivered exotic vegetables like celery and red and yellow capsicum at D.C. in his own truck. Some of the exotics like Red Radish were purchased from the market by the farmer.

#### **4.21.4 Procurement: The Malur CC**

The CC was managed by two ABRL employees (CC incharge and commercial incharge) and two employees on third party pay roll (Receiving Supervisor and Field Supervisor). The CC had eight casual laborers with each labor expected to handle 0.8 tonnes of material daily. The procurement cost was Re.0.35/kg. About 500 farmers were associated with the CC at Malur; on an average 20-25 farmers supplied daily constituting 20 SKUs. Three to four farmers supplied beans, bitter gourd, potato and chow-chow regularly. After collecting indent information from DC at about 6 pm, CC informed the indent requirements to the farmers in the evening or next morning. The prices for the F&V were decided on the basis of the prices in the K.R. market in Bangalore. Farmers who supplied to ABRL also supplied to other retail chains like Heritage's Fresh @, Reliance Fresh, HOPCOMS, and institutional suppliers like Innova Agri Bio Park Ltd. The payment to the farmers (if < Rs.1000) was usually made in cash while that of >Rs. 1000 was through cheques. The average daily procurement at CC was around 10 tonnes. On Monday, it increased to 20 tonnes as ABRL offered schemes in retail stores on Tuesday under the banner '*Tarakari Santhe*' (Vegetable Bazaar). For tomatoes, average daily procurement was two tonnes (one tonne each for local and hybrid) and for cauliflowers 500-1000 heads based on daily indent. Most of the cauliflower and tomatoes were supplied to the DC at Chennai. Tomato accounted for 25% of the total procurement, and cauliflower and cabbage about 8% each. Farmers brought un-shredded cauliflower and cabbage heads to the CC where shredding took place before weighment. The produce was graded at CC before delivering to the DC (Photo 4.3). ABRL did not provide any crates to the farmers for any product. It took two hours from farm to CC, another hour from CC to DC and 10 hours to store making for a total time of 12-14 hours (fig 4.1). There were also some lead farmers called vendors who procured from others and supplied to ABRL at the DC, especially in case of low volume SKUs.



**Photo 4.3: Grading of tomato at ABRL CC at Malur**

The price offered by ABRL was always lower than the market price due to the deduction of transport cost to the *mandi*. Based on previous day and early morning market price, the sourcing manager decided the procurement price. The average procurement price at CC levels worked out to be Rs.9.5 per Kg. There was no commitment to buy by ABRL and no commitment to sell from farmer's side. The rejection rate was 10%. If rejection rate was higher than 10%, farmer was discouraged to sell in that particular season. Monday, Friday and Saturday had higher indent and, therefore, additional casual labor was employed to handle larger volumes. The farmer price was changed only a few days in a month and CC incharge had the flexibility to change price within the price band to accommodate farmer expectations.

ABRL had introduced new crops like snake gourd by providing seed samples and introduced new method of cultivation of cucumber and smaller size cabbages with a new variety. ABRL also advised phased sowing of the crops. All this was done under the Farm Productivity Improvement Program (FPIP) under which there was a crop inspection card which had details of farmer profile, source of irrigation, type of land, crop name, variety and production, details of meetings, purpose of meeting, suggestions given, condition of crop, and production. This programme of extension from sowing to harvesting was believed to have led to 15% increase in yield. Cost of production under FPIP was higher, but there was improvement in yield and quality as reflected in lower

rejections. ABRL conducted monthly meeting in villages jointly with Bayer Crop Science to provide agri-input extension services and for conducting trials in some of the crops.

## **4.22 The facilitator model - Belgaum**

### **4.22.1 Procurement**

ABRL, like other chains, procured from a consolidator who earlier worked with Radha Krishna Foodland and Safal. He supplied to More under SIS model for its 15 stores in North Karnataka since last one year. Under SIS, produce, its sale, and dump were all his responsibility and he paid sales commission to More. He supplied to Reliance and Smart as vendor with 40% of his total procurement going to More, 35% to Reliance and 25% to Smart. Under the vendor system, he was given a fixed price for the delivery, including his commission and the dump, and profits belonged to the chain. He was also an institutional suppliers to hotels and wedding halls. The wastage at the CC-cum-DC was 16% -half of which was used for cut F&V and the wastage at store level was 11%. He also retail packed garlic, ginger and capsicum and sold organic and herbal products in two of the More stores in Belgaum. The CC-cum-DC staff included, beside consolidator, one procurement manager, two managers, and 20 labor with six vehicles. He had a farmer base of more than 200 farmers of whom 80 were contract farmers and 136 contact farmers. Whereas procurement prices were pre-agreed with contract farmers, it was market price for others. These farmers were spread over 64 villages in Belgaum district. He supplied cabbage, cauliflower, tomato, chilies, beans, okra as part of the 34 SKUs in vegetables and 15 in fruits. He operated from the earlier CC of Ranger Farms near Belgaum.

The farmers delivered to the CC-cum-DC during 2-6 p.m. and after grading, the produce was sent to the stores. The produce reached the stores within 12 hours of the receival at CC and reached CC within six hours of harvest and, thus, took minimum of 18 hours to reach after harvest. About a dozen farmers supplied produce every day. There were three types of vegetables- hard like cabbage and cauliflower, raw like onion and potato and leafy like spinach and coriander. Whereas as tomato, cauliflower, cabbage and chili were grown under contract farming, others were procured from contact farmers. Of the total

procurement of the consolidator, 50% was from market, 35% from contract growers and 15% from contact growers. Over time, contract farming operations reduced to hard crops due to frequent price fluctuations in the market and farmer defaults.

On the other hand, 200 wholesalers and commission agents operated in about 114 shops in Belgaum wholesale vegetable market which was an unregulated market (photo 4.4). The commission agents sold the produce on behalf of farmers and charged 8% commission. The *Hamali* charges in market were Rs. 3 per 50 kg of produce. The produce was sold and bought between 2.30 pm to 8.00 pm. The average produce sold per day by a commission agent on an average was 10 tonnes.



**Photo 4.4: Arrivals of cauliflower and tomato in Belgaum F&V market**

#### **4.22.2 Contract specifications**

The farmers had a formal, written, registered individual, bi-partite acreage contract. Earlier, consolidator contracted with groups, but some farmers in the group cheated him and he incurred losses, so he started to contract individually. The buyer visited the farm before or during harvest. Although the consolidator gave advance payments to farmer or loan to buy inputs but, some small farmers were of the view that the consolidator provided advance payments/loans to big farmers only. The consolidator also provided agri-inputs like seeds, fertilizers and pesticides and timely extension services to farmers; although there was no condition to purchase inputs only from consolidator. Sometimes, he also provided credit to farmers to make payments to labour. Most of the farmers did

not have any idea of cost of input provided by the consolidator as they were of the firm view that the deductions of the input cost from the payment of the produce were transparent. The consolidator guided the farmers regarding: what seeds to use, how much seed to plant, what chemicals to use, how and when to irrigate, how much to harvest, which crop/heads/variety to harvest first etc. Although the consolidator did not impose any penalties for delayed supplies or not giving any produce at all, but in long run, he stopped working with such defaulting farmers.

#### **4.23 NF Limited**

##### **4.23.1 Introduction**

Namdhari Fresh (NF), a unit of Namdhari Seeds Private Limited – a leading vegetable seed seller and exporter, was set up in 2000 at Bangalore to export fresh vegetables. It is a certified Organic exporter and has a pack house with British Retail Consortium (BRC) and HACCP standards. NF handled more than 1000 tonnes of FFVs in domestic and international markets ([www.namdharfresh.com](http://www.namdharfresh.com)). NF deals with 40 different F&V with two companies to co-ordinate the F&V retail operations: Namdhari Farm Fresh deals with back end operations and Namdhari Agro Fresh with the front end operations. NF had corporate farm on 350 acres within its premises. The turnover of NF was Rs.30 crore during 2007-08.

##### **4.23.2 Retailing**

NF had its own chain of the retail outlets (18 in Bangalore and 3 in Delhi and one in Ludhiana) to sell F&Vs, including salad bars (photo 4.5). In addition to this, they also exported and sold to the institutional buyers such as five star hotels. All the stores were run by NF in rented premises with store ranging from 800 to 2000 sq. ft. Out of the 80 stores, 10 were without salad bars. A store carried more than 70 SKUs of F&Vs and had a staff of 10-12 persons including one manager. The daily footfalls ranged from 200 to 250 per day during week days and 300 to 350 during week-ends. The outlets carried only vegetarian food. The share of the F&V in the total store sales was 40%. The stores carried organic range in grocery and not in F&Vs, but included potato and onion. Organics accounted for only 2-3% of the total sales. The F&V accounted for 50% each in value

terms and 30% and 70% in quantity terms respectively. 70% of the fruits were imported. NF had only less than two percent share in organized retailing of F&Vs. It sold 15 tonnes of finished products daily across three segments of domestic exports and institutional altogether. It had its own pack house and cold chain facility. NF was started for export business; later on moved to institutional sales and then finally retailing (fig.4.2).

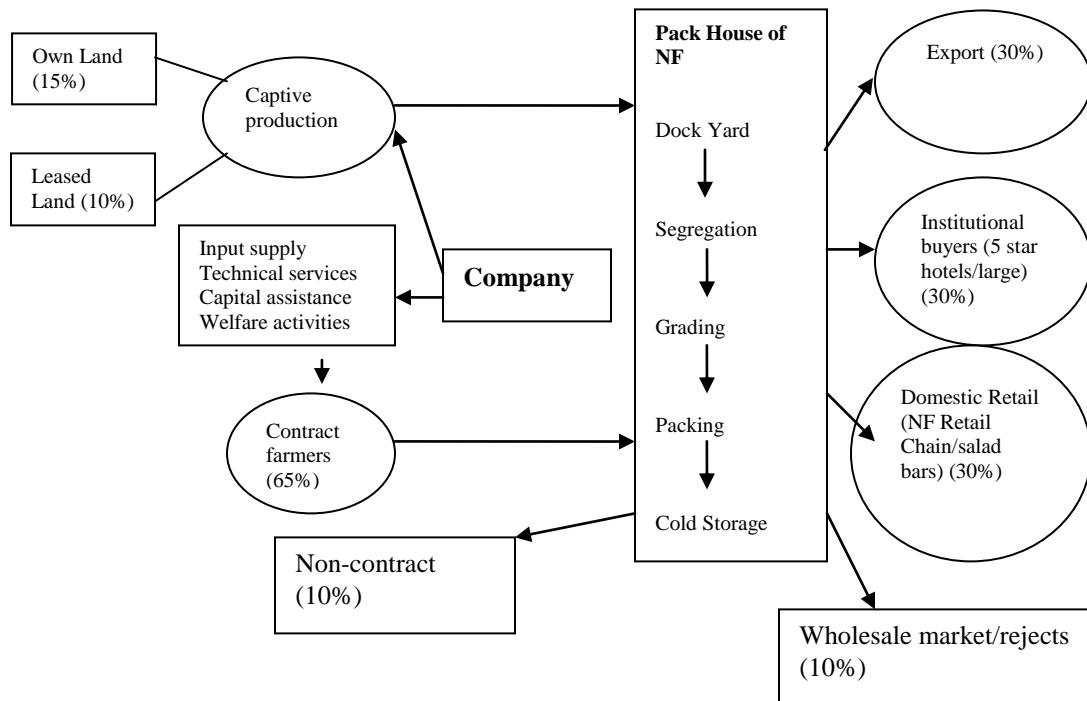


**Photo 4.5: NF's retail outlet and the salad bar in Bangalore**

NF products were mostly costlier than that of the traditional retailers as stores were perceived to be high end stores. About 30% of the space in stores was devoted to F&Vs which gave 40% of total sales. The ready to use products accounted for only less than 0.1 % of the total sales. The prices of the F&Vs were determined once in every three days based on the procurement price, market price, overheads and margins. 80% of the stores of NF were making profits now and a store generally took three years to reach break even. NF promoted the sales by offering schemes in the stores like ‘buy one get one free’ and by other means like ‘world of mouth’ and advertising through pamphlets. About 3-10% produce was wasted at store level which was discarded as dump. NF was also looking at wholesale supplier role. NF considered high cost of infrastructure and difficulty in the estimation of demand as major problems in retailing of F&Vs. 75% of the buyers were loyal but most of the buyers did not appreciate quality. NF had not undertaken any home delivery of FFV so far.

#### 4.23.3 Procurement

NF practiced both captive farming (by leasing-in land) and contract farming in the ratio of 20:80 on 1500 acres (fig. 4.2).



**Fig. 4.2: NF Value Chain**

Source: Dhananjaya and Rao (2009), updated with latest information from NF management.

The contract growers were spread across Karnataka, Tamil Nadu and Himachal Pradesh. Over 1200 farmers were involved in contract farming, contributed 110 tonnes (70%) of total production (160 tonnes per week) in 2008. Namdhari also undertook contract farming in Ootty in Tamil Nadu and practiced corporate farming on leased land in some villages near Ludhiana in Punjab. Farmers should have land either owned or leased, assured irrigation, at least 4-5 family members who could serve as labor and should sell only to Namdhari to become growers for the chain.

Positive attitudes towards farming, willingness to work hard and a good reputation in the village were the main considerations while selecting farmers as contract growers. 50% of its contract farmers owned 3-5 acres of land. NF had practiced planned production to

match the daily demand of F&Vs and avoid overproduction. Farmers were informed about the production plan and sowing and harvesting dates were given in advance. The farmers also received technical guidance for the package of practices for F&Vs. The cost of inputs was initially borne by NF but was deducted when the farmers were paid.

NF also worked with fruit growers which were 150 in case of pomegranate and 200 in case of grapes. It procured 20 tonnes of baby corn from 700 growers, 0.5 tonnes of *bhindi* from 50 growers and one tonne of tomato from 30 growers. NF had five production centres; each having 15 to 20 villages under it. Crates were also provided to farmers to pack several vegetables. Weighment of the produce was done twice, first, at the farm level and then at DC level. NF picked up produce from the farm gate. It procured three grades of the produce: A, B and C, but not D. The lower quality produce was bought at lower price after grading. The payments for the produce were made at every fortnight. The procurement cost came to Re. one/kg including transport and personnel cost. The major vegetables procured were baby corn, ridge gourd, zucchini, tomato, cucumber, *bhindi*, being grown in all seasons. Export oriented rejections were as high as 40% and domestic retail 5% both of which were sold to wholesale market. The rejection rate for the farmer was 20% but higher in *bhindi* (40%). Since NF procured only young tender produce, the farmers could get 3 to 4 crops in a year. NF system of payment by cheque was not only transparent but helped the farmers to save money/earnings and increased their creditworthiness with the banks. Partial crop insurance scheme and pre-fixed prices gave farmers confidence while planning their crops.

#### **4.23.4 Processing**

The F&Vs took 15-24 hours to reach from farm to DC and further 12 hours to reach the stores. Thus, the cycle time ranged from 15-36 hours. Supply to the stores was only once in a day. There were 100 of women in export packaging and processing as well in domestic retail processing. There were separate chambers for domestic and export value addition (Photo 4.6). NF had three cold storages with a capacity of 8-10 tonnes. The wastage at the DC was less than 1%. The total wastage from farm to consumers was 10%. There were more 250 workers including supervisors and nine managerial personal in

packed houses with average handing of one tonne by 17 persons. All exports were of fresh produce only and include baby corn, snow pea, lettuce, chilies and fruits like pomegranate, grapes. Of the total produce dispatched, 5 tonnes each goes to domestic market, export market and raw material each.



**Photo 4.6: Baby corn processing at NF at Bidadi pack house near Bangalore**

#### **4.23.5 Quality, grading and rejections**

The *bhindi* should not be blackened, soft and smooth one, small in size and curled and without borer attack. Generally, 3-4 inch long *bhindi* was considered for A, 2-3 inch for B and below 2 inch for C grade. NF supplied A grade *bhindi* to their retail stores while B grade to the wholesalers in the K.R. and Yeshwantpur markets. NF, on an average, procured about 65% of A grade *bhindi*, 25% of B grade and rest 10% of C grade *bhindi* from the farmers. Although, NF was committed to procure only A and B grades, but during the shortage of produce in the market, it sometimes also procured C grade produce. The rejection rate in *bhindi* was 2%. Sometimes, NF also rejected more due to overproduction or low price in the market. The rejected produce was sold in the local markets at a very low price of Rs. 1-3/kg. If it was of too poor quality, then it was used as fodder.

NF procured the produce from the farmers only when the yellow hair of the baby corn cob approximately fall 4cm from the cob. The NF classified baby corn into different grades based on girth and height of the cob. The lengthy cobs with less girth were taken into A grade. The texture of the seed on the cob was also taken into account while giving different grades. The average recovery rate of baby corn from the cobs was around 12%.

NF farmers, on an average, had about 60% A grade baby corn, 25% B grade and 15% C grade baby corn. The NF supplied A grade to its retail outlets and remaining B and C grades to hotels, restaurants and sometimes also exporting it. In general, A grade baby corn had 10-12 cobs/kg, B grade had 8-10 cobs/kg and C grade had 6-7 cob/kg.

#### **4.23.6 Nature of Contract**

The contract was informal, oral and non-registered and NF contracted the individual farmers with bi-partite agreement. The contracts were acreage and quantity contracts. As the contract was informal, the farmers were not registered with NF. These farmers were small landholders and were reluctant to undertake high price fluctuations in the market. NF provided the agri-inputs like seeds regularly, along with irregular supplies of fertilizers, pesticide due to their short supplies. It was mandatory to use the seed provided by NF only, otherwise it did not procure the produce. NF provided the seeds produced by themselves, but sometimes, it also purchased from other companies like Syngenta and Advanta at a price of Rs. 280/kg in baby corn but provided to the farmers at a subsidized price of Rs 150/kg.

NF optimized their resources as they used the same vehicle for supplying the inputs and carrying the produce. NF also provided the extension services to the farmers by the technical experts free of cost to guide them regarding what seeds to use, how much seed to plant, what chemicals to use, how and when to irrigate, how much and when to harvest and which vegetable/variety to harvest first.

NF gave the fixed prices for baby corn, chilli and *bhindi* and market based price for other F&Vs. Although there was no written agreement to deliver the produce to NF but, in case farmers defaulted to deliver the produce then, NF stopped working with and supplying inputs to those farmers next year. Only 9% of the farmers defaulted on delivery of produce. Although NF procured the entire quantity but rarely when NF refused to take extra quantity, farmers sold it in the open market at lower prices. NF also introduced the drip irrigation to the selected loyal and regular supplying farmers. It arranged the drip irrigation for the farmers by paying 50% of the drip cost which was later deducted in

installments from the produce that the farmers delivered to NF. The rest 50% cost was borne by the central government subsidy. More than 70% farmers did not have any idea of cost of input provided by NF as they were firmly of the view that NF operations and deduction of input costs were fully transparent as compared to about 27% farmers who were maintaining all the records of the inputs. NF provided the crates free of cost to pack *bhindi* while charged for the *nano* bags used to pack the baby corn. Usually, five crates of *bhindi* per harvest per farmer were supplied to NF. To build long term bond with the farmers, NF provided the interest free loans to help the farmers for irrigation facilities. The produce was weighed in the presence of the farmer, and is then transported to the packing house by Namdhari. NF had its own refrigerated trucks to collect the produce from the farms and to transport it over long distances.

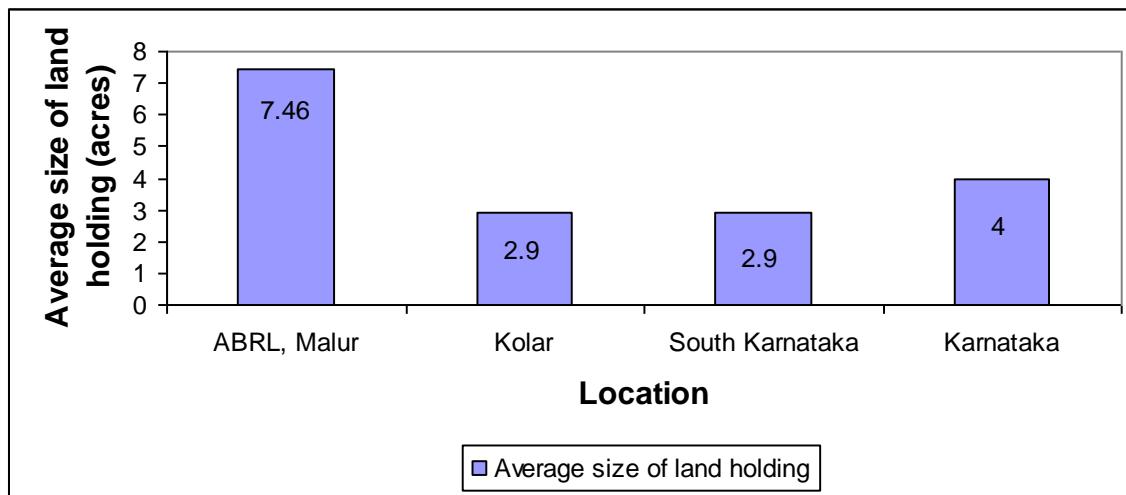
#### **4.31.1 The Malur farmer profile**

Of the total farmers interviewed, more than half were small, about 1/4<sup>th</sup> semi-medium, 16% medium and only 4% marginal. The average owned holdings of marginal, small, semi-medium, and medium farmers were of the order of 1.5, 3.6, 7.3 and 21.2 acres respectively. The averaged operated holdings of small and semi-medium farmers increased to 3.9 acres and 7.5 acres respectively as leasing-in was prevalent among these farmers only. The %age of leased-in area in operated area was 8% in case of small farmers and only 2.3% in case of semi-medium farmers; with average for all farmers being 2.9%. All the operated area was cultivated in case of marginal farmers and it started to decline with increase in size of holding. Thus, %age of cultivated area in operated area was 84.5 in case of small, followed by 82.3 and 47.1 in case of semi-medium and medium farmers respectively; the average for all being 67 (table 4.2).

Among the growers supplying to ABRL, only 4% were marginal, 56% small, 24% semi-medium and 16% medium farmers as against 48.2% marginal, 26.6% small, 16.9% semi-medium and 7.3% medium in Karnataka and 62.4%, 22.4%, 10.9%, 3.9% respectively in Kolar district. Thus, ABRL had a lower proportion of marginal farmers (4% only) compared with the proportion of marginal farmers in Karnataka (48.2%), Kolar and South Karnataka (62% each). But, proportion of small farmers was higher in ABRL

farmers (56%) compared to that in Kolar, South Karnataka and Karnataka (between 22-27%) (table 4.3). The average operated area of retail chain farmers (7.46 acres) was much higher than the average size of the operational holding (4 acres) in Karnataka, and Kolar and South Karnataka (2.9 acres each) (fig. 4.3).

**Fig. 4.3: Average size of holding in different parts of Karnataka and the retail chain**



Of all the farmers interviewed, 60% were cauliflower growers and 40% tomato growers. However, number of farmers studied in each crop did not vary too much as both crop farmer categories had about 53-60% small, 20-27% semi-medium and 13-20% medium farmers. Both categories also had similar average owned (7.1 acres for cauliflower and 7.4 acres for tomato growers) and operated area (7.3 acres for cauliflower and 7.7 acres for tomato growers); average for all farmers being 7.24 acres and 7.46 acres respectively. Only small cauliflower growers had higher %age of operated land (10) as leased-in area as compared to that in case of both small (6%) and semi-medium (8%); the overall in case of both cauliflower and tomato growers being almost the same (2.7% and 2.9%). The %age of cultivated area in operated land was also same across cauliflower and tomato cultivators (67%). In both growers' categories, %age cultivated area in the operated land declined with the increase in the size of the land holding (table 4.4).

Among land holding categories, marginal farmers had 100% of operated area as tubewell irrigated in comparison with about 89% among small, 78% among semi-medium and only 53% among medium farmers; the average for all farmers being 70%. Tomato

growers had slightly higher %age of operated land irrigated (72%) compared to that in case of cauliflower growers (68%). The marginal farmers did not have any area under drip irrigation. On the other hand, 50% of small farmers, surprisingly, had about 47% of area under drip as compared to 1/3<sup>rd</sup> of semi-medium and 3/4<sup>th</sup> of medium farmers who on an average, put about 32-34% of the irrigated area under drip irrigation system. Across both crop categories, on an average, about 53% of cauliflower and 40% of tomato growers put about 38% area under drip. Overall, about 48% farmers had about 38% area under drip (table 4.5).

The ownership of farm machinery was higher among medium farmers as all of them had pumpset, electric motor, and sprayer. 75%, 50% and 25% medium farmers also had tractor, trailer and potato digger respectively. The ownership of farm machinery started to decline with decrease in size of holding. Thus, among all semi-medium farmers, 83% each had pumpset and electric motor, 68% had sprayer, 50% had tractor, 33% each had trailer and plough/cultivator and 17% had potato digger in comparison to ownership of only 7% each in tractor, trailer and cultivator, 64% each in pumpset and electric motor, 86% in sprayer and 7% potato digger among small farmers. All marginal farmers had ownership of pumpset, electric motor, and sprayer each. Crop-category wise distribution of farmers revealed that cauliflower growers were somewhat richer in ownership of farm machinery than the tomato growers (table 4.6).

**Table 4.2: Location and farmer category-wise distribution of ABRL farmers (average in acres)**

Parameters> Farmer category	No. of farmers		Land owned		Leased- in land		Operated land		Leased in land as %age of operated area		Net cultivated area*	
	Malur	Belgaum	Malur	Belgaum	Malur	Belgaum	Malur	Belgaum	Malur	Belgaum	Malur	Belgaum
Marginal	1 (4)#+	2 (10.5)	1.50	2.50	-	-	1.50	2.50	-	-	1.50 (100)	2.5 (100.0)
Small	14 (56)	13 (68.4)	3.61	3.50	0.32	0.31	3.93	3.81	8.1	8.1	3.32 (84.5)	3.19 (83.7)
Semi-Medium	6 (24)	1 (5.3)	7.33	10.00	0.17	-	7.50	10.0	2.3	-	6.17 (82.3)	10 (100.0)
Medium	4 (16)	-	21.25	-	-	-	21.25	-	-	-	10 (47.1)	-
Large	-	3 (15.8)	-	50.00	-	- (3.33)\$	-	46.67	-	- (6.7)	-	40.67 (87.1)
All	25 (100)	19 (100)	7.24	11.08	0.22	0.21 (0.53)	7.46	10.76	2.9	2.0 (4.8)	5 (67)	9.39 (87.3)

Note:# Figures in parentheses are % in total number of farmers in each location.

\*Figures in parenthesis are %age of net cultivated area in operated area;

\$ figures in brackets are for leased-out area

**Table 4.3: Farmer category and region -wise average land holding and %age of holdings in Karnataka in 2005-06**

Farmer category>	Marginal	Small	Semi-medium	Medium	Large	All
Kolar	1.1 (62.4)	3.4 (22.4)	6.6 (10.9)	13.8 (3.9)	33.6 (0.41)	2.9 (100)
South Karnataka	1.0 (62.1)	3.5 (22.3)	6.6 (11.0)	14.0 (4.0)	41.4 (0.6)	2.9 (100)
Belgaum*	1.2 (39.4)	3.6 (27.7)	6.8 (20.6)	14.4 (10.7)	37.2 (1.6)	5.0 (100)
North Karnataka	1.3 (30.3)	3.6 (32.1)	6.8 (24.4)	14.4 (11.5)	34.8 (1.7)	5.4 (100)
Karnataka	1.1 (48.2)	3.5 (26.6)	6.7 (16.9)	14.3 (7.3)	36.8 (1.0)	4.0 (100)

Note: Figures in brackets are % share in holdings; \* for the year, 2000-01.; Source: [indiastat.com](http://indiastat.com), downloaded on 25<sup>th</sup> September, 2009.

**Table 4.4: Location, farmer category and crop wise distribution of ABRL farmers**

Parameters> Farmer category/crop (Average in acres)	No. of farmers	Land owned	Leased- In land**	Operated land	Leased in land as %age of operated area	Net cultivated area†	
<b>Malur (Kolar)</b>							
Cauliflower	Marginal	1 (4)	1.50	-	1.50	-	1.50 (100)
	Small	8 (53.3)	3.38	0.37	3.75	9.9	3.06 (81.6)
	Semi-Medium	4 (26.7)	8.25	-	8.25	-	6.62 (80.2)
	Medium	2 (13.3)	22.50	-	22.50	-	10.0 (44.4)
	All	15 (100) (60)*	7.10	0.20	7.30	2.7	4.83 (66.2)
Tomato	Small	6 (60)	3.92	0.25	4.17	6.0	3.67 (88)
	Semi-Medium	2 (20)	5.50	0.50	6.00	8.3	5.25 (87.5)
	Medium	2 (20)	20.0	-	20.0	-	10.0 (50.0)
	All	10 (100) (40)*	7.45	0.22	7.67	2.9	5.25 (68.2)
<b>All</b>		25 (100)	7.24	0.22	7.46	2.9	5.0 (67.0)
<b>Belgaum</b>							
Contact	Marginal	2 (16.7) (10.5)*	2.50	-	2.50	-	2.5 (100)
	Small	10(83.7) (52.6)*	3.50	0.40	3.90	10.3	3.2 (82.0)
	All	12(100) <b>(63.1)*</b>	3.33	0.33	3.66	9.0	3.08 (84.1)
Contract	Small	3 (42.9) (15.8)*	3.50	-	3.50	-	3.17 (90.6)
	Semi-Medium	1 (14.3) (5.3)*	10.00	-	10.00	-	10.00(100.0)
	Large	3 (42.9) (15.8)*	50.00	- (3.33)	46.67	- (6.7)#	40.67(87.1)
	All	7 (100.0) <b>(36.9)*</b>	24.36	- (1.43)	22.93	- (5.9)#	20.21(88.1)
<b>All</b>		<b>19 (100.0)</b>	<b>11.08</b>	<b>0.21 (0.53)</b>	<b>10.76</b>	<b>2.0 (4.8)</b>	<b>9.39 (87.3)</b>

Note: \* %ages of total number of farmers, † figures in brackets are %age of net cultivated area of the operated land, \*\*figures in brackets are for leased out land, # figures in brackets are for leased out land as %age of owned land.

**Table 4.5: Farmer category and crop-wise distribution of ABRL Malur farmers by irrigation profile (average area in acres)**

Irrigation profile> Farmer category/crop	Tubewell irrigated area*	Drip-irrigated area**	%age drip-irrigated to irrigated area
Marginal	1.50 (100)	-	-
Small	3.50 (89.1)	1.64 (50.0)	46.9
Semi-medium	5.83 (77.7)	2.00 (33.3)	34.3
Medium	11.25 (52.9)	3.62 (75.0)	32.2
Cauliflower	5.00 (68.5)	1.90 (53.3)	38.0
Tomato	5.55 (72.4)	2.10 (40.0)	37.8
All	5.22 (70.0)	1.98 (48.0)	37.9

Note: \* Figures in brackets are irrigated area as %age of operated land; \*\* figures in brackets are %age of farmers with drip irrigation.

**Table 4.6: Farmer category and crop-wise distribution of ABRL Malur farmers by ownership of farm machinery**

Farm machinery ownership> Farmer Category /crop	Tractor	Trailer	Plough/ cultivator	Pumpset	Electric Motor	Sprayer	Potato digger
Marginal	-	-	-	1 (100.0)	1 (100.0)	1 (100.0)	-
Small	1 (7.1)	1 (7.1)	1 (7.1)	9 (64.3)	9 (64.3)	12 (85.7)	1 (7.1)
Semi-medium	3 (50.0)	2 (33.3)	2 (33.3)	5 (83.3)	5 (83.3)	4 (66.7)	1 (16.7)
Medium	3 (75.0)	2 (50.0)	4 (100.0)	4 (100.0)	4 (100.0)	4 (100.0)	1 (25.0)
Cauliflower	5 (33.3)	4 (26.7)	5 (33.3)	13 (86.7)	13 (86.7)	14 (93.3)	1 (6.7)
Tomato	2 (20.0)	1 (10.0)	2 (20.0)	6 (60.0)	6 (60.0)	7 (70.0)	2 (20.0)
All	7 (28.0)	5 (20.0)	7 (28.0)	19 (76.0)	19 (76.0)	21 (84.0)	3 (12.0)

Note: Figures in brackets indicate the %age of farmers in each category in total.

On an average, small farmers had a comparatively large family size (8) than that of the marginal and semi-medium farmers (6). However, average family size of medium farmers was the largest (12). The %age of farm family workers in family was the highest among marginal farmers (83) followed by small (67), semi-medium (62) and medium (47) farmers. Thus, %age of farm family workers in family decreased with increase in size of land holdings. Although, cauliflower growers had a lower family size (7) than tomato growers (9) but %age of farm workers in family was somewhat higher among the cauliflower growers (65) than that among the tomato growers (60) (table 4.7).

Illiteracy was found only among small and semi-medium farmers as about 14% small and 17% semi-medium were illiterate. Literacy level was high among the medium farmers as

75% were graduate and only 25% were below SSC level as compared to half of small and semi-medium farmers each being below SSC level and SSC degree holders respectively. Illiterates were present only among cauliflower growers while 30% of tomato growers were graduate degree holders compared to only 13% among cauliflower. Half of the tomato growers were also below SSC level (table 4.8).

**Table 4.7: Farmer category and crop-wise family size and structure of ABRL farmers**

Family details> Farmer category/ Crop	Family members				Family size	Farm family workers				Farm worker	%age of farm workers in family			
	Adult		Children			Adult		Children						
	Male	Female	Male	Female		Male	Female	Male	Female					
<b>Malur (Kolar)</b>														
Marginal	1.0	2.0	2.0	1.0	6.0	1.0	2.0	1.0	1.0	5.0	83.3			
Small	2.8	2.4	1.9	0.9	8.0	2.4	2.1	0.6	0.3	5.4	67.5			
Semi-medium	2.5	1.8	1.0	1.0	6.3	2.2	1.7	-	-	3.9	61.9			
Medium	4.0	4.2	2.5	1.7	12.4	2.7	2.2	0.7	0.2	5.8	46.8			
Cauliflower	2.5	2.1	1.7	1.1	7.4	2.1	1.6	0.7	0.4	4.8	64.9			
Tomato	3.4	3.2	1.8	1.0	9.4	2.7	2.6	0.3	-	5.6	59.6			
<b>All</b>	<b>2.8</b>	<b>2.5</b>	<b>1.7</b>	<b>1.1</b>	<b>8.1</b>	<b>2.4</b>	<b>2.0</b>	<b>0.5</b>	<b>0.2</b>	<b>5.1</b>	<b>63.0</b>			
<b>Belgaum/ Contact farmers</b>														
Marginal	1.0	1.0	2.0	1.5	5.5	1.0	1.0	-	-	2.0	36.4			
Small	2.9	2.7	1.3	0.4	7.3	2.9	2.5	0.2	0.1	5.7	78.1			
<b>All</b>	<b>2.6</b>	<b>2.4</b>	<b>1.4</b>	<b>0.6</b>	<b>7.0</b>	<b>2.6</b>	<b>2.3</b>	<b>0.2</b>	<b>0.1</b>	<b>5.2</b>	<b>74.3</b>			
<b>Contract farmers</b>														
Small	2.3	1.7	2.3	1.3	7.6	2.3	1.7	-	-	4.0	52.6			
Semi-medium	1.0	1.0	1.0	3.0	6.0	1.0	1.0	-	-	2.0	33.3			
Large	4.0	5.0	8.0	5.0	22.0	2.7	3.7	5.0	2.0	13.4	60.9			
<b>All</b>	<b>2.9</b>	<b>3</b>	<b>4.6</b>	<b>3.1</b>	<b>13.6</b>	<b>2.3</b>	<b>2.4</b>	<b>2.1</b>	<b>0.9</b>	<b>7.7</b>	<b>56.6</b>			
<b>Both categories</b>	<b>2.7</b>	<b>2.6</b>	<b>2.6</b>	<b>1.5</b>	<b>9.4</b>	<b>2.5</b>	<b>2.3</b>	<b>0.9</b>	<b>0.4</b>	<b>6.1</b>	<b>64.9</b>			

**Table 4.8: Farmer category and crop-wise literacy level of ABRL Malur farmers**

<b>Literacy level&gt; Farmers' category/crop</b>	<b>Illiterate</b>	<b>Below SSC</b>	<b>SSC</b>	<b>HSC</b>	<b>Graduate</b>
Marginal	-	-	-	1(100.0)	-
Small	2 (14.3)	7 (50.0)	2 (14.3)	2 (14.3)	1 (7.1)
Semi-medium	1 (16.7)	1 (16.7)	3 (50.0)	-	1 (16.7)
Medium	-	1 (25.0)	-	-	3 (75.0)
Cauliflower	3 (20.0)	4 (26.7)	3 (20.0)	3 (20.0)	2 (13.3)
Tomato	-	5 (50.0)	2 (20.0)	-	3 (30.0)
All	3 (12.0)	9 (36.0)	5 (20.0)	3 (12.0)	5 (20.0)

Note: figures in brackets are % of each category in total.

The household asset ownership was the highest among medium farmers followed by semi-medium, small and marginal farmers. The hh asset ownership increased with increase in size of land holding. Marginal farmers only had two-wheeler while about 92.9%, 71.4% and 14.3% small farmers had two-wheelers, TV and dish TV respectively. Car/jeep and pick-up truck were only owned by 50% and 25% semi-medium and 25% and 17% medium farmers respectively. All medium farmers had TV while dish TV were only owned by half of the medium farmers in comparison to 83% and 68% among semi-medium farmers respectively. Cauliflower growing farmers were richer in ownership of two wheelers and car/jeep while tomato growing farmers were richer in the ownership of pick-up truck, dish TV and TV (table 4.9).

**Table 4.9: Farmer category and crop-wise hh asset ownership of ABRL Malur farmers**

<b>Household asset ownership&gt;</b>		<b>Two wheeler</b>	<b>Car/jeep</b>	<b>Pick-up truck</b>	<b>Dish TV</b>	<b>TV</b>
Farmers' category	Marginal	1 (100)	-	-	-	-
	Small	13 (92.9)	-	-	2 (14.3)	10 (71.4)
	Semi-medium	6 (100)	1 (16.7)	1 (16.7)	4 (66.7)	5 (83.3)
	Medium	4 (100)	2 (50.0)	1 (25.0)	2 (50.0)	4 (100.0)
Crop	Cauliflower	15 (100)	2 (13.3)	1 (6.7)	4 (26.7)	11 (73.3)
	Tomato	9 (90.0)	1 (10.0)	1 (10.0)	4 (40.0)	8 (80.0)
All		24 (96.0)	3 (12.0)	2 (8.0)	8 (32.0)	19 (76.0)

Note: \* figures in brackets indicate %age of farmers in each category in total.

Marginal and semi-medium farmers did not have any off-farm income in comparison to 21.4% small and 25% medium farmers who had off-farm income. However, small farmers had higher number of adults/acre of land with off-farm income (0.07) and

number of adults/family with off-farm income (0.28) than that among the medium farmers (0.01 and 0.25 respectively); overall average for all farmers being 0.03 and 0.20 respectively. But, the off-farm income/month/person was higher in case of medium farmers (Rs. 750) than that in case of the small farmers (Rs. 607); with overall average for all farmers being Rs. 460. Tomato growers had higher %age of households (henceforth hhs) with off-farm income, higher number of adults/acre of land and higher number of adults/family with off-farm income than that among the cauliflower growers (table 4.10).

**Table 4.10: Farmer and crop-wise distribution of ABRL farmers by off-farm income**

Off farm income> Farmer category/ Crop	% of hhs having off- farm income	No. of adults/ acre of land with off-farm income	No. of adults /family with off-farm income	Off-farm income (Rs./month /person)
<b>Malur (Kolar)/contact</b>				
Small	21.4	0.07	0.28	607.1 (2833)
Medium	25.0	0.01	0.25	750.0 (3000)
Cauliflower	13.3	0.02	0.13	333.3 (2500)
Tomato	20.0	0.04	0.30	650.0 (3250)
All	16.0	0.03	0.20	460.0 (2875)
<b>Belgaum/contact</b>				
Marginal	50.0	0.20	0.50	1250.0 (2500)
Small	20.0	0.05	0.20	550.0 (2750)
All	33.3	0.09	0.33	666.7 (2667)
<b>Contract</b>				
Small	66.7	0.19	0.67	2333.3 (3500)
All	28.6	0.01	0.29	1000.0 (3500)
<b>Both contact and contract</b>				
Marginal	50.0	0.20	0.50	1250.0 (2500)
Small	30.7	0.08	0.31	961.5 (3125)
All	26.3	0.02	0.26	789.5 (3000)

Note: Figures in brackets indicate average for only farmers with milch animals.

Marginal farmers had entire GCA under contact vegetables as compared to 89% in case of small, 61% in case of semi-medium, 64% in case of medium farmers; the overall average for all farmers being 77% (fig. 4.4). But, the number of vegetables grown was fewer in case of marginal farmers as they had about 1/3<sup>rd</sup> area each under cauliflower, cluster bean and tomato. Thus, the %age of GCA under cauliflower was the highest in case of marginal (33%) compared to only 16% in case of small farmers (16%) and only

9-10% in case of semi-medium and medium farmers. The %age of GCA under tomato was highest in case of small farmers (26%) followed by marginal (17%), semi-medium (10%) and medium farmers (9%) (table 4.11).

**Table 4.11: Farmer category-wise cropping pattern of ABRL Malur farmers**

Farmer category> Crop-wise GCA (in acres)	Marginal	Small	Semi- medium	Medium	All
<b>Contact crops</b>					
Tomato	0.50 (16.7)	1.64 (25.8)	1.25 (10.5)	1.80 (9.3)	1.58 (16.4)
Cauliflower	1.00 (33.3)	1.03 (16.2)	1.50 (12.6)	2.18 (11.3)	1.38 (14.3)
Carrot	-	1.00 (15.7)	0.90 (7.6)	1.70 (8.8)	1.10 (11.4)
Beet root	-	0.58 (9.1)	0.70 (5.9)	1.24 (6.4)	0.80 (8.3)
Potato	-	0.28 (4.4)	1.20 (10.1)	1.50 (7.8)	0.68 (7.1)
Cluster bean	1.00 (33.3)	0.50 (7.9)	0.50 (4.2)	1.02 (5.3)	0.66 (6.9)
Knol-Khol	-	0.28 (4.4)	0.32 (2.7)	1.05 (5.4)	0.46 (4.8)
Chow-chow	-	0.21 (3.3)	0.45 (3.8)	0.82 (4.2)	0.36 (3.7)
Capsicum	0.50 (16.7)	0.14 (2.2)	0.10 (0.8)	0.40 (2.1)	0.19 (2.0)
Other vegetables#	-	-	0.30 (2.5)	0.64 (3.3)	0.17 (1.8)
<b>Veg. GCA and % to total GCA</b>	<b>3.0 (100)</b>	<b>5.66 (89.0)</b>	<b>7.22 (60.7)</b>	<b>12.35 (63.8)</b>	<b>7.39 (76.7)</b>
<b>Non-contact crops</b>					
Paddy	-	-	1.26 (10.6)	2.10 (10.9)	0.64 (6.6)
Sapota	-	-	1.30 (10.9)	1.50 (7.8)	0.55 (5.7)
Mulberry	-	-	1.10 (9.2)	1.42 (7.3)	0.49 (5.1)
Fodder	-	0.70 (11.0)	0.80 (6.7)	1.40 (7.2)	0.42 (4.4)
Raagi	-	-	0.22 (1.8)	0.58 (3.0)	0.15 (1.6)
<b>Non-veg. GCA and % in total GCA</b>	<b>-</b>	<b>0.70 (11.0)</b>	<b>4.68 (39.3)</b>	<b>7.00 (36.2)</b>	<b>2.24 (23.3)</b>
Overall GCA	3.00	6.36	11.9	19.35	9.63
Net cultivated area	1.50	3.32	6.17	10.0	5.00
Cropping intensity*	200	191.6	192.9	193.5	192.7

Note: \$- figures in brackets are % share of each crop in GCA; #Other vegetables were coriander, chilli and bitter gourd; \*refers to GCA/net cultivated area, not operated area.

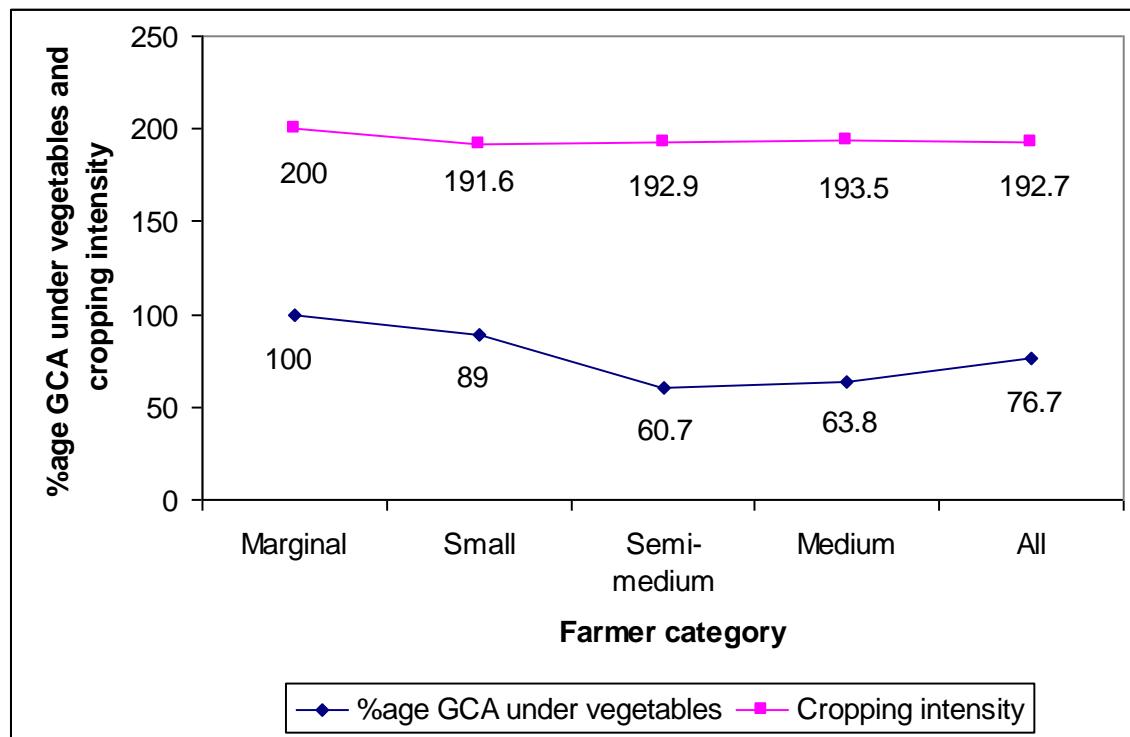
On an average, all farmers put about 16% and 14% of GCA under tomato and cauliflower respectively. The %age of GCA under traditional crops was highest in semi-medium farmers (39%) compared to 36% and 11% in case of medium and small farmers respectively; the overall average for all farmers being 23%. The marginal farmers did not grow any traditional crop while small farmers only grew fodder. The semi-medium and medium farmers also put about 8-11% of GCA under crops like paddy, sapota and

mulberry in addition to fodder (7%) and ragi (2-3%). The cropping intensity was higher on small farms (200) while on other farmer categories, it was around 193 which was the overall average as well (table 4.11).

#### **4.31.2 ABRL Cauliflower production and Procurement**

Cauliflower is a three to four month crop which can be planted throughout the year. Harvesting in cauliflower starts two months after transplanting and continues for one month till fully harvested. Generally, farmers took 2-3 crops of cauliflower in a year. Of the total cost of production of Rs. 23261.4/acre, fertilizers (18%), pesticides (16.6%), family labor (13%), seeds (12.3%), land rent (11%) and preparation (10.4%) were major costs of production. The farmers did not incur any irrigation as electricity for tubewell was free in Karnataka (table 4.12).

**Figure 4.4: Farmer category wise cropping pattern and cropping intensity of ABRL farmers in Kolar, Karnataka**



Cauliflower was sold in loose form to ABRL and the Kolar and K.R. markets; while for distant Chennai market, it was sold by packing in gunny bags which were not returned.

Generally, 18-25 flowers were packed in one gunny bag. The transportation cost for one delivery of produce ranged between Rs. 150-200 at ABRL while it varied between Rs. 500-700 for Kolar and K.R. market while for Chennai market, transporter charged about Rs. 25-30/bag. Thus, transportation costs for contact farmers were lower while selling to ABRL (Re. 0.20/kg) than that while selling in *mandi* (Re. 0.50/kg). Moreover, spoilage/weight loss reported was higher in *mandi* channel (Re. 0.09/flower) than that in ABRL channel (Re. 0.04/flower). Farmers also saved the commission charges in linking with ABRL which ranged between 8-10 % in the three *mandis*, average being 8.8% (Re. 0.49/flower). Sometimes unloading charges were also charged from farmers either by including it in the transportation cost or by increasing the *mandi* commission. Thus, in all, cost of marketing of produce was Re. 0.24/flower in ABRL channel compared with more than five times high cost of marketing of Rs. 1.33/flower (table 4.13). Of the total cauliflower produced in Malur, about 47% was sold to ABRL, 37% to *mandi* and rest (3%-6% each) to HOPCOMS, Reliance Fresh and Heritage@Fresh. The average yield in cauliflower was 11533.3 flowers/acre. Although 62.7% of the cauliflower was sold in retail channels and the rest 37.3% in *mandi* but after accounting for average rejection rate of 5.5%, net produce sold to retail and *mandi* channels came out to be 59.2% and 40.8% respectively. The average price in all the retail channels varied from Rs. 5.03 to Rs. 5.6/flower; overall average turned out to be Rs. 5.2/flower (table 4.14).

**Table 4.12: Average production costs of ABRL farmers in cauliflower**

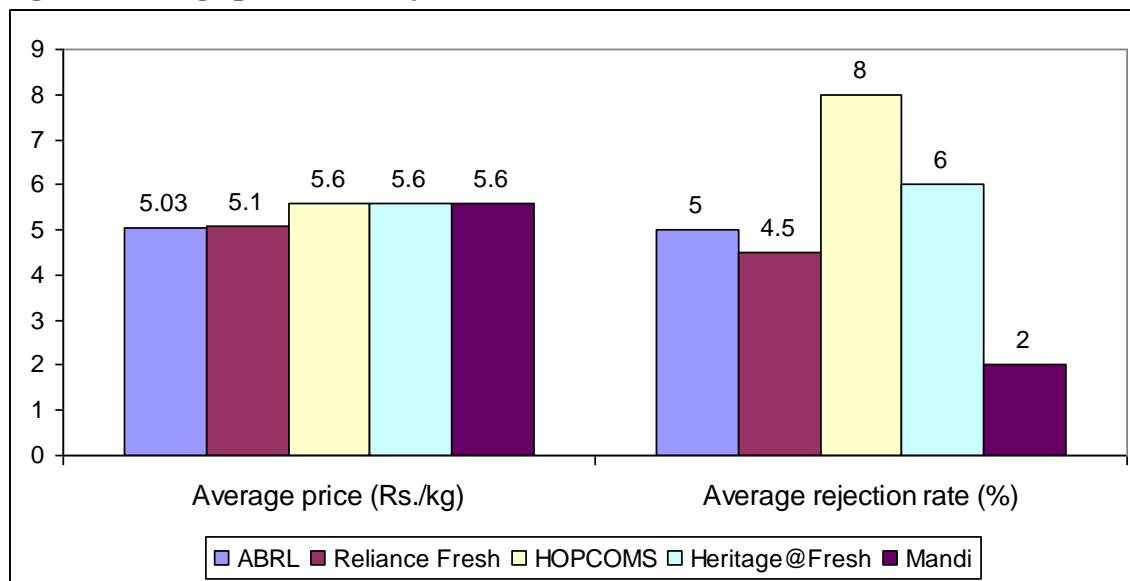
Crop> Cost components (Rs./acre)	Malur (Kolar)		Belgaum	
	Contact	Contact	Contract	Contract
Land rent	2527.3 (10.9)	3085.7 (13.2)	3600.0 (14.8)	
Land preparation	2428.6 (10.4)	1300.0 (5.6)	800.0 (3.3)	
Seed	2851.2 (12.3)	3857.1 (16.5)	3280.0 (13.5)	
FYM	850.0 (3.7)	771.4 (3.3)	1080.0 (4.4)	
Fertilizer	4221.6 (18.1)	3642.9 (15.6)	3600.0 (14.8)	
Pesticide	3857.6 (16.6)	3200.0 (13.7)	3480.0 (14.3)	
Weedicide	1666.7 (7.2)	464.3 (2.0)	-	
Labour	Hired	1851.6 (8.0)	4378.5 (18.7)	4030.0 (26.4)
	Family	3006.8 (12.9)	2685.7 (11.5)	4450.0 (8.4)
Cost of production	23261.4 (100)	23385.6 (100)	24320 (100)	

Note: Figures in brackets are % share in average cost of production in each category.

Thus, average price in non-retail channel (Rs. 5.6/flower) was higher than that in retail channel (Rs. 5.2/flower). The average cost of production/flower was Rs. 2.02 across both channels. But, lower cost of marketing in retail channel than that in non-retail led to higher cost of production and marketing in non-retail channel (Rs. 3.35/flower) than that in retail channel (Rs. 2.28/flower). The net income in each channel was higher in retail channel (Rs. 2.92/flower) than that in non-retail channel (Rs. 2.25/flower). Thus, the farmers, on an average, earned Rs. 2.65/flower by selling the produce in both channels (table 4.15). About 68% of the cauliflower growing farmers used only ABRL and *mandi* channels; the rest used more than one retail channel in addition to *mandi* to sell the produce (table 4.16).

Farmers realized same price for cauliflower in HOPCOMS and Heritage@Fresh as in *mandi* as the companies offered only the previous day *mandi* price to the farmers. But, farmers realized lower price in ABRL (Rs.5.0/flower) and Reliance Fresh (Rs. 5.1/flower) than that in *mandi* (Rs. 5.6/flower). But, the farmers had higher rejection rate in HOPCOMS (8%) and Heritage@Fresh (6%) than that in the ABRL (5%) and Reliance Fresh (4.5%). The average rejection rate across retail channels was 5.5%. The rejected produce was sold in local *mandi* (fig 4.5).

**Fig.4.5: Average prices and rejection in cauliflower across chains at Malur, Kolar**



**Table 4.13: Location, category and channel-wise transaction costs of ABRL farmers in cauliflower (average per flower and total in Rs.)**

Location>	Belgaum								Malur (Kolar)			
Farmers' category	Contact				Contract				Contact			
Channel>	ABRL		Mandi		ABRL		Mandi		ABRL		Mandi	
Transaction costs> (Rs./flower)	(/flower)	Total	(/flower)	Total	(/flower)	Total	(/flower)	Total	(/flower)	Total	(/flower)	Total
Cost of gunny bag	0.05	607.0	0.27	3278.6	0.05	440.0	0.27	2376	-	-	0.25	2883.3
Transportation cost	0.83	10078.6	0.83	10078.6	0.68	5984.0	0.68	5984	0.20	2506.7	0.50	5766.7
Spoilage/weight loss	-	-	-	-	-	-	-	-	0.04	501.3	0.09	1038.7
Unloading charges	-	-	0.11	1349.2	-	-	0.11	977.8	-	-	-	-
Commission	-	-	0.31	3788.6	-	-	0.35	3097.6	-	-	0.49	5651.3
Marketing cost	0.88	10685.6	1.52	18495.0	0.73	6424.0	1.41	12435.4	0.24	3008.0	1.33	15339.3

**Table 4.14: Channel-wise %age of cauliflower sold, average price realized and rejection rate in Malur**

Channel>	ABRL	Reliance Fresh	HOPCOMS	Heritage@ Fresh	Mandi*
%age of cauliflower sold	46.7 (29.0) #	5.7 (17.0)	7.3 (22.0)	3.0 (9.0)	37.3 (23.0)
Average price (Rs./flower)	5.03	5.10	5.60	5.60	5.60
Rejection rate (%)	5.0	4.5	8	6	2

Note: \* three different markets (Kolar, K.R. and Chennai) were used to sell cauliflower.

# Figures in brackets are for farmers who sold in >one retail channel.

**Table 4.15: Location, channel-wise costs and returns of farmers in cauliflower**

Location>	Malur (Kolar)		Belgaum			
Marketing channels>	Contact		Contact		Contract	
	Retail	Mandi	ABRL	Mandi	ABRL	Mandi
% of cauliflower sold	59.2	40.8	25	75	90	10
Qty. sold(flowers/acre)	6827.7	4705.6	3035.7	9107.2	7920.0	880.0
Price/flower	5.20*	5.60	3.8	3.9	4.8	4.4
Gross sales proceeds	35504.1	26351.3	11535.8	35518.0	38016.0	3872.0
Cost of production	13770.7 (2.02)	9490.7 (2.02)	5846.4 (1.93)	17539.2 (1.93)	21888 (2.76)	2432 (2.76)
Marketing cost	1780.7 (0.26)	6258.4 (1.33)	2671.4 (0.88)	13871.2 (1.52)	5781.6 (0.73)	1243.5 (1.41)
Cost of production and marketing	15551.4 (2.28)	15749.1 (3.35)	8517.8 (2.81)	31410.4 (3.45)	27669.6 (3.49)	3675.5 (4.18)
Net income	19952.7 (2.92)	10602.2 (2.25)	3018.0 (0.99)	4107.5 (0.45)	10346.4 (1.31)	196.5 (0.22)
Category-wise net income	30554.9 (2.65)		7125.5 (0.59)		10542.9 (1.20)	

Note: Figures in parenthesis indicate the per flower costs and returns; \* average of prices in all the retail channels

**Table 4.16: Channel-wise distribution of Malur farmers**

Channel	%age of farmers
ABRL + mandi only	67.7
ABRL+ mandi + HOPCOMS	13.3
ABRL+ mandi + Heritage@Fresh + Reliance Fresh	6.7
ABRL+ Heritage@Fresh + Reliance Fresh + HOPCOMS	6.7
ABRL+ mandi + Reliance Fresh	6.7

#### 4.31.3 ABRL Tomato production and procurement

Tomato is a 4-5 month crop which can be grown throughout the year but yields better either in rainy or winter season. The harvesting starts after 80 days of transplanting and continues for 2-3 months. Of the total cost of production of Rs. 22723/acres, the major production costs were fertilizers (22%), pesticides (20.5%) and family labor (16.8%) (table 4.17).

Farmers sold tomatoes in crates provided by ABRL without any cost. In traditional marketing channel, farmers sold the tomatoes by packing in wooden boxes which were usually provided by the vendor, transporter, commission agent or wholesaler. One wooden box contained about 15 kg. of tomatoes. Usually Rs.8/wooden box was charged to transport the produce to *mandi* (Kolar and K.R. market, Bangalore) that included Rs. one as rent for one wooden box. The transportation cost for one delivery of produce

ranged between Rs. 150-200 at ABRL while for Kolar and K.R. market, it varied between Rs. 500-700. In delivering the produce at Chennai market, transporter charged Rs. 30-35 per gunny bag of 50 kg. each. Thus, transportation costs were lower while selling to ABRL (Re. 0.23/kg) than that while selling in *mandi* (Re. 0.62/kg). In *mandi* channel, farmers also paid the commission varied between 8-10% in different *mandis*. Sometimes, loading and unloading charges were included in per wooden box or gunny bag transportation charges. Thus, marketing cost in ABRL channel was only Re. 0.23/kg compared to Re. 0.91/kg in *mandi* channel (table 4.18).

**Table 4.17: Average production costs of ABRL farmers in tomato (Rs/acre)**

Location>	Malur (Kolar)		Belgaum	
Type of linkage with farmer> Cost components	Contact	Contact	Contract	
Land rent	2500.0 (11.0) #	2388.9 (11.4)	2616.7 (11.7)	
Land preparation	1275.0 (5.6)	1522.2 (7.3)	950.0 (4.2)	
Seed	1550.0 (6.8)	1366.7 (6.5)	1416.7 (6.3)	
FYM	750.0 (3.3)	955.6 (4.6)	716.7 (3.2)	
Fertilizer	5000.0 (22.0)	3377.8 (16.2)	2750.0 (12.3)	
Pesticide	4650.0 (20.5)	3822.2 (18.3)	3916.7 (17.5)	
Weedicde	975.0 (4.3)	-	-	
Labour	Hired	2200.0 (9.7)	2540.0 (12.1)	6058.0 (27.1)
	Family	3823.0 (16.8)	4921.0 (23.5)	3951.0 (17.7)
Cost of production*	22723.0 (100.0)	20894.4 (100.0)	22375.8 (100.0)	

Note: #Figures in brackets are % share in average cost of production

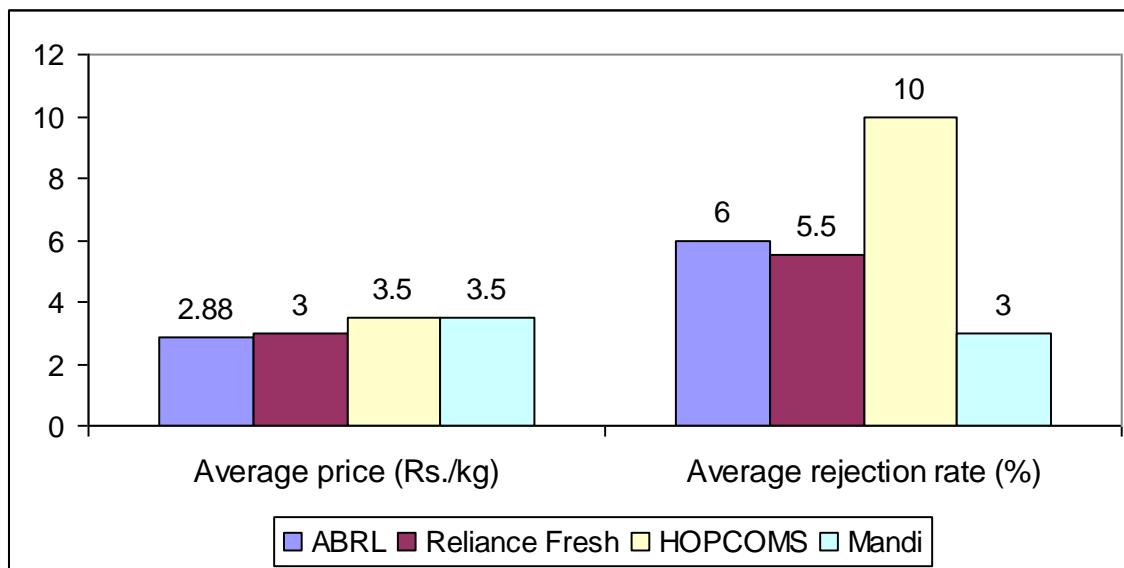
\*The overall average cost figures include no costs of irrigation as electricity for irrigation is free in Karnataka.

The average yield in tomato was 131.1 qtls/acre. The average rejection rate in retail channels was 6.5% compared with 3% in *mandi*. Thus, after accounting for all these rejections in both channels, the net produce sold in both retail and non-retail channels turned out to be 42.1% and 57.9% respectively (table 4.19). The rejected produce in retail and non-retail channels was sold to local traders/commission agents in *mandi* at reduced price. The average price in non-retail channel including for rejected produce was higher (Rs. 3.55/kg) than that in the retail channel (Rs. 3.1/kg). Although, average cost of production was same across both channels (Rs. 1.73/kg), but reduced cost of marketing (Re. 0.23/kg) in retail compared to non-retail channel (Re. 0.91/kg), resulted into lower

total cost of production and marketing in retail channel (Rs. 1.96/kg) than that in non-retail channel (Rs. 2.64/kg). The net income in each channel was also higher in retail channel (Rs. 1.14/kg) than that in non-retail channel (Re. 0.91/kg). Thus, farmers on average, earned about Rs. 1/kg by selling in both retail and non-retail channels (table 4.19).

About 55% of the tomatoes were sold in *mandi* and the rest in retail channels. Of the 10 ABRL farmers (total), 8 sold in *mandi* as well as to ABRL and one each to Reliance Fresh and HOPCOMS besides *mandi* and ABRL. Farmers using more than one retail channel sold, on an average, 35% each to ABRL and *mandi* and 15% each to Reliance Fresh and HOPCOMS. The farmers realized similar price for tomato in HOPCOMS and *mandi* (Rs. 3.5/kg) as HOPCOMS offered previous day *mandi* price only. However, farmers realized lower price in ABRL (Rs. 2.9/kg) and Reliance Fresh (Rs. 3.0/kg) than that in the *mandi* price (Rs. 3.5/kg) (fig. 4.6). But, the rejection rate was higher at HOPCOMS (10%) than that at ABRL (6%) and Reliance Fresh (5.5%), while it was only 3% in *mandi* (table 4.20).

**Fig. 4.6: Average prices and rejection rate in tomato across chains at Malur, Kolar**



**Table 4.18: Location, category and channel-wise transaction costs of ABRL farmers in tomato (average per Kg. and total in Rs.)**

Location>	Belgaum								Malur (Kolar)			
Farmers' category	Contact				Contract				Contact			
Channel>	ABRL		Mandi		ABRL		Mandi		ABRL		Mandi	
Transaction costs (Rs./kg.)>	(/kg.)	Total	(/kg.)	Total	(/kg.)	Total	(/Kg.)	Total	(/kg)	Total	(/kg.)	Total
Cost of basket	-	-	0.33	3960	-	-	0.33	3168	-	-	-	-
Transportation cost	0.40	4800	0.40	4800	0.24	2304	0.24	2304	0.23	3015.5	0.62	8128.9
Unloading charges	-	-	0.05	600	-	-	0.05	480	-	-	-	-
Commission	-	-	0.33	3360	-	-	0.28	2726.4	-	-	0.29	3802.2
Marketing cost	0.40	4800	1.06	12720	0.24	2304	0.90	8678.4	0.23	3015.5	0.91	11931.1

**Table 4.19: Location, channel-wise costs and returns of ABRL farmers in tomatoes**

Location>	Malur (Kolar)			Belgaum			
Marketing channels>	Contact		Contact		Contract		
Average costs and returns/acre (Rs.)	Retail	Mandi	ABRL	Mandi	ABRL	Mandi	
%age of tomatoes sold	42.1	57.9	25	75	87.5	12.5	
Quantity sold (kg./acre)	5519.8	7591.3	3000	9000	8400	1200	
Price (Rs./kg.)	3.10*	3.55	3.2	3.5	3.75	3.55	
Gross sales proceeds	17111.3	26949.2	9600	31500	31500	4260	
Cost of production	9566.4 (1.73)	13156.6 (1.73)	5223.6 (1.74)	15670.8 (1.74)	19578.8 (2.33)	2797 (2.33)	
Marketing cost	1269.5 (0.23)	6908.1 (0.91)	1200 (0.4)	9540 (1.06)	2016 (0.24)	1084.8 (0.9)	
Cost of production and marketing	10835.9 (1.96)	20064.7 (2.64)	6423.6 (2.14)	25210.8 (2.80)	21594.8 (2.57)	3881.8 (3.23)	
Net income	6275.4 (1.14)	6884.5 (0.91)	3176.4 (1.06)	6289.2 (0.7)	9905.2 (1.18)	378.2 (0.32)	
Category wise net income	13159.9 (1.00)			9465.6 (0.79)	10283.4 (1.07)		

Note: Figures in parenthesis indicate per flower costs and returns; \* average price of all retail channels.

**Table 4.20: Channel-wise %age of tomatoes sold, average price realized and rejection rate Malur**

Channel>	ABRL	Reliance Fresh	HOPCOMS	Mandi*
Average price (Rs./kg.)	2.88	3.0	3.5	3.5
Rejection rate (%)	6	5.5	10	3

Note: \* average for three different markets (Kolar, K.R. and Chennai) where farmers sold tomatoes.

#### **4.31.4 Quality specifications, rejections and defaults**

The quality parameters in cauliflower include size, color, compactness, ideal weight and free from pests. In cauliflower, ABRL preferred white, fresh, compact, disease/insect free weighing between 500-750 gms. Loose curds with raisyness and brown hair and insect-pest damaged were not bought. Farmers selling in local (K.R. and Kolar markets) and Chennai market harvested cauliflower according to the maturity of the crop. In tomatoes quality is measured in terms of color, firmness, size and freedom from pests. For tomatoes, ABRL preferred red, shining, matured, >45 mm in diameter tomatoes. For Chennai market, the tomatoes were harvested fully developed and at green stage. ABRL bought A and B grade produce only. For local markets, tomatoes were harvested at pink/red stage when some portion of the tomatoes turned reddish/pink. Over matured, insect/pest attacked and highly exposed to sunlight tomatoes were rejected. The fully red and ripened tomatoes are preferred for local retail outlets while for supplying to the DC at Chennai, half ripened tomatoes are preferred. The rejection rate in cauliflower and tomato at CC was 5-6%. The produce rejected by CC was supplied to the local market in Malur and to the local vendors. About 32% of total farmers delivering at ABRL defaulted due to:

- Low price in ABRL compared to price in other retail chains like Reliance Fresh, HOPCOMS.
- Higher production due to which farmers preferred to deliver the whole produce to *mandi* rather than selling it in two different channels which would ultimately increase their transaction costs.
- Lower quality produce resulting from adverse climatic conditions.
- Lower indent due to which farmers preferred to sell in *mandi*.

88% farmers were of the view that selling produce to ABRL had resulted into time saving as otherwise they had to stand in queues and bargain the price with commission

agents/wholesalers. Most farmers also reported that linking with retail companies had reduced their transaction costs which saved them about Rs. one per kg; although the retail channels like ABRL gave them lower prices than the *mandi* price. For example, if farmers received Rs.2.88/kg. price for tomato, then their effective price realization was 3.88/kg. Giving crates to pack the produce, no packing material cost, no cheating in weighing and quality consciousness brought by ABRL were the other major reasons for selling the produce to ABRL (table 4.21).

**Table 4.21: Distribution of farmers by reasons for selling to ABRL Malur (multiple responses)**

Reasons	%age of farmers reporting
Time saving	88
Lower transportation costs	72
No loading/unloading charges	68
No commission charges	68
Less spoilage/weight loss	56
Giving crates to pack different crops	52
No packaging material costs	48
No cheating in weighing	40
Quality consciousness	28

All farmers preferred retail chain as their first choice to sell the produce and ranked the price of the ABRL as better in comparison to their non-retail channels. About 60% of farmers associated with ABRL faced various problems in working with the retail channel. Of these, 60% faced high rejection rate, 40% grading difficulty, 30% each low price for A grade and low price in general.

For supply chain improvement, 40% farmers suggested that ABRL should purchase entire produce while 24% wanted advance payments for their produce. Higher prices than market, free transportation and cold storage facilities were the other major suggestions for improving supply chain (table 4.22).

**Table 4.22: Distribution of farmers by suggestions on the role of retail chain for supply chain improvement in Malur**

Role of ABRL	%age farmers reported
Purchase entire produce	40.0
Give advance payments for the produce	24.0
Give higher prices than the market prices	20.0
Provide free transportation facility	8.0
Provide cold storage facilities	4.0

Note: these are multiple responses and therefore do not add upto 100.

On the role of government in F&V marketing, farmers were of the view that it should fix MSP for FFVs, provide subsidies to promote their production and encourage retailing of FFVs with more retail outlets.

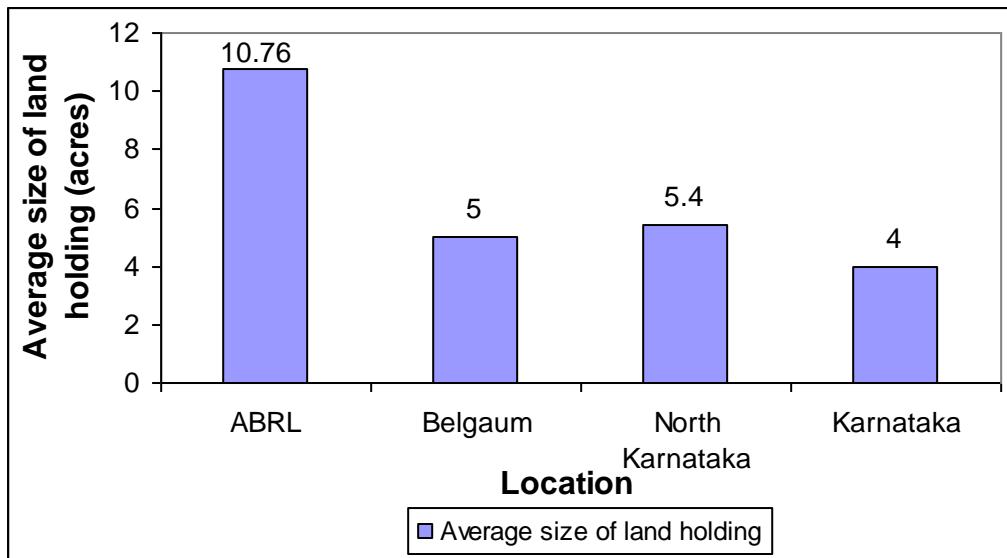
#### **4.32.1 The Belgaum Farmer profile**

Of the total farmers interviewed, about 69% were small followed by large (16%), marginal (10%) and semi-medium farmers (5%). The average owned holdings of marginal, small, semi-medium, and large farmers were of the order of 2.5, 3.5, 10 and 50 acres respectively. Leasing-in and leasing-out practice was respectively prevalent among small and large farmers only. With the leasing in and leasing out practice, the average operated land holdings of small farmers increased to 3.8 acres, while that of large farmers decreased to 46.7 acres. Overall, the average operated holding size decreased from 11.1 acres to 10.8 acres due to leasing out. The %age of the leased-in area in operated area was 8% in case of small farmers and leased out land as proportion of owned land 7% in case of large farmers. The respective figures in case of all farmers were 2% and 5%. All of the operated area was cultivated in case of marginal and semi-medium farmers followed by 87% in case of large and 84% in case of small farmers; the overall in case of all farmers being 87%. Thus, small farmers, surprisingly, had lower %age of operated as cultivated area as compared to the other farmer categories (table 4.2).

Among these growers supplying to ABRL through consolidator, only 10.5% were marginal and 5.3% semi-medium farmers as against 48.2% marginal and 16.9% semi-medium in Karnataka and 39.4% and 20.6% respectively in Belgaum. But, ABRL had a higher proportion of small farmers (68.4%) compared with the proportion of small farmers (26.6%)

in Karnataka and 27.7% in Belgaum. The average operated area of retail chain farmers (10.7 acres) was much higher than the average size of the operational holding (4.0 acres) in Karnataka, north Karnataka (5.4) and Belgaum (5.0) (fig.4.7). Of the total, 63% farmers were contact and the rest contract farmers (37%). Among the contact farmers, 84% were small and 16% marginal while in case of contract farmers, about 43% each were small and large, followed by semi-medium (14%). This was much higher than the proportion of such farmers in Belgaum, north Karnataka or Karnataka state (ranging from 27-32%) (table 4.3).

**Fig.4.7: Average size of holding in different parts of Karnataka and ABRL farmers**



The average operated land holding of contact farmers was small (3.7 acres) as compared to that of contract farmers (22.9 acres), evident from the fact that operated land holdings of contact farmers were either marginal (2.5 acres) or small (3.9 acres) compared to small (3.5 acres), semi-medium (10 acres) and large (46.7 acres) in case of contract farmers (table 4.3). This average size of contact growers was also lower than the state, north Karnataka or Belgaum average. However, contract farmers had a much higher average size of operated (23 acres) land than the state (4 acres), north Karnataka (5.4 acres) or Belgaum average (5.0 acres) (table 4.3).

Leasing-in and leasing out practice was respectively prevalent among small contact and large contract farmers only. About 10% of operated land of small contact farmers was leased-in land as against 7% of the leased-out area of the owned land among large contract farmers; the

respective figures for all contact and contract farmers were 9% and 6%. The %age net cultivated area in operated area was higher in case of contract farmers (88%) than that in case of contact farmers (84%) (table 4.4). Among contact farmers, marginal farmers had 100% irrigated area in comparison with about 69% among small; the average for all contact farmers being 73%; while small and semi-medium contract farmers had 100% area irrigated each and large farmers about 87% of the operated area. 88% of the operated area of contract farmers was irrigated, the rest being rainfed. Thus, contract farmers had higher %age of operated area as irrigated area than that in case of contact farmers.

Only 25% contact farmers had diesel engine, 50% each had pumpset and electric motor and 75% had sprayers. The contract farmers were more resourceful in ownership of farm machinery as 16% farmers had owned tractor, trailers, plough/cultivator each and 57% had pumpset, electric motor and diesel engine each. All large and semi-medium farmers had all the farm machinery except tractors/trailers and plough/cultivator in case of semi-medium contract farmers (table 4.23).

The contract farmers had average family size (14) double that of the contact farmers (7); due, in large part, because of larger family size in case of large farmers (22). The %age of farm family workers in family was 74% in contact farmers, while it was 57% in contract farmers, the overall being 65%. Thus, although, average family size of contact farmers was lower than that of the contract farmers but the %age of farm family workers in family were higher in case of contact farmers than that in case of contract farmers as all of them were small or marginal farmers (table 4.7). About 1/3<sup>rd</sup> each of the heads of contact farmers were illiterate as compared to none among contract farmers. Moreover, about 29% heads of contract farmers were graduates and 43% HSC degree holders as compared to no hhs with graduates and only 1/3<sup>rd</sup> HSC degree holders in case of contact farmers. Even, the SSC degree hhs were also higher among the contract farmer (29%) than that in case of contact farmers (8%). Thus, among all farmers, about 37% were HSC degree holders, 16% each either had SSC degree or were below SSC, and about 10% had graduate degrees.

**Table 4.23: Farmer and land holding category-wise distribution of ABRL farmers by ownership of farm machinery in Belgaum**

Farm machinery ownership> Farmer category		Pumpset	Electric motor	Diesel engine	Sprayer
<b>Contact</b>	Marginal	1 (50.0)	1 (50.0)	-	2 (100)
	Small	5 (50.0)	5 (50.0)	3 (30.0)	7 (70)
	All	6 (50.0)	6 (50.0)	3 (25.0)	9 (75)
<b>Contract</b>	Small	-	-	-	3 (100)
	Semi-medium	1 (100)	1 (100)	1 (100)	1 (100)
	Large	3 (100)	3 (100)	3 (100)	3 (100)
	All	4 (57.1)	4 (57.1)	4 (57.1)	7 (100)
<b>Both categories</b>		10 (52.6)	10 (52.6)	7 (36.8)	13 (68.4)

Note: Figures in brackets are % of all farmers owning respective equipment.

The farmers who had off-farm income were either marginal or small. The semi-medium and large contract farmers did not have off-farm income. The %age of farmers having off-farm income was more among contact farmers (33%) than that in case of contract farmers (29%); overall for all farmers being 26%. The number of adults/acre of land with off-farm income were also higher among contact farmers (0.09) than that in case of contract farmers (0.01); the average for all farmers being 0.02. But, the number of adults/acre of land turned out to be higher in case of small contract farmers (0.19) when compared with that in case of small contact farmers (0.05). The number of adults/family with off-farm income was 0.33 in case of contact farmers compared with 0.29 in case of contract farmers; the overall average for all farmers being 0.26. But, the small contract farmers had higher number of adults/family than that in case of small contact farmers. The average off-farm income/month/person was also higher in case of contract farmers (Rs. 1000) than that in case of contact farmers (Rs. 666.7); the overall average for all farmers being Rs. 789.5. Thus, although the %age of hhs with off farm income, number of adults/acre of land with off-farm income and number of adults/family with off-farm income were higher in case of contact farmers but the average off-farm income/month/person was higher among the contract farmers (table 4.10).

The contract farmers were also resource rich in household asset ownership than the contact farmers as all contract farmers had TV, 71% two wheeler and 57% each car/jeep and dish TV compared to 66.7% two wheeler and TV each among contact farmers. The contact farmers

did not possess any car/jeep and dish TV. Thus, of all farmers, 79% had TV, 68% two wheeler and 21% each car/jeep and dish TV.

Across both categories of farmers, average %age of GCA under vegetable crops was higher in contact farmers (78) than that in case of contract farmers (72), the overall average being 73%. On an average, cauliflower took 11.5% of GCA and tomato another 22.3%. The %age of GCA under cauliflower and tomato was as high as 30.2% and 29.3% respectively in case

**Table 4.24: Category-wise cropping pattern and cropping intensity of ABRL Belgaum farmers**

<b>Farmer category&gt; Crop-wise GCA (acres)</b>	<b>Contact</b>	<b>Contract</b>	<b>All</b>
<b>Vegetable crops</b>			
Tomato	1.65 (29.3)	7.13 (20.4)	3.67 (22.3)
Chilli	0.34 (6.0)	6.50 (18.6)	2.61 (15.9)
Cauliflower	1.70 (30.2)	2.22 (6.4)	1.89 (11.5)
Brinjal	0.08 (1.4)	3.5 (10.0)	1.34 (8.2)
Cabbage	0.60 (10.7)	1.75 (5.0)	1.02 (6.2)
Beans	-	2.49 (7.1)	0.92 (5.6)
<i>Bhindi</i>	-	1.43 (4.1)	0.53 (3.2)
Onion	-	0.14 (0.4)	0.05 (0.3)
<b>Vegetable crop GCA and % to total GCA</b>	<b>4.37 (77.6)</b>	<b>25.16 (72.0)</b>	<b>12.03 (73.2)</b>
Sugarcane	-	5.49 (15.7)	2.02 (12.3)
Cotton	-	3.04 (8.7)	1.12 (6.8)
Fodder	0.40 (7.1)	1.25 (3.6)	0.71 (4.3)
Paddy	0.36 (6.4)	-	0.23 (1.4)
Wheat	0.25 (4.4)	-	0.16 (1.0)
Groundnut	0.25 (4.4)	-	0.16 (1.0)
<b>Other crop GCA and % in total GCA</b>	<b>1.26 (22.4)</b>	<b>9.78 (28.0)</b>	<b>4.40 (26.8)</b>
GCA	5.63	34.94	16.43
Net cultivated area	3.08	20.21	9.39
Cropping intensity	183	173	175

Note: Figures in brackets are % share of each crop in GCA.

of contact farmers compared with only 6.4% and 20.4% in case of contract farmers. But, the number of vegetables grown was higher on contract farms than that on contact farms. The contract farmers were also growers of traditional high value crops as they put 16% and 8% of GCA under cotton and sugarcane respectively in comparison to 6.4%, 4.4% and 4.4% under

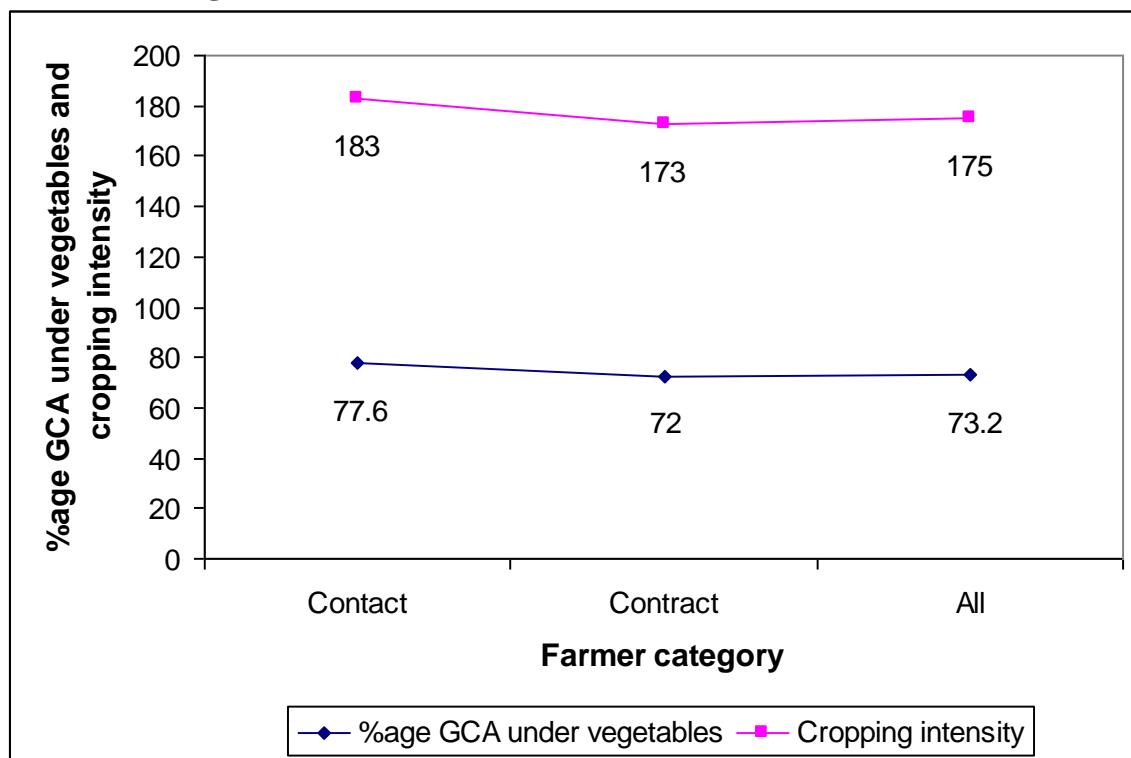
paddy, wheat and groundnut crops respectively. Thus, contract farmers were not only more diversified in growing vegetables but also in terms of number of crops grown than the contact farmers. The cropping intensity was higher on contact farms (183) than that on the contract farms (173) (table 4.24 and fig. 4.8).

#### **4.32.2 Belgaum Cauliflower production and procurement**

Cauliflower is a three month crop which can be planted throughout the year. Harvesting in cauliflower starts two months after transplanting and continues for one month till fully harvested. Generally, farmers took 2-3 crops of cauliflower in a year. The total cost of production was higher for contract farmers (Rs. 24320/acre) than that for contact farmers (Rs. 23385.6/acre). Of the total cost of production for contact farmers, major costs of production were hired labour (18.7%), seeds (16.5%), fertilizers (15.6%), pesticides (13.7%) and land rent (13.2%). The major production costs for the contract farmers were: hired labor (26.4%), fertilizers (14.8%), land rent (14.8%), pesticides (14.3%) and seeds (13.5%). Thus, in cauliflower, family labor use as farm workers was more and hired labour usage was lower in case of contact farmers than that in case of the contract farmers (table 4.12).

Cauliflower sold to consolidator and *mandi* was brought both loose and in gunny bags. About 18 flowers were packed in one gunny bag. Generally Rs. 10-12 were charged for transporting 1.5 dozen cauliflowers from field to market. When bought loose, transport cost varied between Rs.600 to Rs. 1000/delivery depending upon the quantity brought. The transaction costs for both contact and contract farmers were lower while selling to ABRL through the consolidator (Re. 0.88/flower and Re. 0.73/flower respectively) than that while selling in *mandi* (Rs.1.5/flower and Rs. 1.41/flower respectively). Saving of unloading and commission charges were main reasons for lower transaction costs while selling the produce to consolidator. However, transaction costs in each channel were lower in case of contract farmers (Re. 0.73/flower in ABRL and Rs. 1.43/flower) in *mandi*) than that in case of contact farmers (Re. 0.88/flower in ABRL and Rs. 1.5/flower in *mandi*) as the former had higher ownership of tractors, two-wheelers, cars/jeeps than that in case of contact farmers (table 4.13).

**Figure 4.8: Vegetable area and cropping intensity across ABRL Belgaum farmer categories**



The average yield in cauliflower was higher for contact farmers (12142.9 flowers/acre) than that for contract farmers (8800 flowers/acre). As the consolidator had a formal agreement with the contract farmers, he procured all the produce of the farmers at pre-agreed price except for the poor quality produce. Thus, he procured about 90% of the produce of the contract farmers and the farmers sold rejected produce (10%) in *mandi*. However, consolidator procured from contact farmers only in the event of short supply of produce. The consolidator, on an average, procured about 29.4% of the produce from the contact farmers.

But, after accounting for an average rejection rate of 15%, the net produce procured from contact farmers came out to be only 25%. The remaining 75% including rejected produce was sold in *mandi*. The consolidator paid a price of Rs. 4.8/flower to contract farmers as compared to only Rs. 3.8/flower given to contact farmers. However, the contact farmers realized a better price of Rs. 3.9/flower in *mandi* than that realized through consolidator (Rs. 3.8/flower). But, for contract farmers, price realization was lower in *mandi* (Rs. 4.4/flower) than that realized through consolidator (Rs. 4.8/flower) from ABRL. The average cost of

production was lower in case of contact farmers (Rs 1.93/flower) than that in case of contract farmers (Rs. 2.76/flower). The marketing costs per flower were higher among the contact farmers (Re. 0.88/flower in ABRL and Rs. 1.52/flower in *mandi*) than that among the contract farmers (Re. 0.73/flower in ABRL and 1.41/flower in *mandi*). The resulting average cost of production and marketing for contact and contract farmers was higher in *mandi* (Rs. 3.45/flower for contact and Rs. 4.18/flower for contract) than that in ABRL channel (Rs. 2.81/flower for contact and Rs. 3.49/flower for contract). The net income was higher for contract farmers in retail chain channel (Rs1.31/flower in ABRL) than that for contact farmers (Re. 0.99/flower) and lower (Re. 0.22/flower) in *mandi* than that among contact farmers (Re. 0.45/flower). But, altogether, contact farmers earned an income of Re. 0.59/flower only as compared to about Rs. 1.2/flower earned by the contract farmers (table 4.15).

#### **4.32.3 Belgaum Tomato production and procurement**

Tomato is a 4-5 month crop which can be grown throughout the year but yields better either in rainy or winter season. The harvesting starts after 80 days of transplanting and continues for 2-3 months. In tomato also, the production cost/acre was higher in case of contract farmers (Rs. 22375.8) compared that in case of contact farmers (Rs. 20894.4). For contact farmers, major costs of production were family labour (23.5%), pesticides (18.3%), and fertilizers (16.2%) while in case of contract farmers, these were: hired labor (27.1%), family labour (17.7%), pesticides (17.5%), fertilizers (12.3%) and land rent (11.7%). Both categories of farmers did not spray any weedicides but practiced weeding operations manually with hired or family labor (table 4.17).

Farmers delivering the produce at CC-cum-DC usually packed about 18-20 kg. tomato per crate. The consolidator provided crates without any cost to farmers. If there was shortage of crates, then farmers used bamboo baskets to pack tomatoes which were returned to farmers. But, commission agents in *mandi* did not return the baskets. The price of each bamboo basket was around Rs. 20 and 50-70 kg. of tomatoes could be packed in one basket. If the demand of tomatoes was high in the market then, sometimes, the consolidator even picked up the produce from the fields of both contract and non-contract farmers. The transaction costs for

both contact and contract farmers were lower while selling to ABRL through the consolidator (Re. 0.4/kg. and Re. 0.24/kg. respectively) than that while selling in *mandi* (Rs.1.06/kg. and Re. 0.9/kg. respectively). However, transaction costs in each channel were lower in case of contract farmers (Re. 0.24/kg. in ABRL and Re. 0.9/kg. in *mandi*) than that in case of contact farmers (Re. 0.4/kg. in ABRL and Rs. 1.06/kg. in *mandi*) (table 4.18).

The average yield in tomato was higher in case of contact farmers (120 qtls/acre) than that in case of contract farmers (96 qtls/acre). In tomato also, because of the formal agreement of consolidator with the contract farmers, he procured all the produce of the farmers at pre-agreed price except for the poor quality produce. Thus, he procured about 87.5% of the produce of the contract farmers and the farmers sold rejected produce (12.5%) in *mandi*. During the short supply of produce in market, he also procured about 30.5% of the produce from contact farmers. But, after accounting for an average rejection rate of 18%, the net produce procured from contact farmers came out to be only 25%. The remaining 75% including the produce rejected by the consolidator was sold in *mandi*. The consolidator paid a price of Rs. 3.75/kg to contract farmers as compared to only Rs. 3.20/kg given to contact farmers.

However, contact farmers realized a better price in *mandi* (Rs. 3.5/kg) than that realized through consolidator (Rs. 3.2/kg). But, for contract farmers, price realization was lower in *mandi* (Rs. 3.55/kg) than that realized through consolidator (Rs. 3.75/kg) from ABRL. Average cost of production was lower in case of contact farmers (Rs 1.74/kg) than that in case of contract farmers (Rs. 2.33/kg). Marketing cost was higher in case of contact farmers (Re. 0.4/kg. and in ABRL and in Rs. 1.06/kg. *mandi*) than that in case of contract farmers (Re. 0.24/kg in ABRL and Re. 0.9/kg in *mandi*). The resulting average cost of production and marketing for contact and contract farmers was higher in *mandi* (Rs.2.80/kg for contact and Rs.3.23/kg for contract) than that in ABRL channel (Rs. 2.14/kg for contact and Rs. 2.57/kg). The net income in ABRL channel was higher among contract farmers (Rs. 1.18/kg) than that among contact farmers (Rs. 1.06/kg). But, contact farmers had higher per kg income of Re. 0.7 in *mandi* channel than that in contract farmers (Re.0.32/kg.). Thus, contact farmers

earned an income of Rs. 1.07/kg only as compared to about Re. 0.79/kg earned by the contract farmers (table 4.19).

#### **4.32.4 Quality specifications and rejections in cauliflower and tomato in Belgaum**

In cauliflower, the consolidator preferred white, disease/insect free heads. The heads that were diseased or insect/pest affected, over matured and exposed to sunlight were rejected. In tomato, red colored, large and medium sized fruits without any sunscald were preferred. In cauliflower, the rejection rate was 10% in contract farmers compared to 12-18% for contact farmers. Similarly, in tomatoes, the rejection rate was 10-15% for contract farmers as compared to that of 15-20% in contact farmers. The rejection rate among contract farmers was lower than that among the contact farmers as the latter did not grade the produce. The rejection rate for farmers reported by consolidator was about 8-10% ranging from 5% in cauliflower to 22% in tomato and even higher in leafy vegetables.

62% farmers preferred to sell the produce to ABRL through consolidator as there was no commission and unloading charges. 55% farmers did so as crates/baskets were provided by the consolidator which reduced their marketing costs. Higher price and no cheating were the other reasons reported by about 48% and 18% farmers respectively for selling the produce to consolidator. About 58% farmers did not face any problem in linking with the consolidator. Rest of the farmers were of the view that consolidator should also provide transportation facilities to pick up the produce from the farm itself.

#### **4.33 NF Farmer Profile**

Only milk producer's co-operatives were present in all these villages and most of the farmers augmented their income (between Rs. 1000 to Rs. 3000) by supplying milk to these co-operatives. Paddy and maize in the irrigated and ragi in the dry conditions were the major non-retail crops of the area. The yield for paddy and maize ranged between 15-20 qt/acre while it was 7-8 qt/acre in ragi. Paddy and ragi were mainly produced for home consumption. High labor and transportation costs were the major production and marketing risks respectively in these non-retail crops. The electricity was free of cost for the last one year since the regime of BJP, but, those farmers who are hiring water were generally paying

25% of the profit from the crop as irrigation charges in Kumblagodu. In M. Gopahalli, water hiring charges were Rs 2000/acre/crop.

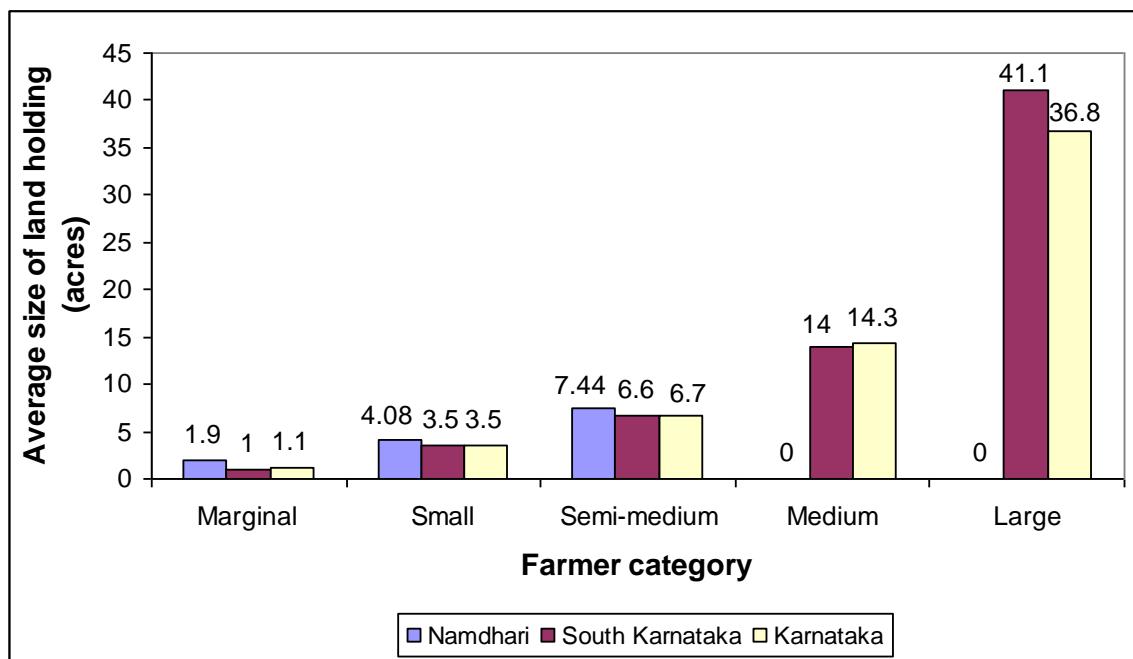
The mode of irrigation was tubewell/well in most of the villages except some canal irrigated area along with tubewell/well in Harrohalli. The non-retail crops were generally sold in K.R. market in Bangalore where a commission of 10% of the gross value was charged. The spoilage/weight loss of 1-2% incurred while taking the produce to the market. Farmers had also to bear the costs of purchasing the gunny bags (Rs.20/bag), transportation costs (Rs 15-20/bag), loading (Rs 2/bag) and unloading (Rs 2/bag) charges at the K.R. market.

About 45% of farmers were associated with NF for less than one year, 40% for 1-2 years, and few (15%) supplied for more than two years. Of the total NF farmers interviewed, more than 60% were small, about 1/4<sup>th</sup> semi-medium, and only 15% marginal as compared to 1/3<sup>rd</sup> marginal, about 68% small and rest 17% semi-medium in case of non-NF farmers (table 4.25). Due to leasing activity, averaged owned holdings of marginal, small and semi-medium farmers increased to 1.9, 4.08 and 7.44 acres respectively. NF did not have any medium and large farmers compared to about 14% medium and 37% large farmers in Karnataka (fig. 4.9).

However, the leasing out practice was altogether absent among all the categories of farmers. The small farmers had highest %age of the leased-in area in operated area (27%) compared to that in case of marginal and semi-medium farmers (9-10.5%). 20% of marginal farmers practiced leasing-in activity which increased with increase in size of the holdings as evident from 40% of small and 50% of semi-medium farmers who had leasing-in practice. All the operated area was cultivated in case of marginal farmers and it started to decline with increase in size of holding. Thus, %age of cultivated area in operated area was 95.8% in case of small, and 89.1% in case of semi-medium farmers. Thus, the average owned and operated holding in all NF farmers was 3.70 and 4.56 acres respectively which were higher than the respective figures of 3.36 acres and 3.65 acres in case of Non-NF farmers. The NF farmers also had a higher %age of the leased-in area in operated area (19%) compared to that in case of Non-NF farmers (8%). Moreover, about 40% of NF farmers were found to practice the leasing-in activity as against only 14% in case of Non-NF farmers. However, the %age of

cultivated area in operated area was almost similar across both NF and Non-NF farmers (table 4.25).

**Figure 4.9: Category wise land holdings of NF, non-NF and all farmers in Karnataka**



**Table 4.25: Farmer category-wise distribution of NF and Non-NF farmers**

Land holding details (in acres)> Farmers' Category	No. of farmers	Land owned	Leased-in land*	Operated land	%age of leased-in area in operated land	Net cultivated area
NF	Marginal	5 (15.2) #	1.70	0.20 (20)	1.90	10.5
	Small	20 (60.6)	2.98	1.10 (40)	4.08	27.0
	Semi-Medium	8 (24.2)	6.75	0.69 (50)	7.44	9.3
	All	33 (100)	3.70	0.86 (39.4)	4.56	18.9
Non- NF	14 (100)	3.36	0.29 (14.3)	3.65	7.9	3.36 (92.1)

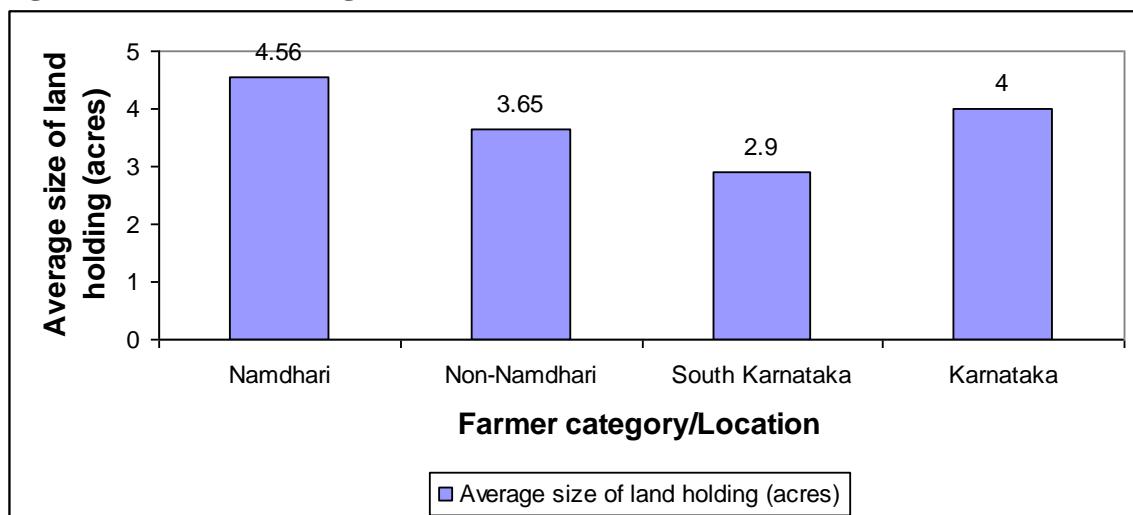
Note: #Figures in brackets are % share in all farmers.

\*Figures in brackets indicate the %age of leased-in farmers in each category.

Among all these farmers who supplied to NF, only 15% were marginal, 61% small, and 24% semi-medium as against 48.2% marginal, 26.6% small, 16.9% semi-medium and 7.3% medium in Karnataka and 62.1%, 22.3%, 11%, respectively in South Karnataka. Thus, NF

had a much lower proportion of marginal farmers (15% only) compared with the proportion of marginal farmers in Karnataka (48.2%), and South Karnataka (62%). But, the proportion of small farmers was higher in NF farmers (61%) compared to that in South Karnataka and Karnataka (between 22-27%). The average operated area of retail chain farmers (4.56 acres) was slightly higher than the average size of the operational holding (4 acres) in Karnataka, and South Karnataka (2.9 acres each) (fig. 4.10 and table 4.26).

**Figure 4.10: Land holdings of NF, Non-NF, and all farmers in Karnataka**



**Table 4.26: Distribution of holdings by category and average land holding in Karnataka in 2005-06**

Farmer category>	Marginal	Small	Semi-medium	Medium	Large	All
South Karnataka	1.0 (62.1) #	3.5 (22.3)	6.6 (11.0)	14.0 (4.0)	41.4 (0.6)	2.9 (100.0)
Karnataka	1.1 (48.2)	3.5 (26.6)	6.7 (16.9)	14.3 (7.3)	36.8 (1.0)	4 (100.0)

Note: Figures in parentheses are % share of each category in total holdings.

Source: [indiatstat.com](http://indiatstat.com), downloaded on 25<sup>th</sup> September, 2009.

Among all the NF farmers interviewed, 54.5% were baby corn and 45.5% *bhindi* growers. The number of small farmers studied in each crop constituted more than 50% of all the farmers. The *bhindi* growers had higher proportion of marginal (20%) and lower proportion of semi-medium farmers (13.3%) in comparison to respective figures of 10% and 33.3% in case of baby corn growers. The *bhindi* growers had lower average owned (2.83 acres) and operated area (3.96 acres) than that in case of baby corn growers (4.42 and 5.06 acres

respectively). Among the *bhindi* farmers, leasing in practice was only present in case of small farmers as they had about 43% leased-in area in operated land; the overall average for all farmers being 28.5%. All baby corn growers practised leasing in practice. The marginal baby corn growers had about 22% leased-in area in the operated land compared to about 12% each in case of small and medium baby corn growers; the overall average for all baby corn growers being about 13%. Thus, *bhindi* growers had more than double leased-in area in the operated land compared to that in case of baby corn growers. Both the cultivators had similar %age of cultivated area in operated land (93-96%) and it declined with the increase of size of holdings across both grower categories (table 4.27).

**Table 4.27: Farmer category and crop-wise land holdings of NF farmers (in acres)**

Land holding details> Crop-wise farmer category		No. of farmers	Land owned	Leased -in land	Operated land	%age of leased- in area in operated land	Net cultivated area**
<i>Bhindi</i>	Marginal	3 (20)#	1.67	-	1.67	-	1.67 (100)
	Small	10 (66.7)	2.25	1.70	3.95	43.0	3.9 (98.7)
	Medium	2 (13.3)	7.50	-	7.50	-	6.5 (86.7)
	All	15 (100) (45.5)*	2.83	1.13	3.96	28.5	3.8 (96.0)
Baby corn	Marginal	2 (11.1)	1.75	0.50	2.25	22.2	2.25 (100)
	Small	10 (55.5)	3.70	0.5	4.20	11.9	4.0 (95.2)
	Medium	6 (33.3)	6.50	0.92	7.42	12.4	6.67 (89.9)
	All	18 (100) (54.5)*	4.42	0.64	5.06	12.6	4.69 (92.7)
All		33 (100)*	3.70	0.86	4.56	18.9	4.26 (93.4)

Note: # Figures in brackets are % share of category in total number of crop farmers.

\*%ages of total number of farmers, \*\*figures in brackets indicate %age of net cultivated area in operated area.

Among NF farmers, marginal farmers had 100% of operated area irrigated in comparison with about 73-74% among small and semi-medium farmers; rest being rainfed. Thus, %age of irrigated area in operated area declined with the increase in size of the land holding. Both marginal and small farmers had about 3/4<sup>th</sup> of irrigated area as tubewell and rest 1/4<sup>th</sup> area as canal irrigated in comparison to about 62% of irrigated area as tubewell irrigated and 38% area as canal irrigated in case of semi-medium farmers. *Bhindi* growers had slightly higher %age of operated land as

irrigated (78%) in comparison to about 74% in case of baby corn growers. *Bhindi* growers did not have any canal irrigated area while in case of baby corn growers about 50% area each was canal and tubewell irrigated. The marginal farmers did not have any area under drip irrigation. On the other hand, 15% of small farmers had about 14% of area under drip as compared to 1/4<sup>th</sup> of semi-medium farmers who on an average put about 26.5% of the irrigated area under drip irrigation system. Across both crop categories, on an average, 1/3<sup>rd</sup> of *bhindi* growers put about 43% area under drip compared to none by the baby corn growers. Thus, all NF farmers had about higher %age of operated land as irrigated (75%) than that in case of Non-NF farmers (55%). The tubewell and canal irrigated area was 71% and 29% in case of NF farmers compared with 64% and 36% in case of Non-NF farmers. Moreover, about 15% of NF farmers had about 17.5% area under drip irrigation as compared to none in case of Non-NF farmers. Thus, it revealed that NF worked with the only those farmers who had assured irrigation supply and more area under tubewell and drip irrigation (table 4.28).

**Table 4.28: Category-wise distribution of farmers by irrigation profile of NF farmers (average area in acres)**

Irrigation sources Farmer category/crop	Source-wise irrigated area		Irrigated area*	Drip-irrigated area**	%age drip-irrigated to total irrigated area
	Canal	Tubewell			
<b>NF</b>					
Marginal	0.5 (26.3) #	1.40 (73.7)	1.90 (100)	-	-
Small	0.68 (22.5)	2.34 (77.5)	3.02 (74.0)	0.41 (15.0)	13.6
Semi-medium	2.06 (37.9)	3.38 (62.1)	5.44 (73.1)	1.44 (25.0)	26.5
<i>Bhindi</i>	-	3.08 (100)	3.08 (77.8)	1.32 (33.3)	42.8
Baby corn	1.81 (48.7)	1.91 (51.3)	3.72 (73.5)	-	-
All	0.98 (28.6)	2.45 (71.4)	3.43 (75.2)	0.60 (15.1)	17.5
<b>Non-NF †</b>	0.71 (35.5)	1.29 (64.5)	2.00 (54.8)	-	-

Note: # indicate category share in source wise irrigated area.

\* Figures in brackets indicate the %age of irrigated area in operated area;

†only well-irrigated;

\*\* Figures in brackets indicate the %age of farmers in each category to total.

The ownership of farm machinery equipments except tractor and trailer was higher among medium farmers as all of them had electric motor, and sprayer. 75%, 87.5% and 62.5% medium farmers also had plough/cultivator, borewell and diesel engine respectively. In general, the ownership of farm machinery started to decline with decrease in size of holding

although 20% and 10% small farmers surprisingly had tractor and trailer respectively. Thus, among all small farmers, 75% had borewell, 70% had sprayer, 60% each had plough/cultivator and electric motor and 30% had diesel engine in comparison to ownership of 60% each in electric motor and sprayer, 40% each in plough/cultivator and only 20% in diesel engine among marginal farmers. Crop-category wise distribution of farmers revealed that *bhindi* growers were richer in ownership of farm machinery than the baby corn growers. The NF farmers were also richer in ownership of farm machinery when compared with the Non-NF farmers as about 12% and 6% NF farmers had tractors and trailers respectively which were all together absent in case of Non-NF farmers. About 61%, 73%, 70%, 37% and 76% NF farmers had plough/cultivator, borewell, electric motor, diesel engine and sprayer respectively while only 14% Non-NF farmers had plough/cultivator, 29% each had borewell and electric motor and 71% had sprayer. The Non-NF farmers did not have any diesel engine (table 4.29).

**Table 4.29: Farmer category and crop-wise distribution of NF and Non-NF farmers by ownership of farm machinery**

Farm machinery ownership> Farmer Category/crop	Tractor	Trailer	Plough/ cultivator	Borewell	Electric motor	Diesel engine	Sprayer
NF	Marginal	-	-	2 (40.0)	2 (40.0)	3 (60.0)	1 (20.0)
	Small	4 (20.0)	2 (10)	12 (60.0)	15 (75.0)	12 (60.0)	6 (30.0)
	Semi-medium	-	-	6 (75.0)	7 (87.5)	8 (100.0)	5 (62.5)
	<i>Bhindi</i>	3 (20.0)	1 (6.7)	12 (80.4)	11 (73.3)	13 (86.7)	8 (53.3)
	Baby corn	1 (5.6)	1 (5.6)	8 (44.4)	13 (72.2)	10 (55.7)	4 (22.2)
	All	4 (12.1)	2 (6.1)	20 (60.6)	24 (72.7)	23 (69.7)	12 (36.7)
Non-NF	-	-	2 (14.3)	4 (28.6)	4 (28.6)	-	10 (71.4)

Note: Figures in brackets/parenthesis indicate the %age of each category in total farmers.

The marginal farmers had a comparatively smaller family size (5) than that of the small (6.1) and semi-medium farmers (6.4). The %age of farm family workers in family was also lowest among marginal farmers (52) followed by small (64), semi-medium farmers (66). Thus, average family size and %age of farm family workers in family increased with increase in size of land holdings of NF farmers. The *bhindi* growers had a slightly lower family size (5.6) than that of baby corn growers (6.3) but %age of farm family workers in family was similar across

both the growers (63). The NF farmers had a lower family size (6.0) than the Non-NF farmers (6.6), but the former had a higher %age of farm family workers (63%) than that in case of Non-NF farmers (56%) (table 4.30).

**Table 4.30: Category-and crop-wise average family size and structure of NF and Non-NF farmers**

Family details> Farmer category/crop		Family members				Farm family workers						
		Adult		Children		Family size	Adult		Children		%age of farm workers in family	
		Male	Female	Male	Female		Male	Female	Male	Female		
<b>NF</b>	Marginal	1.6	1.2	1.6	0.6	5.0	1.2	1.2	0.2	-	2.6	52.0
	Small	1.7	1.9	1.4	1.1	6.1	1.6	1.7	0.5	0.1	3.9	63.9
	Semi-Medium	2.1	2.0	0.8	1.5	6.4	1.8	1.9	0.5	-	4.2	65.6
	<i>Bhindi</i>	1.6	1.7	1.3	1.0	5.6	1.5	1.7	0.5	0.1	3.6	63.1
	Baby Corn	1.9	1.9	1.2	1.3	6.3	1.7	1.7	0.6	-	4.0	63.5
	All	1.8	1.8	1.3	1.1	6.0	1.6	1.6	0.5	0.1	3.8	63.3
<b>Non-Namdhari</b>		2.4	2.3	1.3	0.6	6.6	1.6	2	0.1	-	3.7	56.1

Illiteracy was highest among the marginal head households (hhs) as about 20% of them were illiterate as compared to 15% in case of small farmers and none in case of semi-medium farmers. However, the marginal farmers surprisingly did not have hhs who studied up to 5<sup>th</sup> standard compared to about 10-12% in case of small and semi-medium farmers. The 6<sup>th</sup> to 9<sup>th</sup> standard studied hhs were higher in case of marginal farmers (40%) followed by semi-medium (37.5%) and small farmers (30%). 50% of semi-medium hhs were SSC degree holders compared to 40% in case of both marginal and small farmers. Although, illiteracy ranged between 11-13% in both *bhindi* and baby corn growers but *bhindi* growers were slightly better in literacy compared with baby corn growers as 53.3% heads of *bhindi* growers were SSC degree holders and 7% also had HSC degree compared to about 39% and 33% of heads of baby corn growers who studied only between 6<sup>th</sup> to 9<sup>th</sup> and SSC degree holders respectively. Among NF farmers, only 12% hhs were illiterate, 42% hhs had SSC degree and 33% hhs studied between 6<sup>th</sup> to 9<sup>th</sup> standard compared to about 29% heads each being illiterate and HSC degree holders in case of Non-NF farmers (table 4.31).

**Table 4.31: Farmer category and crop-wise distribution of farmers by literacy level**

Literacy level> Farmer category/crop	Illiterate	Up to 5 <sup>th</sup> standard	6 <sup>th</sup> to 9 <sup>th</sup>	SSC	HSC
NF	Marginal	1 (20.0)	-	2 (40.0)	2 (40.0)
	Small	3 (15.0)	2 (10.0)	6 (30.0)	8 (40.0)
	Semi-medium	-	1 (12.5)	3 (37.5)	4 (50.0)
	<i>Bhindi</i>	2 (13.3)	1 (6.7)	4 (26.7)	8 (53.3)
	Baby corn	2 (11.1)	2 (11.1)	7 (38.9)	6 (33.3)
	All	4 (12.1)	3 (9.1)	11 (33.3)	14 (42.4)
<b>Non-NF</b>	<b>4 (28.6)</b>	<b>2 (14.3)</b>	<b>2 (14.3)</b>	<b>2 (14.3)</b>	<b>4 (28.6)</b>

Note: Figures in brackets are % share in total.

The semi-medium farmers did not have any off farm income source while about 40% marginal and 15% small farmers had off farm income. Thus, off-farm income decreased with the increase in size of the holdings. The marginal farmers also had higher average number of adults/acre of land with off farm income (0.21) and average number of adults/family with off-farm income (0.40) and higher off farm income/month/person (Rs.1100) compared to respective figures of 0.05, 0.20 and Rs. 490 in case of small farmers. *Bhindi* growers had higher %age of hhs with off-farm income, higher number of adults/acre of land and higher number of adults/family with off-farm income than that among the baby corn growers. Thus, only 15% NF farmers had off farm income in comparison to the 57% in case of Non-NF farmers. The Non-NF farmers also had higher average number of adults/acre of land with off farm income (0.16), number of adults/family with off farm income (0.57) and average off farm income/person/month (Rs. 743) than the respective figures of 0.04, 0.18, Rs. 464 in case of NF farmers (table 4.32).

Marginal farmers had higher %age of GCA under contract vegetables (87.4%) followed by small (75%) and, semi-medium farmers (74%). The marginal farmers also had highest %age of GCA under *bhindi* (38%) as compared to that in case of small (16%) and semi-medium farmers (9%) (fig. 4.11). Thus, %age of GCA under *bhindi* decreased with increase in size of operated holdings. The %age of GCA under baby corn was similar in case of both semi-medium and small farmers (49%-50%) and 44% in case of marginal farmers. The semi-medium farmers also put higher %age of GCA under other vegetables (14%) grown compared to that grown by small (10%) and marginal farmers (6%). Thus, NF farmers put 75% of GCA under vegetables as compared to only 58% in case of Non-NF farmers as NF

farmers put about 49% of GCA under baby corn, 15% under *bhindi* and 11% under other vegetables as compared to respective figures of only 41%, 10% and 7% in case of non-NF farmers.

**Table 4.32: Category and crop-wise distribution of farmers by off-farm income**

Off-farm income> Farmer category/crop	% of hhs having off-farm income	No. of adults/acre of land with off-farm income	No. of adults/family with off-farm income	Off-farm income (Rs. /month/ Person)
NF	Marginal	40.0	0.21	1100.0(2750.0)
	Small	15.0	0.05	490.0 (3266.7)
	<i>Bhindi</i>	20.0	0.07	486.7 (2433.3)
	Baby corn	11.1	0.02	444.4 (4000.0)
	All	15.1	0.04	463.6 (3060.0)
<b>Non-NF</b>	57.0	0.16	0.57	742.8 (1300.0)

Note: Figures in brackets are average off-farm income of only those who had off-farm income.

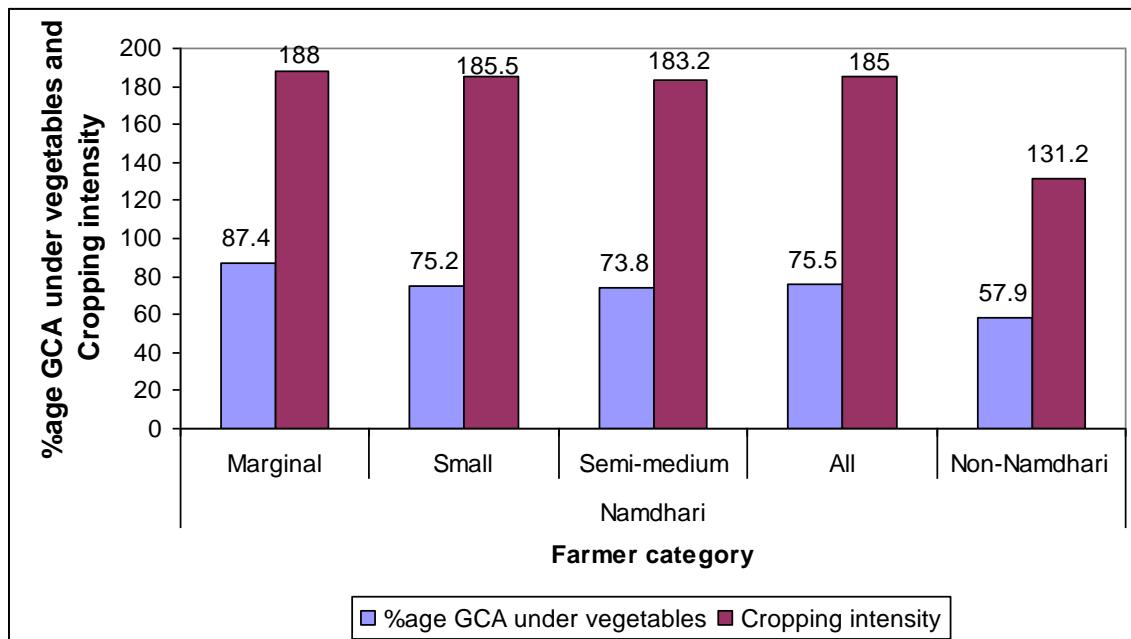
The %age of GCA under traditional crops was higher in case of semi-medium farmers (26.2%) compared to slightly lower in case of small farmers (24.8%) and only 12.6% in case of marginal farmers as the semi-medium farmers put about 13.4% of GCA under paddy compared to only 4-5% in case of marginal and small farmers. Among the traditional crops, small farmers had higher %age of GCA under fodder (12%) than that in case of semi-medium (7%) and marginal farmers (6%). Farmers also put about 3-4% of GCA under ragi and 2-3% of GCA under annual/perennial crops although marginal did not grow any annual/perennial crops. Thus, NF farmers had only 24.5% of GCA under traditional crops compared to 42% in case of non-NF farmers. The non-NF farmers put about 23% of GCA under fodder and 16% of GCA under paddy compared to only 10% and 8% in case of NF farmers. The non-NF farmers did not put any area under annual/perennial crops. The cropping intensity was higher slightly higher among marginal farmers (188) while in case of small and semi-medium farmers, it ranged between 183-185; the overall average for all NF farmers being 185. Thus, the cropping intensity on NF farms was much higher than that on non-NF farms which revealed that NF farmers were intensive cultivators of vegetables (table 4.33).

**Table 4.33: Category-wise cropping pattern of NF and Non-NF farmers**

Farmer category> Crop-wise GCA (in acres)	NF				Non-NF
	Marginal	Small	Semi-medium	All	
<b>Contract crops</b>					
Bhindi	1.35 (37.8)	1.20 (16.5)	1.11 (9.1)	1.20 (15.2)	0.40 (9.7)
Baby corn	1.57 (44.0)	3.55 (49.0)	6.11 (50.3)	3.87 (49.1)	1.70 (41.2)
Other vegetables*	0.20 (5.6)	0.70 (9.7)	1.76 (14.4)	0.88 (11.2)	0.29 (7.0)
<b>Veg. crop GCA and % to total GCA</b>	<b>3.12 (87.4)</b>	<b>5.45 (75.2)</b>	<b>8.98 (73.8)</b>	<b>5.95 (75.5)</b>	<b>2.40(57.9)</b>
Paddy	0.15 (4.2)	0.35 (4.8)	1.63 (13.4)	0.63 (8.0)	0.65(15.6)
Fodder	0.20 (5.6)	0.90 (12.4)	0.84 (6.9)	0.78 (9.9)	0.96(23.2)
Ragi	0.10 (2.8)	0.30 (4.1)	0.43 (3.5)	0.30 (3.8)	0.14 (3.3)
Annual/perennial crops	-	0.25 (3.4)	0.28 (2.3)	0.22 (2.8)	-
<b>Non-veg. GCA and % in total GCA</b>	<b>0.45 (12.6)</b>	<b>1.80 (24.8)</b>	<b>3.18 (26.2)</b>	<b>1.83 (24.5)</b>	<b>1.74(42.1)</b>
Overall GCA	3.57	7.25	12.15	7.88	4.14
Net cultivated area	1.90	3.91	6.63	4.26	3.36
Cropping intensity	188	185.5	183.2	185.0	131.2

Note: Figures in brackets are % share of each crop in GCA. \* Other vegetables include chilli, tomato, brinjal, cucumber, cluster bean, sweet corn, zucchini and avare etc.

**Figure 4.11: Category wise average GCA and cropping intensity of NF and non-NF farmers**



#### **4.33.2 NF *Bhindi* production and procurement**

*Bhindi* is a 3 month vegetable crop which can be harvested after 45 days of sowing; thereafter, it is harvested on alternate days till 90 days (Photo 4.7). NF farmers used 2 kg of seed per acre priced at Rs 150/kg. One acre produced about 120 crates of *bhindi*.



**Photo 4.7: A NF contract *bhindi* farm**

The land rent for irrigated land was around Rs. 6000/acre/year while for un-irrigated land, it was around Rs. 4000/acre/year. The land preparation was mainly done with the bullock operated traditional ploughs. The electricity for irrigation was free in Karnataka for farmers who owned tubewell below 5 HP. Thus, irrigation charges for only those farmers were taken into account who hired water either through tubewell/canal or having tubewell with more than 5 HP. The farmers had to pay 1/4<sup>th</sup> of the net profit from the crop as the irrigation expense to the owner.

The average production cost was higher in case of NF farmers (Rs. 21347.9/acre) than that in case of Non-NF farmers (Rs. 17216.6/acre). Of the production cost, more than 1/3<sup>rd</sup> of the cost was accounted by family labour in case of NF farmers compared to less than 1/4<sup>th</sup> of the production cost in case of Non-NF farmers. Irrigation cost was higher for Non-NF farmers than that for NF farmers as former were poor in irrigation sources. The proportion of production cost of NF farmers was higher for family labour (35%), land rent (9%), weedicide (6%), and pesticide (8%) than that in case of Non-NF farmers (i.e. 23%, 9%, 3% and 6% respectively). Although, proportion of fertilizer use was lower on NF farms (5.7%) than that on NF farms (6.1%) but in absolute terms, fertilizer spray was higher on NF farms (Rs. 1214/acre) than that on NF farms (Rs. 1058/acre) (table 4.34).

**Table 4.34: Average production cost in *bhindi* among NF and Non-NF farmers**

<b>Farmer category&gt; Cost components (Rs./acre)</b>	<b>NF</b>	<b>Non-NF</b>
Land rent	2028.9 (9.5)	1250.0 (7.3)
Land preparation	893.3 (4.2)	1233.3 (7.2)
Seed	410.0 (1.9)	758.3 (4.4)
FYM	640.0 (3.0)	900.0 (5.2)
Fertilizer	1213.7 (5.7)	1058.3 (6.1)
Pesticide	1649.3 (7.7)	1025.0 (6.0)
Weedicide	1246.7 (5.8)	466.7 (2.7)
Irrigation	850.0 (4.0)	1800.0 (10.5)
Labour	4966.4 (23.3)	4677.0 (27.2)
Hired		
Family	7449.6 (34.9)	4048.0 (23.5)
Cost of production	21347.9 (100.0)	17216.6 (100.0)

Note: Figures in brackets are % share in average cost of production.

NF farmers did not incur any marketing costs in *bhindi* as NF picked the produce from the farm itself. Moreover, NF also provided crates free of cost to farmers to pack *bhindi*. Generally, 10-15 kg. of *bhindi* was packed in one crate and, on an average, NF picked five crates from a farmer/day. On the other hand, Non-NF farmers spent Rs. 6000/acre to market the produce in K.R. market; of which commission charges accounted for 55%, loading and unloading charges 20%, transportation costs 17.5% and gunny bag cost 7.5% (table 4.35). About 35-45 kg. of *bhindi* was packed in one gunny bag. Thus, production cost in *bhindi* was lower in case of non-NF farmers (Rs. 17216.6/acre) than that in case of NF farmers (Rs. 21347.9/acre), but due to higher marketing cost of non-NF farmers (Rs. 6000/acre), average cost of production and marketing turned out to be higher among non-NF farmers (Rs. 23216.6/acre) than that among NF farmers (Rs. 21347.9/acre) as the latter did not incur any expense on marketing the produce. Of the average cost of production and marketing in non-NF farmers, about 3/4<sup>th</sup> was production cost and rest 1/4<sup>th</sup> being the marketing cost. The average cost of production and marketing was lower by Rs. 1868.7/acre (8.7%) in case of NF farmers than that in case of non-NF farmers (table 4.36).

**Table 4.35: Average marketing costs of Non-NF farmers in *bhindi***

<b>Marketing cost components</b>	<b>Per kg.</b>	<b>Total</b>
Gunny bags	0.15	450 (7.5)
Transportation	0.35	1050 (17.5)
Loading and unloading charges	0.40	1200 (20.0)
Commission @10%	1.10	3300 (55.0)
Marketing cost	2.00	6000 (100.0)

Note: Figures in brackets are % share in total cost.

**Table 4.36: Average production and marketing cost in *bhindi* of NF and Non-NF farmers**

<b>Farmer category&gt; Cost components</b>	<b>NF</b>	<b>Non-NF</b>
Production cost	21347.9 (100)	17216.6 (74.2)
Marketing cost	-	6000.0 (25.8)
Production and marketing cost	21347.9 (100)	23216.6 (100.0)
Difference in production and marketing costs Among non-NF farmers over NF farmers		1868.7 (8.7)

Note: Figures in brackets are % share in total cost

The NF farmers had a higher average yield (32 qtls./acre) in *bhindi* than that in case of non-NF farmers (30 qtls/acre). As the NF farmers had a contractual agreement with it, they sold all of their produce to it while non-NF sold it in *mandi*. The NF farmers harvested *bhindi* according to the maturity of crop and practised grading as suggested by NF field supervisors as against non-NF farmers who sold the produce without doing any grading in KR market in Bangalore. Thus, NF farmers, on an average, sold about 65% of A grade *bhindi*, 25% of B grade and rest 10% of C grade *bhindi* to NF. Although, NF was committed to procure only A and B grades, but during the shortage of produce in the market, NF sometimes also procured C grade produce. The respective prices for A, B and C grade fetched by the NF farmers were Rs. 11/kg, Rs. 7/kg and Rs. 5/kg as against a single price of Rs. 10/kg in *mandi*. The cost of production and marketing were lower in case of NF farmers (Rs. 6.67/kg) than that in case of non-NF farmers (Rs. 7.74/kg). The resulting net income was also higher in case of NF farmers (Rs. 3.02/kg) than that in case of non-NF farmers (Rs. 2.26/kg) (table 4.37).

**Table 4.37: Average costs and returns in *bhindi* in NF and Non-NF farmers**

<b>Farmer category&gt; Costs and returns (Rs./acre)</b>	<b>NF</b>			<b>Non-NF</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>No grading</b>
<b>Grades</b>				
%age of each grade sold	65	25	10	100
Quantity sold (Kg./acre)	2145	825	330	3000
Price (Rs./kg)	11	7	5	10
Gross income (Rs.)	23595	5775	1650	30000.0
	31020.0 (9.69)			
Cost of production	21347.9 (6.67)			17216.6 (5.74)
Cost of marketing	-			6000.0 (2.00)
Cost of production and marketing (Rs.)	21347.9 (6.67)			23216.6 (7.74)
Net income (Rs.)	9672.1 (3.02)			6783.4 (2.26)
Difference in net income in NF channel over non-NF channel	2888.7 (42.6%)			

Note: Figures in brackets are per kg.

Only 2.4% of the *bhindi* was used for home consumption and labour purpose; the rest 97.4% was sold to the NF. The rejection rate in *bhindi* was 2%. Small size, insect damaged and curled *bhindi* was rejected. Sometimes, NF also rejected more due to overproduction or low price in the market. The rejected produce was sold in the local markets at a very low price of Rs. 1-3/kg. If it was of too poor quality, then it was used as fodder. Rarely, when there was short supply, it also procured C grade produce.

#### **4.33.3 NF baby corn production and procurement**

Baby corn, a new vegetable crop, can be grown throughout the year in Karnataka and at least three crops can be taken in a year. Baby corn is the tender de-husked young ear of the female inflorescence of maize plant, which is harvested before fertilization. The entire baby corn crop was sold to NF and the rest of the crop was used as fodder for the livestock. Baby corn was grown thickly (seed rate 8 kg/acre) at row to row distance of one foot and plant to plant distance of 4 inch as compared to normal maize grown at row to row distance of 2 feet and plant to plant distance of one foot at a seed rate of 6 kg/acre (Photo 4.8). Pesticides and weedicides were not sprayed in baby corn. Generally, one bag each of DAP and Potash/acre was used along with 200 kg of Urea. Baby corn was ready for harvesting when yellow hair of the cob falls 4 cm from the tip of the cob.



**Photo 4.8: A NF baby corn farmer harvesting baby corn for delivery to NF**

Most of the farmers harvested the crop with family labor as labor costs are very high due to the close proximity of the villages to Bangalore. Harvesting was done according to the instructions given by NF. 80-90 gunny/*nano* bags of 50 kg each could be harvested from one acre of baby corn. The baby corn was packed in nano bags each with 35-45 kg of the baby corn. The harvesting starts after 65 days and generally 8-10 pickings can be taken in a single crop. The average production cost in baby corn was also higher in case of NF farmers (Rs.13728.3/acre) than that in case of non-NF farmers (Rs. 11724.5/acre). Of the average production cost across both, more than 30% of the production cost was accounted by family labour only. However, non-NF farmers used more hired labour (19%) for farm operations compared to that by NF farmers (16%). Among the average production cost, the proportion of other major costs was higher in case of NF farmers: land rent (13.5%), seed (5.8%), FYM (6.6%) and irrigation (6.9%) than that in case of Non-NF farmers (i.e. 11%, 5.4%, 5.3% and 5.6% respectively). Although, proportion of fertilizer use was lower on NF farms (12.1%) than that on non-NF farms (12.9%) but in absolute terms, fertilizer spray was higher on NF farms (Rs. 1667/acre) than that on non-NF farms (Rs. 1509/acre) (table 4.38).

NF farmers incurred very low marketing costs in baby corn (Re. 0.25/kg) compared to that in case of non-NF farmers (Rs.1.78/kg).The NF farmers packed 35-40 kg of baby corn in one *nano* bag. The non-NF farmers also had to pay for commission, loading and unloading, transportation and gunny bag costs in *mandi* which accounted for 43.8%, 22.5%, 19.7% and gunny bag (8.4%) costs of average marketing costs (table 4.39).

**Table 4.38: Average production costs in baby corn in NF and Non-NF farmers**

<b>Farmer category&gt; Cost components (Rs./acre)</b>	<b>NF</b>	<b>Non-NF</b>
Land rent	1850.0 (13.5)	1283.3 (10.9)
Land preparation	1133.3 (8.3)	1143.1 (9.7)
Seed	800.0 (5.8)	633.3 (5.4)
FYM	900.0 (6.6)	622.2 (5.3)
Fertilizer	1666.7 (12.1)	1508.9 (12.9)
Irrigation	950.0 (6.9)	655.5 (5.6)
Labour	Hired Family	2193.3 (16.0) 4235.0 (30.8)
Cost of production	13728.3 (100.0)	11724.5 (100.0)

Note: Figures in bracket are % share in average cost of production.

Farmers did not spray any pesticide and weedicide in baby corn.

**Table 4.39: Average marketing costs in baby corn in NF and Non-NF farmers**

<b>Marketing costs</b>	<b>(Rs/kg)</b>	<b>(Rs.)</b>
<b>Non-NF farmers</b>		
Cost of polythene	0.10 (5.6)	320
Cost of gunny bags	0.15 (8.4)	480
Transportation cost	0.35 (19.7)	1120
Loading and unloading charge	0.40 (22.5)	1280
Commission @10%	0.78 (43.8)	2496
Marketing cost	1.78 (100.0)	5696
<b>NF farmers</b>		
Cost of <i>nano</i> bags	0.25	975

Note: Figures in brackets are % share in average cost.

Thus, although, production cost in baby corn was lower in case of non-NF farmers (Rs. 11724.5/acre) than that in case of NF farmers (Rs.13728.3 /acre), but after taking into account the marketing cost of NF farmers (Rs. 975/acre) and non-NF farmers (Rs. 5518/acre) across each, the average cost of production and marketing turned out to be higher among non-NF farmers (Rs. 17242.5/acre) than that among NF farmers (Rs. 14703.3/acre). Thus, difference in production and marketing costs among non-NF farmers over NF farmers was Rs. 2717.2 (18.5%). Of the average cost of production and marketing, production costs accounted for 93% and marketing cost only 7% in case of NF farmers compared to lower

production cost of 67.3% and higher marketing cost of 32.7% in case of non-NF farmers (table 4.40).

**Table 4.40: Average production and marketing cost in baby corn in NF and Non -NF farmers**

<b>Farmer category&gt; Cost components (Rs./acre)</b>	<b>NF</b>	<b>Non-NF</b>
Production cost	13728.3 (93.4)	11724.5 (67.3)
Marketing cost	975.0 (6.6)	5696.0 (32.7)
Production and marketing cost	14703.3 (100.0)	17420.5 (100.0)
Difference in production and marketing costs among non-NF farmers over NF farmers		2717.2 (18.5%)

Note: Figures in brackets are % share in total cost.

The NF farmers had a higher average yield (39 qtls./acre) in baby corn than that in case of non-NF farmers (32 qtls/acre). As the NF farmers had a contractual agreement with it, they sold all of their produce to NF while non-NF sold it in KR market Bangalore. The baby corn was also harvested according the maturity of crop and practiced grading as suggested by NF field supervisors as against non-NF farmers who sold the produce without doing any grading in *mandi*. Thus, NF farmers, on an average, sold about 60% of A grade baby corn, 25% of B grade and rest 15% of C grade baby corn to NF. Although, it was committed to procure only A and B grades, but sometimes, NF also procured C grade produce in situations of shortage of produce in the market. The respective prices for A, B and C grade realized by the NF farmers were Rs. 8/kg, Rs. 5/kg and Rs. 3/kg as against a single price of Rs. 7.8/kg in *mandi*. Thus, the average price in case of NF farmers was turned to be Rs. 6.5/kg which was lower the *mandi* price (Rs. 7.8/kg). However, the cost of production and marketing were lower in case of NF farmers (Rs. 3.8/kg) than that in case of non-NF farmers (Rs. 5.4/kg). Thus, the resulting net income was also higher in case of NF farmers (Rs. 2.73/kg) than that in case of non-NF farmers (Rs. 2.4/kg). Thus, NF farmers had a higher income of Rs. 3107.2/acre (41%) over non-NF farmers (table 4.41).

**Table 4.41: Costs and returns in baby corn in NF and Non-NF farmers**

<b>Farmer category&gt; Average costs and returns (Rs./acre)</b>	<b>NF</b>			<b>Non-NF</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>No grading</b>
<b>Grades</b>				
%age of each grade sold	60	25	15	100
Quantity sold (Kg./acre)	2340	975	585	3200
Price (Rs./kg)	8	5	3	7.8
Gross income (Rs.)	18720	4875	1755	24960.0
	25350 (6.5)			
Cost of production	14703.3 (3.8)			11724.5 (3.66)
Cost of marketing	-			5696.0 (1.78)
Cost of production and marketing (Rs.)	14703.3 (3.8)			17420.5 (5.44)
Net income (Rs.)	10646.7 (2.73)			7539.3 (2.36)
Difference in net income in NF channel over non-NF channel	3107.2 (41.2)			

Note: Figures in brackets are costs/ returns per kg..

About 82% were of the view that in linking with NF retail chain, their transaction costs had reduced significantly as they no longer had to sell in KR market in Bangalore where they had to pay commission, transportation and loading and un-loading charges. Timely supply of good quality inputs, which were cheaper than market price, was reported by about 73% farmers. 61% were also reported that working with retail had resulted into family labour and time saving which they could now invest on farm rather than in *mandi*. 40-45% farmers were of the view that NF provided the same and reasonable price throughout the season, which helped in mitigating the price risk that prevailed in the *mandi*. 24% opined that timely payment at 15 day interval helped more thrift. Free extension services, giving advance payments (up to Rs. 15000-2000) without any interest in emergency, waiving of seed and fertilizer cost during crop failure and strict supervision of the produce resulting in good quality produce and fodder were the other major reasons reported by farmers to work with the retail chain. One farmer farmers was also of the view that NF had promoted the diversification to cash crops in M. Gopahalli by shifting away from the sugarcane (table 4.42). The retail prices of NF products were much higher than the *mandi* prices of the produce due to value addition and they also offered higher than *mandi* price to growers (table 4.43).

**Table 4.42: Distribution of farmers by reasons for selling to NF (multiple responses)**

Reasons for selling to NF	No. and %age of farmers
Reduced transaction costs as NF picked the produce at farm itself	27 (81.8)
Timely supply of good quality inputs at lower than market price	24 (72.7)
Time and family labour saving	20 (60.6)
Reasonable price for the produce	15 (45.5)
Fixed price	13 (39.4)
Timely doorstep payment at 15 day interval resulted into more savings	8 (24.2)
Free of cost extension services	7 (21.2)
Giving advance payments in emergency	4 (12.1)
Waiver of seed and fertilizer cost in case of crop failure	3 (9.1)
Strict field supervision resulting in better quality produce with lower rejections	2 (6.1)

Note: Figures in brackets are % of farmers in total.

**Table 4.43: Comparison of NF prices and traditional *mandi* prices (Rs/kg)**

Crop/Product	System	Farm gate price	Bulk Price	Retail Price
Baby corn (recovery rate - 12%)	Traditional	4	12 (corn price)	18
	Namdhari	7 (unpeeled)	65-70 (peeled)	140 (peeled and packed)
<i>Bhindi</i> (Okra)	Traditional	4	10-12	16-20
	Namdhari	9	18	32 (pouch packed) 20- unpacked

Source: Dhananjaya and Rao (2009)

#### 4.33.4 Problems in the interface

About 52% of the farmers working with NF did not face any problem in working with Namdhari. Of the remaining, 62% reported that NF paid lower price than the open market price and did not revise the price when price in open market increased. Lack of timely supply of agri-inputs and their poor quality was reported by 50%. Another 31% farmers were also of the view that, if crop failed, NF did not provide the adequate insurance cover. Delay in loading the produce due to delay in the transport vehicle and lack of proper extension services were also reported by 25% and 19% of farmers respectively. 12.5% each also reported that NF provided crates free of cost to pack *bhindi*, but charged for the *nano* bags

and delayed procurement by 1-2 days due to lower retail prices in open market than the pre-agreed price (table 4.44).

**Table 4.44: Distribution of farmers by problems faced in retail chain linkage (multiple responses)**

<b>Problems faced</b>	<b>No. of farmers reported</b>
Paying lower price than the market price and non-revision of price according to market price i.e. gave very little price hike if the price in market was higher	10 (62.5)
Lack of timely supply of agri-inputs and their poor quality	8 (50.0)
Lack of adequate compensation in the event of crop failure	5 (31.3)
Delay in picking the produce from farm	4 (25.0)
Poor extension services	3 (18.8)
Crates were given free while nano bags were charged	2 (12.5)
Delaying produce procurement from farm when retail price in open market was lower than the pre-agreed price	2 (12.5)

Note: Figures in parenthesis indicate the %age of responses in total who reported problems.

On the role of retail chain for supply chain improvement, about 61% farmers were of the view that NF should provide higher price than the open market price. Another 45% farmers wanted interest free loans from NF. Since NF waived only seed and fertilizer cost in the event of crop failure, about 1/3<sup>rd</sup> of the farmers also wanted full compensation in the event of crop failure. On time supply of agri-inputs and advances for family needs like education and social ceremonies were suggested by 24% and 21% farmers respectively. Higher bonus in price when the prices in open market were higher and requirement of drip irrigation on all farmers' field were the other notable suggestions given by a few farmers (table 4.45). 55% farmers were of the view that government should not interfere in the functioning of retail chains as it would make functioning of the system corrupt. Only few responded that government should provide subsidies for agri-inputs, strengthen the extension services, and allow more of retail chains which would increase market competition.

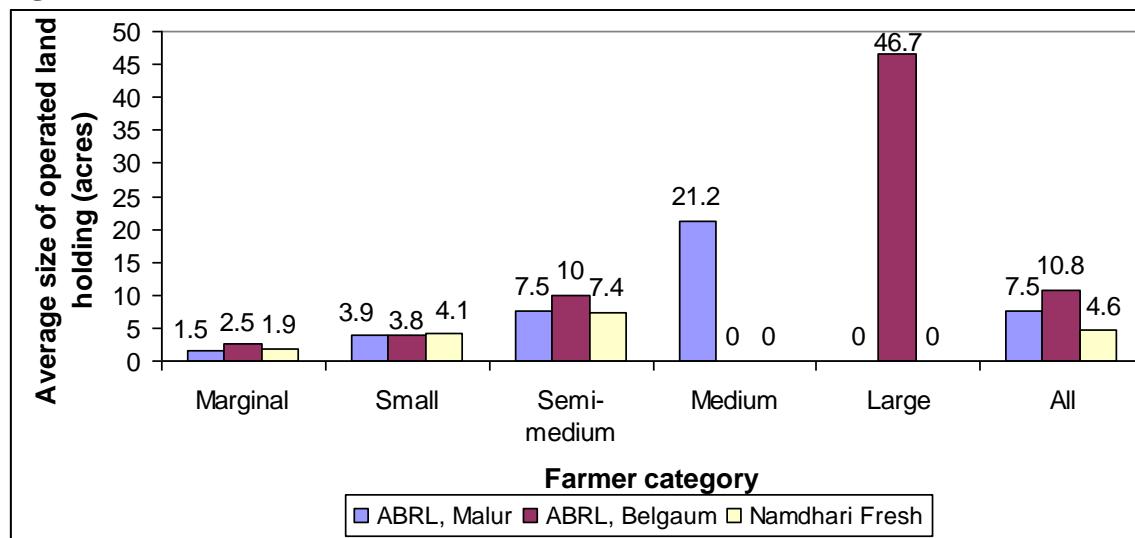
**Table 4.45: Distribution of farmers by suggestions on the role of retail chain for supply chain improvement (Multiple responses)**

Role of NF	No. of farmers reported
Higher price	20 (60.6)
Interest free loans	15 (45.5)
Full crop insurance in event of crop failure	11 (33.3)
On time supply of agri-inputs	8 (24.2)
Give advances for study and marriage of children	7 (21.2)
Higher bonus price when price are high in open market	4 (12.1)
Should provide drip irrigation for all farmers	3 (9.1)

#### 4.4 Summary

ABRL procured the produce from contact farmers who delivered the produce on their own at the CC in Malur, Kolar and from consolidator who had both contact and contract farmers in Belgaum. However, NF had informal, oral and non-registered contract with farmers and produce was picked at farm gate. Across both the locations, ABRL worked with all categories of farmers, except large farmer in Malur and medium farmers in Belgaum (fig. 4.12). However, NF worked with marginal, small or semi-medium farmers only. Small farmers constituted about 56-68% of total farmers across both the retail chains which were higher than that in Karnataka state (26.6%). However, average size of operated land holdings was higher in case of ABRL farmers (10.76 acres in Belgaum and 7.46 acres in Malur) compared to that in case of NF farmers (4.6 acres), and higher than average size of operational holdings in Karnataka (4 acres).

**Figure 4.12: Profile of farmers in ABRL and NF retail channels in Karnataka**



Only 2-3% of operated land of ABRL farmers across both locations was leased-in as against 19% in case of NF farmers. ABRL farmers in Belgaum leased out 5% of area of the owned land while leased-out practice was altogether absent among ABRL farmers in Malur and NF farmers. In Malur, ABRL farmers had only 70% of operated area as tubewell irrigated compared to 73% and 88% among contact and contract farmers respectively in Belgaum. However, 75% of operated area of NF farmers was tubewell/canal irrigated. ABRL farmers in Belgaum did not have any area under drip compared to 48% farmers in Malur who had about 38% area under drip. 15% of NF farmers also had about 17% area under drip. The %age of farmers with milch animals was higher in case of NF farmers (76%) compared to 47% in case of ABRL farmers in Belgaum and 32% in Malur. NF farmers also had higher number of milch animals/acre of land (0.46) compared to the ABRL farmers (0.33 in Belgaum and 0.12 in Malur). However, average income from dairying was higher in case of ABRL farmers in Belgaum (Rs. 4052/month) compared to that in case of NF farmers (Rs 3864/month) and ABRL farmers in Malur (Rs. 2300/month). 15-26% of farmers across both the retail chains had off-farm incomes and average off-farm income/month/person was only Rs. 789 in case of ABRL farmers in Belgaum and around Rs.460 in case of NF and ABRL farmers each in Malur. ABRL and NF farmers had similar %age of GCA under contact/contract crops (73-77%) and non-contact/contract crops (around 25%). Cropping intensity across both retail chains ranged between 175 and 193.

ABRL in Malur CC procured about 60% and 42% of the total cauliflower and tomato respectively as compared to 25% of cauliflower and tomato each in case of contact farmers and 90% of cauliflower and 87.5% of tomato in case of contract farmers in Belgaum. However, NF procured all the produce of the contracted farmers. The rejection rate at Malur CC was only 5% in cauliflower and 6% in tomato compared to higher rejection rate of 15% in case of contact and 10% in case of contract farmers in case of cauliflower and 18% in case of contact and 12.5% in case of contract farmers in case of tomato at CC-cum-DC of the consolidator in Belgaum. But, rejection rate in NF at farm level was only 1-2%.

The average yield in cauliflower and tomato in ABRL was higher among contact farmers in Malur (11533.3 flowers/acre and 131.1 qtls/acre respectively) followed by 12142.9 flowers/acre in cauliflower and 120 qtls/acre in tomato in case of contact farmers and 8800 flowers/acre in cauliflower and 96 qtls/acre in tomato in case of contract farmers in Belgaum. NF contract farmers had higher yields (32 qtls in bhindi and 39qtls in baby corn) than that of non-NFfarmers (30 qtls in bhindi and 32 qtls in baby corn). In ABRL, average price realization was lower in retail channel in case of the contact farmers across both locations (Rs. 5.20/flower in cauliflower and Rs. 3.1/kg in tomato in Malur and Rs. 3.8/flower and Rs. 3.2/kg in Belgaum) compared with that in non-retail channel (Rs.5.6 /flower in cauliflower and 3.55/kg in tomato in Malur and Rs. 3.9/flower and Rs. 3.5/kg in Belgaum). However, contract farmers in Belgaum realized higher prices in retail channel (Rs. 4.8/flower in cauliflower and Rs. 3.75/kg in tomato) than that in non-retail channel (Rs. 4.4/flower in cauliflower and Rs. 3.55/kg in tomato). Although NF provided grade-wise prices for bhindi and baby corn, however, calculated average price for all grades (Rs. 9.69/kg for bhindi and Rs. 6.5/kg for baby corn) was lower in NF than that in *mandi* (Rs. 10/kg for bhindi and Rs. 7.8/kg for baby corn).

In ABRL, cost of production among contact farmers across both locations was almost similar (about Rs. 2/flower for cauliflower and Rs. 1.73/kg for tomato) but relatively higher among contract farmers in Belgaum (Rs. 2.8/flower for cauliflower and Rs. 2.3/kg for tomato). However, marketing costs in each channel were the highest in case of Belgaum contact farmers (Re. 0.88/flower in ABRL and Rs. 1.52/flower in *mandi* for cauliflower and Re. 0.4/kg ABRL and Rs. 1.1/kg in *mandi* for tomato) followed by that of the Belgaum contract (Re. 0.73/flower in ABRL and Rs. 1.41/flower in *mandi* for cauliflower and Re. 0.24/kg in ABRL and Re. 0.9/kg in *mandi* for tomato) and Malur contact farmers (Re. 0.26/flower in ABRL and Rs. 1.33/flower in *mandi* for cauliflower and Re. 0.23/kg in ABRL and Re. 0.9/kg in *mandi* for tomato). Thus, ABRL farmers across both locations had lower average costs of production and marketing in retail channel than that in non-retail channel. Hence, all ABRL farmers across both locations had higher net income in retail channel compared to that in non-retail channel. Although, contact farmers had significantly higher yields than that of the contract farmers in Belgaum, but lower price realization for contact farmers in both *mandi*

and retail channel, resulted in the lower net income among contact farmers than that among contract farmers. Thus, farmers chose to sell to retail channel due to cost savings like less time in selling, lower transportation cost, no loading or unloading charge, no sales commission, lower spoilage and fair and quick weighment and payment, as compared with that if they sold the same produce in *mandi*.

In case of NF, cost of production was higher among NF farmers (Rs. 6.67/kg in bhindi and Rs 3.8/kg in baby corn) than that among non-NF farmers (Rs 5.74/kg in bhindi and Rs. 3.66/kg in baby corn). NF farmers did not incur marketing cost since the produce was picked from the farm itself while Non- NF farmers had to incur marketing cost of Rs. 2/kg in case of bhindi and Rs. 1.78/kg in case of baby corn. Thus, average cost of production and marketing were higher among Non-NF farmers (Rs. 7.74/kg in bhindi and Rs 5.4/kg in baby corn) than that among NF farmers (Rs 6.67/kg in bhindi and Rs. 3.8/kg in baby corn). The resulting net income was also higher in case of NF farmers (Rs.3/kg in bhindi and Rs. 2.73/kg in baby corn) than that in case of non- NF farmers (Rs. 2.26/kg in bhindi and Rs 2.4/kg in baby corn). The major benefits of selling the produce to NF were: reduced transaction costs, timely supply of good quality inputs at lower than market price and time and family labor saving.

However, some times, ABRL farmers defaulted due to lower price in ABRL compared to *mandi* price and higher production due to which farmers preferred to sell the entire produce to *mandi* to avoid marketing costs in two different channels. Lower quality produce and lower indent of NF were some of the other major problems in supplying to ABRL. In case of NF, 62% farmers reported lower price and non-revision of the price when price in open market increased as their major problem. The other major problems in retail chain linkage were: lack of timely supply of agri-inputs and their poor quality, inadequate insurance cover, if crop fails, and delay in procuring the produce.

## Chapter 5

### **F&V Retail Chains and Primary Producers in Punjab and Haryana: inclusiveness and impact**

#### **5.1 Introduction**

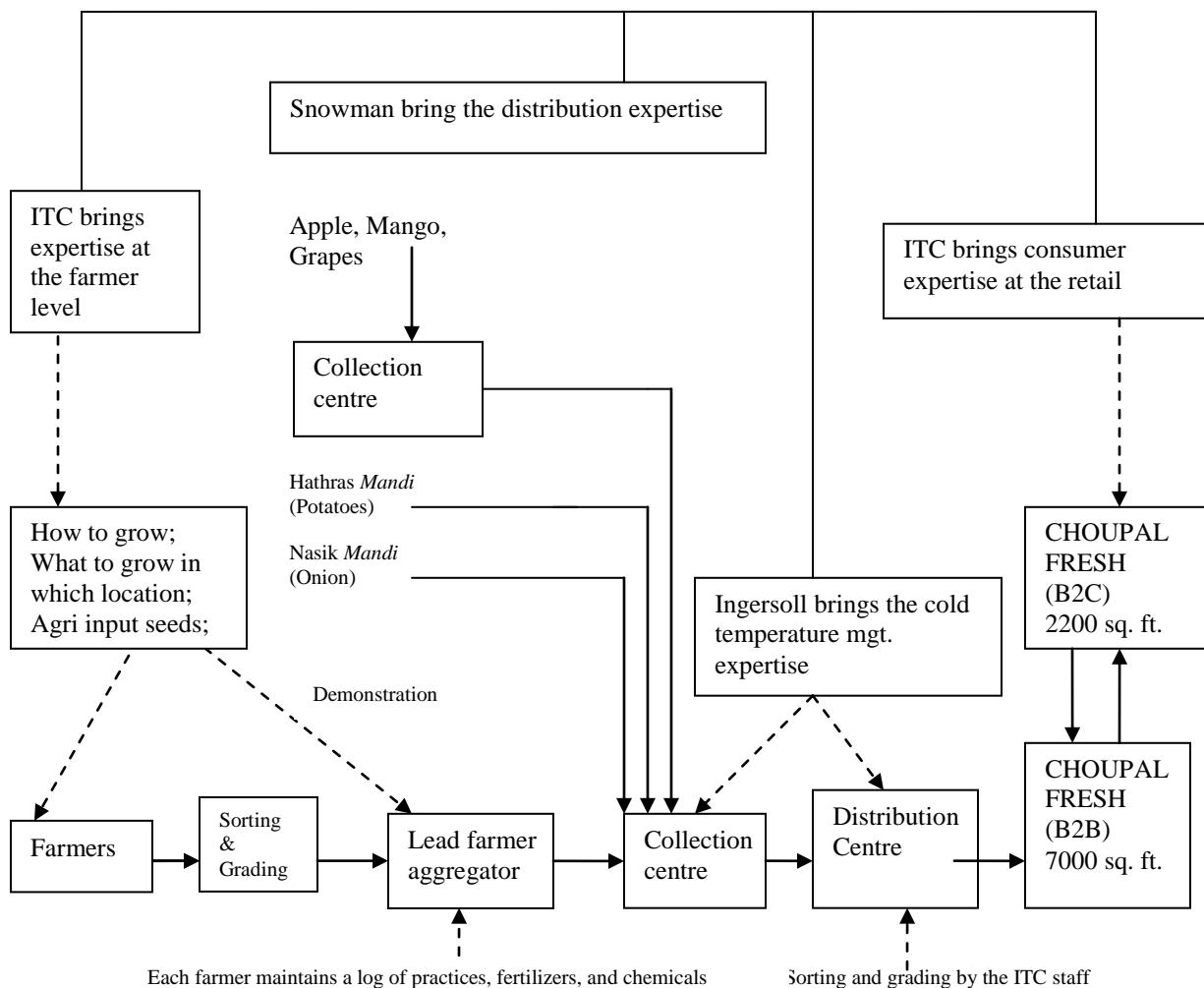
This chapter examines the inclusiveness and effectiveness of the F&V retail chain in linking farmers with end markets with the help of a case study of a retail chain (Indian Tobacco Company (ITC)'s Choupal Fresh) and its farmer interface based on a primary survey of growers of two major crops- cauliflower and bottle gourd by analysing the profile of farmers working with the chain in Punjab and Haryana, their incentives to work with it, and the effect it has been able to make on their incomes.

#### **5.2 Profile and operations of ITC Choupal Fresh**

ITC, a major multinational conglomerate dealing in cigarettes, hotels, food and agricultural inputs in India, launched FFV retailing in urban areas through its Choupal Fresh stores. Choupal Fresh also has parallel wholesale Cash & Carry (C&C) outlet which not only supplies to its retail stores but also sells to organized retail companies, push-cart vendors, and other traditional retailers who purchase their procurement at the wholesale price. In some cases, ITC was instrumental in extending credit facilities to the push-cart vendors through another company “Basix” which specialized in micro-credit financing through the Citi Bank. In 2007, around 25 push-cart vendors secured a loan of Rs. 10,000 each to be repaid in 12 installments of Rs. 950. This could help small roadside vendors develop a brand image and charge better prices for quality products (Joseph et al, 2008).

Choupal Fresh presently operates in Hyderabad, Pune, and Chandigarh covering a total area of 27,000 sq. ft. In this venture, ITC has partnered with Ingersoll Rand and Snowman. Ingersoll Rand offers material handling and temperature control technologies and Snowman provides the logistics support in the form of warehouse and transport (fig.5.1). In this collaboration, ITC leverages its expertise in backward linkages through CCs and agricultural extension services gained from the e-Choupal initiative which is pioneer in offering farmers value added services such as crop advisories, advance weather forecasts, and output price discovery through internet connection at the local level through a *sanchalak*. The *sanchalak*,

a local trader or farmer, appointed by ITC on commission basis, buys output for ITC and sells various agricultural inputs for it on commission basis. Then, there is the *sanyojak*, a local trader who is higher level consolidator for ITC in e-choupal system of buying and selling (Singh, 2006).



**Figure 5.1: ITC Choupal Fresh procurement and sales system**

Source: Joseph et al, 2008.

Through its extension services, ITC manages the quality of the produce and aims to build an ITC brand in FFVs. In 2008, ITC had seven outlets in Hyderabad and one in Chandigarh. ITC had plans to open 140 Choupal Fresh across 54 cities at an investment of Rs. 8 billion

(Joseph et al, 2008). The chain opened its first outlet in Chandigarh in 2006 and another in 2007. The first one was closed in 2008 and second in April, 2009.

### 5.21 Store Formats and sales in Chandigarh

Choupal Fresh primarily focuses on FFVs. The product mix includes fresh vegetables, bulk produce like tomatoes, potatoes, and onions and fruits like oranges, mangoes, and grapes (photo 5.1). Currently, the Choupal Fresh product mix consists of 260 SKUs all sorted and graded in different basket sizes (Joseph et al, 2008). The average area per store was 2500 sq. ft. More than 70% of the store area was devoted to F&Vs. A store had one manager and more than 10 shop floor employees. The store did not sell any product by unit price but by weight only. The wastage at store level was 4% including 2% dump at the end of the day.



**Photo 5.1: The ITC Choupal Fresh Store in Chandigarh**

The first store had an area of 850 sq. ft. which was closed after 5 months due to lack of viability. The average footfalls in the store were 160 on week-days and 200 on week-ends resulting in sales of one tonne and 1.5 tonne per day respectively. The store did not do any home delivery. The store faced competition from other major chains like More, Reliance Fresh, Spencer's and 6-Ten. The store also faced competition from weekly farmers' markets held in Chandigarh city. Earlier, the store had sales of three tonnes per day and 400 footfalls and it used to procure vegetable directly from farmers in Malerkotla. The second store which

was much bigger in size could not achieve viability even after two years and finally closed in April, 2009.

ITC leveraged its market prices on a 10% commission that it saved by directly procuring from farmers. Besides, ITC was also benefited by offering quality product and building its brand in the long term. On the promotion front, ITC Choupal Fresh had printed and dispatched tailor made invitation cards and held cookery sessions and fruit festivals during which it gave one kg of fruit free for every kg bought. It also maintained direct customer contact through Brochure Mailing Services (BMS). 75% of the sales of Choupal Fresh were institutional mainly wholesale and 25% at the store.

### **Box 5.1 Green Mart**

*Set up by Plantsman Farm Fresh Pvt. Ltd, a subsidiary of Plantsman's Seeds and Horticulture, at Patiala in 2008, this only store of the company deals in fruits and vegetables (F&Vs) besides groceries, seeds, ladies garments and accessories. F&Vs account for 30% of the total sales which are of the order of Rs. 40000/day. It gets about 250 footfalls a day and size of the ticket is Rs. 150/customer. It has its own labels in Basmati rice and frozen green peas. It carries exotics like Chinese cabbage, broccoli and lettuce but no organics. 50% of the vegetables and fruits are from its own farms and 50% from the market and other suppliers. It has devoted 25% of the store space to F&Vs and three boys manage this portfolio. F&Vs are sold loose by weight and there are no pre-packs. Vegetables were found to fresher and cheaper than those in other stores. It compares price with other retail stores which is a normal practice among retailers. It sells local delicacies like mustard green leaves (Sarson ka Saag) as well as processed Sarson Ka Saag by Markfed Punjab.*

*In fact, another store in the same town (ABRL's More) also compared its prices with the neighboring Bharti Easy Day store and displayed these price comparisons to inform buyers that its price were lower than that of the competitor.*

### **5.22 Procurement systems**

ITC procured from nearly 1,000 suppliers including the local farmers and the APMC market agents, for its supply to all the three locations. There were three CCs around three outlets. All types of fruits had their own CCs in the speciality cluster of that region. Further, some of the CCs which also operated for the ITC export business were used during the season for

Choupal Fresh outlets. Certain CCs were of makeshift nature during the harvesting season, for example, the potato CC in Hathras. ITC procured national produce through the traditional route via the APMC markets. The fruits and bulk produce for all the three outlets were sourced from product-specific clusters, such as mangoes from Ratnagiri and Vijaywada, apples from Himachal Pradesh, potatoes from Hathras in Uttar Pradesh, oranges from Nagpur, and onions from Nashik. Here, ITC made a purchase like any other wholesaler at the APMC market through the agent at a given commission rate (fig. 5.1).

In the APMC markets, fruit was sold through the auction system, whereas vegetables are sold through negotiations. Fresh and seasonal produce- vegetables like tomatoes, brinjal, gourds, and fruits like papaya and palm - were procured from the farmers in the local region around Hyderabad, Pune, and Chandigarh. There were around 150 farmers who directly supplied Choupal Fresh through a lead farmer aggregator. Through direct procurement, farmers saved 10% commission for the services formerly undertaken by the commission agent. In return, farmers were required to do sorting, grading, and maintain a logbook of crop management practices followed by the farmers (Jospoh, et al, 2008).

### **5.23. The Malerkotla experiment**

Growth-oriented Micro Enterprise Development (GMED), India of the USAID (United States Agency for International Development) implemented by ACDI-VOCA (Agricultural Cooperative Development International-Volunteers in Overseas Cooperative Assistance) in collaboration with the ITC attempted an intervention in fresh produce to involve small-holders as suppliers to organized retail. GMED and ITC started their operations in Malerkotla, Punjab by offering free extension services. Initially, farmers started with growing vegetables only on one half of their farms. Gradually, after realising higher returns and constant technical support, they started to switch their entire holdings to vegetable production. GMED introduced simple but effective changes in production techniques such as tray nurseries to ensure uniform crop, raised beds and shade nets for crops such as tomatoes and cucumber. They cut the cost of operations by one-third by training the farmers on how to use the expensive inputs. For example, farmers were sowing 900 gm. of cucumber seed per

acre, at a price of Rs. 12,000 per kg, while the recommended seed rate was only 300 gm. per acre.

The farmers also used twice as much fertilizer as was needed, more irrigation water than was necessary, thus wasting electricity and labor, and more pesticides than required. GMED and ITC also helped farmers to grade the tomatoes in three categories A, B and C to realize better prices. ITC regularly bought the top two grades while the grade C could be sold in *mandi*. As the farmers realized which grade fetched highest prices, they made greater efforts to bring quality of their produce up to that level. Farmers, who had started with only 30% of their produce in grade A, reached a level of 90% after following GMED extension staff advice. ITC provided color-coded crates to farmers to segregate produce by grade, which facilitated grading and tracing of the crops. ITC also organized transport, storage and distribution, thus integrating all the functions of the value chain.

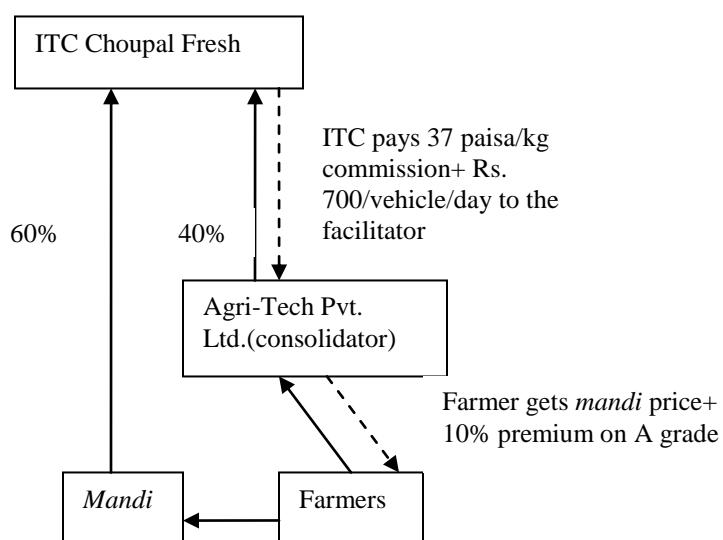
ITC's price discovery system was based on the local market prices, but because the crops were graded, the producers were guaranteed a minimum price, and since there was less need for handling and multiple intermediaries, farmers earned higher returns. The farmers earned 15% more than local market price on grade A produce, and grade B produce was bought at local market rates. This, on an average, increased the farmers' net income by one-third (Misra, 2009). But, ITC's profit stood at 12% of its sales, and the initial investment of about Rs. two crore in developing this value chain would not be recovered until the programme had scaled up (Misra, 2009). The project in Malerkotla is now wound up.

#### **5.24 Procurement operations in Punjab and Haryana**

ITC procures from Lalru (40 Kms. away from Chandigarh) in Mohali district in Punjab and Panjokhra Sahib (40 Kms. from Chandigarh) in Ambala district of Haryana through a consolidator under contractual arrangement based on fixed commission plus other facilities like transport cost reimbursement. All the FFVs are sold loose and there is no processing facility other than back yard of the store which is used to receive, grade and dispatch F&V. The major vegetables procured are potato, tomato, cauliflower, cabbage, carrot, radish, spinach, okra, bottle gourd, pumpkin, and beans and major fruits include kinnow, pear, and

guava. All the grading is done manually and material from the farmers' field is brought in crates. ITC pays market-price based price to the supplying farmers in cash through the consolidator who gets an advance for the same. At the consolidator level, there is one supervisor and two laborers who manage the entire procurement with a pick up truck. Choupal Fresh buys only A grade produce and there is a quality check at the store besides the farm level grading. Only 5% variation in quality is allowed. The orders were placed with the farmers at 9 a.m; procurement was carried out between 10 to 12 noon, and by 2 to 3 p.m, vegetables were dispatched to the store and reaches the store by 5 p.m. This means three hours of cycle time and four and half hours from harvest to store. Therefore, the store sells the produce at 6 p.m. under the label 'Today's Harvest'.

Direct procurement from farmers was 40% of the total (fig. 5.2). Potato, onion and tomato accounted for 40% of the total volume procured and 25-30% in value terms. Choupal Fresh store has achieved 4.5 tonne per person produce handling including institutional sales. It faced very high cost of distribution due to smaller volumes especially in off-season when it was only 0.5 tonnes. The bigger constraint was lower volume of sales as it had only one store in the city. There were no problems in scaling up procurement. The store also had other brands in FMCGs to supplement F&V purchase.



**Fig. 5.2: ITC Choupal Fresh vegetable procurement system in Punjab/Haryana**

The consolidator worked with 40 listed farmers in Lalru area of Mohali district of Punjab and Panjokhra Sahib in Ambala district of Haryana; of whom 20 were suppliers and 10 of them supplied daily/regularly. The consolidator had formal contract with the chain and an informal one with the supplying farmers. The consolidator was paid a net commission of 37 paisa per kg. of produce as both quality and price were determined by Choupal Fresh and Rs. 700/day to transport the produce from the field to the retail store in Chandigarh. It also provided one extension officer to the consolidator. ITC Choupal Fresh had no involvement with the farmers either in input supply or output purchase. The consolidator was paid fixed commission per kg. The farmer price was nothing but closest reference market price of the day minus transport cost. But, the farmers were paid 10% premium on this price for ITC grade material which was the only grade, it bought. The quality premium for lower quality produce was reduced from 10% to 5%.

The consolidator began supply to the store in November, 2007. There were daily negotiations on SKU prices with farmers, if market price fluctuated. The farmers found it beneficial to supply to Choupal Fresh because of farm pick up, on the spot cash payment, fair weight and no labor and marketing costs unlike those in *mandi*. The consolidator had no commitment to supply but lost his commission if failed to do so. This was known as modified e-choupal model for procurement. ITC provided initial capital support to the consolidator. The supervisor was consolidator's employee but paid by the ITC. It also asked the consolidator to change his entity from a buying centre to a CC to avoid market fee. Later, he sold only at Chandigarh, as a farmer, to the ITC, as one transaction. All billing by ITC was done in the name of consolidator's company (Agri-Tech Private Limited) but he maintained farmer wise details of transactions.



**Photo 5.2: Graded vegetables being procured and radish in crates after grading**

The quality of vegetables was determined by manual checking of size, color, shape, freshness and ripeness (photo 5.2). The first weighing of the produce was done at the farmers' field with a scale in the vehicle. The second weighing was done at the collection centre with an electronic weigh scale which was considered final for farmer payment. The third and last weighing was done at the store which was final for payment to the consolidator. The consolidator could supply poor quality produce only upto 0.5% of the total delivered. The consolidator procured about 0.75 tonnes involving 20 SKUs from about a dozen farmers in summer. The minimum procurement of an SKU from a farmer could be as low as five kg in case of knol-khol or coriander and maximum as much as three quintals in case of tomato or cauliflower.

The area under F&Vs was 1.86% of the GCA in Punjab and 2.72% in Haryana in 2000-01. Mohali in Punjab and Ambala in Haryana are the vegetable growing districts in the two states. The retail chain chose this area for this reason after closing its procurement operation in Malerkotla besides its proximity to Chandigarh. The data for the study was undertaken from the retail chain supplying farmers in villages of Lalru in Dera Bassi block in Mohali district of Punjab and in villages of Panjokhra Sahib area in Ambala city block of Ambala district of Haryana bordering Punjab. Two crops- cauliflower and bottle guard -were taken for study as these were the major crops being procured by ITC in terms of volumes and number of supplying farmers. Since, there were two categories of farmers in the region- local land owners and leasee migrant vegetable growers- the analysis is carried out across these

two categories, besides across the two crops. The number of farmers interviewed in each crop and category is given below in table 5.1.

**Table 5.1: Category and crop-wise distribution of ITC farmers**

Crops> Farmers' category	Cauliflower	Bottle gourd
<b>Leasee migrant</b>		
Small (>2.5 to $\leq$ 5 acres)	2 (18.2)	3 (27.3)
Semi-medium (>5 to $\leq$ 10 acres)	1 (9.1)	-
Medium (>10 to $\leq$ 25 acres)	2 (18.2)	2 (18.2)
All	5 (45.5)	5 (45.5)
<b>Local</b>		
Small (>2.5 to $\leq$ 5 acres)	2 (18.2)	1 (9.1)
Semi-medium (>5 to $\leq$ 10 acres)	3 (27.3)	3 (27.3)
Medium (>10 to $\leq$ 25 acres)	-	1 (9.1)
Large (>25 acres and above)	1 (9.1)	1 (9.1)
All local farmers	6 (54.5)	6 (54.5)
<b>All</b>	<b>11 (100.0)</b>	<b>11 (100.0)</b>

Note: Figures in brackets are % share of each category in total number of farmers in each crop

### **5.3 The Primary produce interface**

#### **5.31 Farmer profile**

In villages of Lalru and Panjokhra Sahib, more than half of the ITC farmers (54%) were associated with ITC for 1-2 years. Some of the farmers were even linked for more than two years (27%). Only very few (18%) were associated with the chain for less than one year. About 36% of ITC farmers interviewed were small followed by semi-medium (32%), medium (23%) and large (9%). Leased in land as %age of operated land was highest among medium farmers (80%) followed by small (59%), large (20%) and semi-medium farmers (11%) (table 5.2). However, %age of leased out land in owned land was higher among small farmers as compared to that among semi-medium farmers (11%). Thus, small farmers were the largest practitioners of both leasing in and leasing out. The farmers were cultivating on all the operated land across all categories except large farmers where only 90% of the operated land was cultivated. With leasing in and out, average size of holdings of all farmers went up from 6.91 acres to 9.91 acres; resulting in more than 40% of operated land being leased in. All of the operated area was tubewell irrigated without any micro (drip/sprinkler) irrigation.

Of the total, 54.5% farmers were local and the rest leasee migrant farmers (45.5%) (Photo 5.3). The migrant leasee farmers did not have any owned land. The operated land holdings of leasee migrant farmers were small as compared to that of local farmers. Local small and semi-medium farmers were leasing out land resulting in reduction of land holding size from 11.67 acres to 5 acres and 9.33 acres to 8.33 acres respectively. Among all categories of local farmers, leasing in practice was prevalent among large farmers only (table 5.3).



**Photo 5.3: A migrant leasee farmer (left) and a local leasee farmer with the consolidator at the farm (right)**

**Table 5.2: Land holding category-wise distribution of ITC farmers (in acres)**

Parameters> Farmer's category	No. of farmers	Land owned	Leased- In/out Land	Operated land	Leased in land as %age of operated area	Net cultivated area (as % of operated area)
Small	8 (36.4)##	4.38	2.75 (2.5)*	4.63	59.40 (57.1)##	4.63 (100.0)
Semi-medium	7 (31.8)	8.00	0.86 (0.86)*	8.00	10.80(10.8)##	8.00 (100.0)
Medium	5 (22.7)	2.60	10.40	13.00	80 (-)	13.00 (100.0)
Large	2 (9.1)	24.00	6.00	30.00	20 (-)	27.00 (90.0)
All	22 (100.0)	6.91	4.18 (1.18)*	9.91	42.20 (17.1)##	9.64 (97.3)

Note: #Figures in brackets are % share of each category in total number of farmers.

\* denotes leased out land; # for leased out as %age of owned area

The smallholders (small farmers) accounted for only 36% of the total growers the retail chain was working with. The proportion of small operators was higher among the leasee category (50%) but only 25% among local landholders compared with the proportion of small and marginal holders in the two states -Punjab 35.4% and Haryana 66.7%. The average operated area of retail chain farmers (9.91 acres altogether) and of the leasee and local farmers separately (8 and 11.5 acres respectively) also shows that it was much higher than the average size of the operational holding at the state level -Punjab 9.36 acres and Haryana 5.26 acres (fig. 5.3) (GoP, 2005). Across the two states, farmers in general, irrespective of whether operated holdings were owned or leased in, were semi-medium or medium with average size of operated holding being about 10.3 acres and 9.4 acres in Punjab and Haryana respectively (table 5.4). Thus, it is clear that the chain worked largely with the medium and large land operators only.

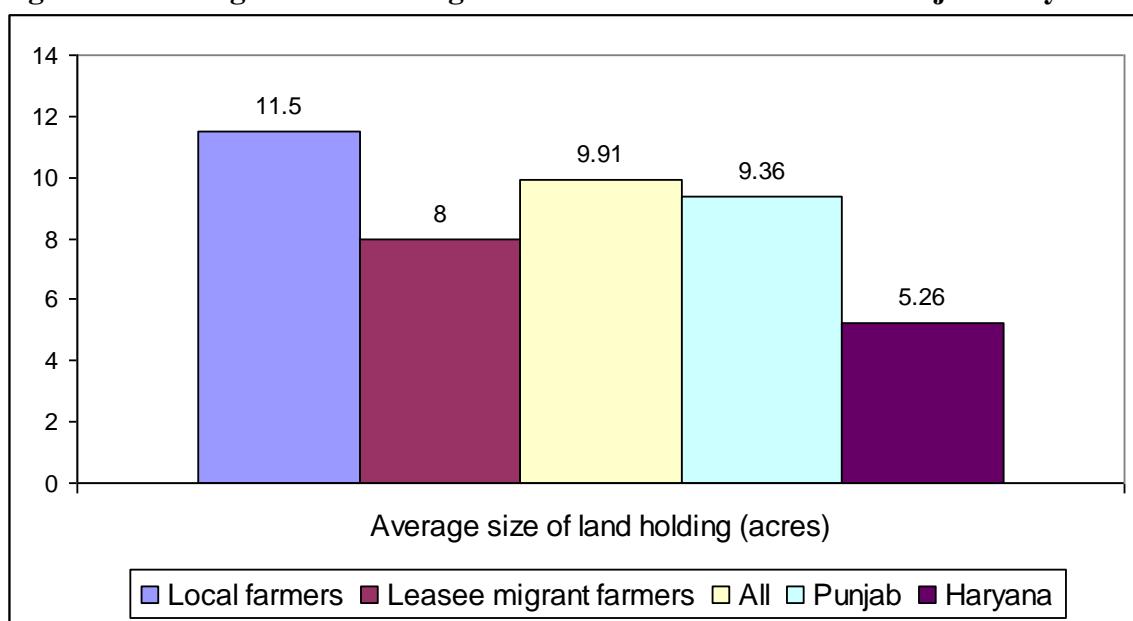
**Table 5.3: Farmer-and landholding category -wise distribution of ITC farmers  
(average in acres)**

Parameter> Farmer Category	No. of farmers	Land owned	Leased-in Land	Operated land	Leased in land as %age of operated area	Net cultivated area
<b>Leasee migrant</b>						
Small	5 (50.0)†	-	4.4	4.4	100	4.4
Semi- medium	1 (10.0)	-	6.0	6.0	100	6.0
Medium	4 (40.0)	-	13.0	13.0	100	13.0
All	10 (45.5)* (100.0)	-	8.0	8.0	100	8.0 (100)
<b>Local</b>						
Small	3 (25.0)	11.67	- (6.67)†	5.00	- (57.2)†	5.00
Semi- medium	6 (50.0)	9.33	- (1.00)	8.33	- (10.7)†	8.33
Medium	1 (8.3)	13.00	-	13.00	-	13.00
Large	2 (16.7)	24.00	6.00	30.00	20. (-)	27.00
All	12 (54.5)* (100.0)	12.67	1.00 (2.17)†	11.50	8.7 (17.1)†	11.00 (95.6)
<b>All farmers</b>	<b>22 (100.0)</b>	<b>6.91</b>	<b>4.18 (1.18)†</b>	<b>9.91</b>	<b>42.2 (17.1)†</b>	<b>9.64 (97.3)</b>

Note: #Figures in brackets are % share of each category in total number of farmers in respective subcategory.

\* %age of total leasee migrant and local farmers, # denotes lease out land; † denotes leased out area as %age of owned land.

**Figure 5.3 Average size of holding of retail chain farmers and in Punjab/Haryana**



**Table 5.4: State-wise land holding pattern of ITC farmers (average in acres)**

Parameter> Farmers' Category	No. of farmers	Land owned	Leased-in land	Operated land	Leased in land as %age of operated area	Net cultivated area
<b>Punjab</b>						
Small	5 (41.7)@	-	4.4 (-)	4.4	100	4.4
Semi-medium	5 (41.7)	7.2	1.2 (-)	8.4	14.3	8.4
Large	2 (16.7)	24	6 (-)	30	20	27
<b>All</b>	<b>12 (100) (54.5)</b>	<b>7</b>	<b>3.33 (-)</b>	<b>10.33</b>	<b>32.2</b>	<b>9.83</b>
<b>Haryana</b>						
Small	3 (30)	11.67	- (6.67)#	5	- (57.1)*	5
Semi-medium	2 (20)	10	- (3)#	7	- (30)*	7
Medium	5 (50)	2.6	10.4 (-)	13	80 (-)	13
<b>All</b>	<b>10 (100) (45.5)</b>	<b>6.8</b>	<b>5.2 (2.6) #</b>	<b>9.40</b>	<b>55.3 (38.2)*</b>	<b>9.4</b>
All	22 (100)	6.91	4.18 (1.18) #	9.91	42.2 (17.1)*	9.6

Note: @ figures in brackets show % share of each category in total number of farmers in each state.

# denotes leased out land; \*leased out land as %age of owned land.

Leasee migrant farmers were also relatively poor in household assets as compared to local farmers as only 70%, 60% and 20% of leasee migrant farmers had televisions, two wheelers and dish TVs respectively. Almost all of the local farmers had two wheelers and dish TVs. Some of them even had car/jeep and pick up truck each. The average family size of the leasee migrant farmers was larger compared that of local farmers. Female children of local farmers did not work as farm labor at all. %age of farm family workers in total family size was also higher in case of leasee migrant (74%) compared to that of local farmers (48%) (table 5.5).

A majority of leasee migrant farmers were either illiterate or below Senior Secondary Certificate (SSC) literate, with only 50% medium leasee migrants holding SSC certificate. In sharp contrast, local farmers were fairly literate as most of them were either SSC, Higher Secondary certificate (HSC) or even graduate without any one being illiterate. In general, small, semi-medium and medium farmers were either SSC or were below SSC. Illiteracy was reported only among small farmers. All the large farmers were higher secondary school literate (table 5.6).

**Table 5.5: Category-wise average family size and structure of ITC farmers**

Family details> Farmers' Category	Family members				Farm family workers				Average farm workers	%age of farm workers in family	
	Adult		Children		Average family size	Adult		Children			
	Male	Female	Male	Female		Male	Female	Male	Female		
Leasee migrant	3.8	3.1	2.0	1.5	10.4	3.3	2.9	0.8	0.7	7.7	74.0
Local	3.4	2.8	1.1	1.2	8.5	1.9	1.7	0.5	-	4.1	48.2
All	3.6	2.9	1.5	1.3	9.3	2.5	2.3	0.6	0.3	5.7	61.3

**Table 5.6: Category-wise distribution of ITC farmers by literacy of head of hh**

Literacy level> Farmers' category	Illiterate	Below SSC	SSC level	HSC level	Graduate
Leasee migrant	2 (20)	6 (60.0)	2 (20.0)	-	-
Local	-	4 (33.3)	5 (41.7)	2 (16.7)	1 (8.3)
All	2 (9.1)	10 (45.5)	7 (31.8)	2 (9.1)	1 (4.5)

Note: Figures in brackets show % share of each literacy category in total.

Only 20% of the leasee migrant households had off-farm incomes as against 58% of local farmers, with overall being 41%. All the leasee migrant and the local farmers with off-farm incomes were either small or semi-medium. The small farmers were found to have higher proportion of households, average number of adults/acre of land and average number of adults/family involved in off-farm activity than those on the semi-medium farmers. Average off-farm income of leasee migrant households was only Rs.250/month/person as against quite high income of Rs. 2541/month/person of local households. Across farmers' categories, among local farmers, small farmers had higher off farm income of Rs.4333/month/person than the semi-medium farmers (Rs. 3083/month/person). But, due to the very low average off farm income of small leasee migrant farmers, the overall average off farm income of small farmers was lower than that of semi-medium farmers (table 5.7).

A farmer put on an average, seven acres under various vegetables during the year with leasee growing upto 10 acres on average and locals only about 5 acres. The cropping pattern of leasee migrant farmers was more diversified than that of local farmers as they had devoted more than 60% of the GCA vegetables as compared to 23% in case of local farmers (fig. 5.4).

**Table 5.7: Farmer and landholding category-wise distribution of ITC farmers by average off-farm involvement and income**

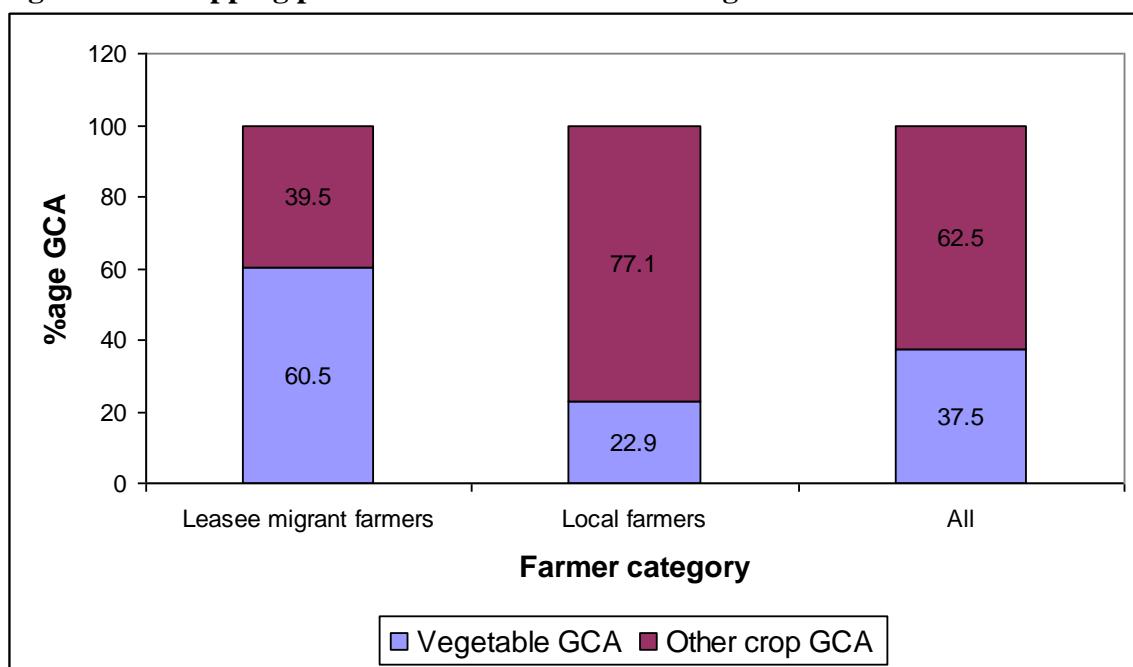
Off farm parameters> Farmers' Category		% of hhs having off-farm income	No. of adults/acre of land with off-farm income	No. of adults/family with off-farm income	Income (Rs./month/person)
Leasee migrant	Small	40.0	0.18	0.80	500.0 (1250.0)
	All	20.0	0.05	0.40	250.0 (1250.0)
Local	Small	100.0	0.33	1.67	4333.3 (4333.3)
	Semi-medium	66.7	0.12	1.00	3083.3 (4625.0)
	All	58.3	0.08	0.92	2541.7 (4357.1)
Both	Small	62.2	0.24	1.12	1937.5 (3100.0)
	Semi-medium	57.1	0.11	0.86	2642.8 (4625.0)
	All	40.9	0.07	0.68	1500.0 (3666.7)

Note: Figures in parenthesis indicate the averages for farmers with off farm income.

They were, thus, more intensive cultivators of vegetables. They grow about half a dozen different vegetables as compared to a few by the local farmers. The local farmers put about

77% of the GCA under traditional crops like wheat, paddy, sunflower and fodder. The cropping intensity on leasee migrant farms was 221, somewhat higher than that on local farms (211), the average on all farms being 215. On an average, a farmer grew 2-4 acres of each vegetable (cauliflower and bottle gourd) with higher area by leasee farmers and as much as 2.5 and 5 acres of cauliflower alone in case of local and leasee growers. On an average, cauliflower took 18% of GCA and bottle gourd another 10%. It was as high as 30% and 10% respectively in case of leasee migrant cultivators compared with only 11% and 7% in case of local farmers (table 5.8).

**Figure 5.4: Cropping pattern across ITC farmer categories**



**Table 5.8: Category-wise cropping pattern and cropping intensity of ITC farmers**

<b>Farmer category&gt; Crop-wise GCA (acres)</b>	<b>Leasee migrant</b>	<b>Local</b>	<b>All</b>
<b>Crop</b>			
Cauliflower	5.35 (30.2)	2.55 (11.0)	3.82 (18.4)
Bottle gourd	2.50 (14.1)	1.59 (6.8)	2.00 (9.7)
Cabbage	1.40 (7.9)	-	0.64 (3.1)
Bitter gourd	0.50 (2.8)	0.46 (2.0)	0.48 (2.3)
Radish	0.45 (2.5)	-	0.20 (1.0)
Carrot	0.50 (2.8)	-	0.23 (1.1)
Other vegetables*	-	0.71 (3.1)	0.39 (1.9)
<b>Veg. GCA and % to total GCA</b>	<b>10.7 (60.5)</b>	<b>5.31 (22.9)</b>	<b>7.76 (37.5)</b>
Wheat	2.30 (13.0)	6.92 (29.8)	4.82 (23.3)
Paddy	4.20 (23.7)	7.17 (30.9)	5.82 (28.1)
Sunflower	-	0.75 (3.2)	0.41 (2.0)
Fodder	0.50 (2.8)	3.08 (13.3)	1.91 (9.2)
<b>Total other crop GCA and % in total GCA</b>	<b>7.00 (39.5)</b>	<b>17.92(77.1)</b>	<b>12.96 (62.5)</b>
Grand GCA	17.7 (100)	23.23 (100)	20.72 (100)
Net cultivated area	8.00	11.00	9.64
Cropping intensity	221	211	215

Note: Figures in brackets show % share of each crop in each farmer category in total GCA.

\*Other vegetables include tomato, pumpkin, *bhindi*, *dhania*, *palak*, *methi*.

#### **5.4 Cauliflower production and procurement**

The harvesting in cauliflower starts two months after sowing and continues for one month till fully harvested. The cost of production/acre in cauliflower was higher for local farmers (Rs.31569) as compared to that for leasee migrant farmers (Rs.28499). The leasee migrant farmers were using family labor mainly in sharp contrast to the extensive use of hired labor by the local farmers. The major costs of leasee migrant farmers in cauliflower were family labor (22%), fertilizer (18%), land rent (18%) and pesticides (14%) while that for local farmers, these were hired labor (26%), land rent (20%), fertilizer (15%) and pesticide (14%). The rental value of land reported by local farmers was higher than that by leasee migrant farmers (table 5.9).

**Table 5.9: Category-wise production costs of ITC farmers in cauliflower**

<b>Farmer category&gt; Cost components (Rs./acre)</b>	<b>Leasee migrant</b>	<b>Local</b>
Land rent	5166.7 (18.1)	6300.0 (20)
Land preparation	1622.2 (5.7)	920.0 (2.9)
Seed	1933.3 (6.8)	1670.0 (5.3)
FYM	1133.3 (4.0)	800.0 (2.5)
Fertilizer	5266.7 (18.5)	4830.0 (15.3)
Pesticide	4122.2 (14.5)	4490.0 (14.2)
Weedicide	305.6 (1.1)	770.0 (2.4)
Irrigation	720.0 (2.5) 1800*	754.1 (2.4) 1508.3*
Labour	Hired Family	1986.0 (7.1) 6243.3 (21.9)
Total cost of production	28499.3 (100.0)	31569.1 (100.0)

Note: Figures in brackets show % share in average cost of production in each category.

\* These figures show cost of irrigation for cauliflower farmers in Panjokhra Sahib area (Haryana) only. The overall average cost figures include no costs of irrigation in the Lalru area (Punjab) where canal water and electricity for tubewells is free.

The transaction cost per kg. of cauliflower was higher for leasee migrant farmers (Re. 0.32) as compared to that for local farmers (Re. 0.27). The main reason for higher transaction costs for leasee migrants was that they did not have any tractor-cum-trailers or pick up trucks and very few had two-wheelers (60%). The un-loading charges reported by the local farmers were higher as compared to those of leasee migrant farmers (table 5.10). The leasee migrant farmers obtained higher yields per acre in cauliflower (85 qtls.) than those by local farmers (81.11 qtls.). The leasee migrant farmers sold 23% of the produce to the ITC as compared to only 15.5% by the local farmers. The average price realization in cauliflower was higher in ITC channel as compared to the *mandi*. Although the leasee migrant farmers got lower prices both in ITC and *mandi* than those received by local farmers, but the net income in each channel in cauliflower was higher for leasee migrants due to their lower cost of production (table 5.11). Though our data deals with only *rabi* cauliflower crop for calculation of costs and returns, summer cauliflower despite being subject to vagaries of nature like high temperature, insect-pest attack, resulting into lower yields, and higher costs of production, gave higher returns due to higher price for cauliflower in summer. The price fetched in summer varied between Rs. 15-20/kg compared with only Rs. 1-6/kg. in winter.

**Table 5.10: Category-wise transaction costs of farmers in *mandi* for cauliflower (Rs./acre)**

Farmer category> Transaction costs	Leasee migrant		Local	
	(Re./kg)	Total (Rs.)	(Re./kg)	Total (Rs.)
Transportation cost	0.18	1530.0	0.12	973.3
Unloading charges	0.035	297.5	0.04*	324.4
Commission @ 2%	0.102	867.0	0.108	876.0
Marketing cost	0.32	2694.5	0.27	2173.8

Note: \*These charges differ as produce was meant for different markets.

**Table 5.11: Category-wise costs and returns of farmers in cauliflower (in Rs.)**

Farmers' category> Marketing channels> Costs and returns/acre	Leasee migrant		Local	
	ITC	Mandi	ITC	Mandi
%age of cauliflower sold to each channel	23.0	77.0	15.5	84.5
Quantity sold to each buyer (Kg/acre)	1955	6545	1257.2	6853.9
Price in each channel (Rs./kg)	5.4	5.1	5.5	5.4
Gross sales proceeds	10557	33379.5	6914.7	37010.9
Cost of production	6554.8 (3.35)	21944.5 (3.35)	4893.2 (3.89)	26675.9 (3.89)
Marketing cost	-	2074.8 (0.32)	-	1836.9 (0.27)
Cost of production and marketing	6554.8 (3.35)	24019.3 (3.67)	4893.2 (3.89)	28512.8 (4.16)
Net income in each channel	4002.2 (2.05)	9360.2 (1.43)	2021.5 (1.61)	8498.1 (1.24)
Net income	13362.4 (1.57)		10519.6 (1.30)	

Note: Figures in parenthesis indicate the costs and returns in Rs. per kg. of output.

## 5.5 Bottle gourd production and procurement

Bottle gourd, sowing is mainly done from late October to first week of November. The harvesting starts in February-March. The cost of production/acre in bottle gourd was also higher among local farmers (Rs.24871.5) as compared to that of leasee migrant farmers (Rs. 24541). In bottle gourd also, the leasee migrant farmers were mainly using family labor for farm operations as compared to use of mainly hired labor by local farmers. For leasee migrant farmers, land rent (21%), family labor (20%), and fertilizers and pesticides (15% each) accounted for major chunk of the production costs as compared with land rent (24%), hired labor (21%), and pesticide and fertilizer costs (14% each) for the local farmers (table 5.12). The transaction costs of leasee migrant farmers were lower than that of local farmers when bottle gourd was sold to ITC; and higher for leasee migrants when bottle gourds were sold to *mandi* (table 5.13).

**Table 5.12: Category-wise production costs of ITC farmers in bottle gourd**

Farmer category> Cost components (Rs./acre)	Leasee migrant	Local
Land rent	5277.8 (21.5)	6050 (24.3)
Land preparation	1666.7 (6.8)	970 (3.9)
Seed	1371.1 (5.6)	1050 (4.2)
FYM	1244.4 (5.1)	670 (2.7)
Fertilizer	3766.7 (15.3)	3460 (13.9)
Pesticide	3666.7 (14.9)	3550 (14.3)
Weedicide	411.1 (1.7)	695 (2.8)
Irrigation	1040 (4.2) 2600*	1112.5 (4.5) 2225*
Labour	Hired Family	5256 (21.1) 2058 (8.3)
Total cost of production	24541 (100)	24871.5 (100)

Note: Figures in brackets show % share in average cost of production in each category.

\* These figures show cost of irrigation for bottle gourd farmers in Panjokhra Sahib area (Haryana) only. The overall average cost figures include no costs of irrigation in the Lalru area (Punjab) where canal water and electricity for tubewells is free.

The average yield of bottle gourd was also higher in case of leasee migrant farmers (104 qt./acre) than those of local farmers (97.8 qtls.). The price realization in bottle gourd was higher in ITC compared to the *mandi* price. Both the categories of farmers obtained same price in ITC. Although, the leasee migrant farmers realised lower prices in *mandi* as compared to that received by local farmers, net income per kg in bottle gourd in each channel was higher for leasee migrants than that for local farmers (Rs. 1.74 for ITC and Rs. 1.24 for *mandi* as against Rs.1.53 and Rs.1.22 respectively) due to the lower cost of production of the former (table 5.14). Another study of the Malerkotla operations of the retail chain showed that the cost benefit ratio (gross returns/total cost of cultivation) of the 40 farmers who worked with the chain from 2005-2007 increased from 3.9 to 4.8 for tomatoes, onions, cucumber and brinjal. This was the result of decrease in costs from better use of inputs as well as higher prices for the produce (Misra, 2009a).

**Table 5.13: Category and channel-wise transaction costs of farmers in bottle gourd (Rs./acre)**

Farmers' category	Leasee migrant				Local			
	ITC		Mandi		ITC		Mandi	
Channel> Transaction costs	(Re./kg)	Total (Rs.)	(Re./kg)	Total (Rs.)	(Re./kg)	Total (Rs.)	(Re./kg)	Total (Rs.)
Cost of polythene bag	0.10	1040.0	-	-	0.12	1173.6	-	-
Transportation cost	-	-	0.17	1768	-	-	0.10	978
Unloading charges	-	-	0.035	364	-	-	0.04	391.2
Commission (%)	-	-	0.086	892.3	-	-	0.084	821.5
Marketing cost	0.10	1040	-	3024.3	0.12	1173.6	0.22	2190.7

**Table 5.14: Category-wise costs and returns of ITC farmers in bottle gourd**

Farmers' category> Marketing channels> Costs and returns/acre	Leasee migrant		Local	
	ITC	Mandi	ITC	Mandi
%age of bottle gourd sold to each channel	23	77	15.5	84.5
Quantity sold to each buyer (Kg/acre)	2392	8008	1515.6	8262.2
Price in each channel (Rs./kg)	4.2	3.9	4.2	4.0
Gross returns (in Rs.)	10046.4	31231.2	6366.8	33056.4
Cost of production (in Rs.)	5644.4 (2.36)	18896.6 (2.36)	3855.1 (2.54)	21016.4 (2.54)
Marketing cost (in Rs.)	239.2 (0.10)	2328.7 (0.29)	181.9 (0.12)	1851.2 (0.22)
Cost of production and marketing (in Rs.)	5883.6 (2.46)	21225.3 (2.65)	4037.0 (2.66)	22867.6 (2.77)
Net income in each channel (in Rs.)	4162.8 (1.74)	10005.9 (1.25)	2329.8 (1.54)	10188.8 (1.23)
Net income (in Rs.)	14168.7 (1.36)		12518.6 (1.28)	

Note: Figures in parenthesis indicate costs and returns in Rs./kg. of output.

Major reasons for selling to the retail chain were no transportation costs and saving of time of the farmers. Higher prices and free crates provided by ITC were the other major benefits reported by the farmers (table 5.15). On the other hand, major problems faced by farmers while selling in open markets like Ambala Cantt, Naraingarh and Chandigarh were: long time taken to dispose off the produce, non-purchase of the produce in the market sometimes, improper weighing, un-necessary deductions, excess commission, unloading charges, and

delayed payments. But, in retail channel, farmers sold the produce at farm gate reducing all their uncertainties and eliminating transaction costs.

Although ITC had not introduced any new technology in vegetables, but still farmers were of the view that it had made them quality conscious, fetching them higher prices. Rejection rates in the initial years of linking with the farmers were higher, but reduced to nominal over time. The farmers were also aware of the price of the produce to be sold to ITC in advance in contrast to the *mandi* where price was known to the farmers only after they brought the produce to the *mandi*. Moreover, selling of the produce to the ITC had given them an extra option to sell the produce, bargaining power in *mandi*, and reduced price uncertainties.

**Table 5.15: Distribution of farmers by reasons for selling to ITC (multiple responses)**

Reasons	%age of farmers reporting
No transportation costs	90.9
Time saving	81.8
Higher price	68.2
Providing crates to pack the vegetables	45.5
Improvement in the quality of the produce	22.7
Decrease in price risk	14.0

## 5.5 Quality, grading and rejections

Farmers across both categories sold bulk of their produce (about 80%) in *mandi* as ITC was procuring only 20% of the total produce. The rejection rate in ITC was 2.0%. The rejection rates also varied across the leasee migrant and the local farmers. The rejection rates of leasee migrant farmer produce were lower (1.7%) as compared to that of local farmers (2.25%). Thus, leasee migrant farmers were more quality conscious as compared with the local farmers while delivering produce to the retail chain. The rejection rate in tomato could reach as high as 50% and 80-90% in carrots. The rejection rate was lower in cabbage (5%) and higher in cauliflower (20%). The cauliflower sold to ITC was packed in crates which were provided free of cost by ITC. One crate carried 12-15 kg. of vegetable. Bottle gourd was also packed in crates, either loose or in polythene. One crate usually contained 20-25 kg. of bottle gourd. This process of selling vegetables through crates had not only reduced their cost of packing but also reduced the wastages.

In cauliflower, ITC preferred white, compact, disease and insect free, medium sized flower without any brown spots and exposure to sun light. In bottle gourd, it preferred light green skin with white flesh, tender, cylindrical bottle shaped gourds, harvested when 1.5-2 ft. long. About 55% farmers sold the graded produce to ITC and the rest of the produce in mandi. The remaining 45% farmers did not do any grading as they harvested according to the maturity of the crop. About 77% farmers were not satisfied in linking with ITC; other 23% farmers did not face any problem. The major problems faced were: low volumes procured (reported by 81%) and low price overtime (47%) which is known as ‘agribusiness normalization’ in contract farming literature. When ITC started the operations, it paid farmers Rs. 2/kg higher than the *mandi* price, but later, ITC provided only 10% premium on A grade produce only.

On the role of government/policy in F&V retail, many farmers (32%) were of the view that the government should promote retailing which would lead to higher demand for FFVs. Some farmers (23%) were also of the view that removing the middlemen could help them as only then malpractices prevailing in the market would go away (reported by 14% of the farmers). Fixing MSP for major F&Vs was also suggested by some farmers (18%). 3/4<sup>th</sup> of the farmers also suggested that retail chains should procure higher quantities of vegetables from growers to make them avoid middlemen and the open market. This could be possible only if retail chains open more outlets to create demand for their produce including opening low cost outlets like kiosks. Some of them also suggested companies encouraging co-operatives to reduce the costs of procurement (table 5.16).

**Table 5.16: Distribution of ITC farmers by their views on role of retail chain for supply chain improvement**

Role of ITC	%age farmers reported
Procure higher quantities of vegetables	72.7
Open more outlets to create demand for FFVs	18.2
Form small kiosks in city to cut costs	13.6
Form co-operatives to reduce costs of procurement	9.1

Note: These are multiple responses and do not add upto 100.

## 5.5 Summary

ITC's Choupal Fresh procured about 60% of F&Vs from mandi and 40% from farmers through the consolidator. The farmers were paid *mandi* price and 10% premium on A grade

produce. The consolidator was paid a net commission of Re. 0.37 per kg. of produce and Rs. 700/day to transport the produce from the field to the retail store in Chandigarh. About 54% of ITC farmers were associated for the last 1-2 years. Of the total farmers interviewed, 54.5% were local and rest leasee migrant farmers (45.5%). The migrant farmers did not have any owned land. The average operated area of retail chain farmers (9.91 acres altogether) and of the leasee and local farmers separately (8 and 11.5 acres respectively) which were higher than the average size of the operational holding at the state level -Punjab 9.36 acres and Haryana 5.26 acres (GoP, 2005).

Small farmers accounted for only 36% of the total growers the retail chain was working with. The proportion of small operators was higher among the leasee category (50%) but only 25% among local landholders compared with the proportion of small land marginal holders in the two states -Punjab 35.4% and Haryana 66.7%. The average income/month from dairying and off farm activities was higher in case of local farmers (Rs. 5417 and Rs. 2541 respectively) than that in case of leasee migrant farmers (Rs. 1200 and Rs. 250 respectively). But, leasee migrants on an average put about 60% GCA under vegetables compared to only about 23% in case of local farmers although cropping intensity across both categories was similar.

ITC procured about 23% of cauliflower and bottle gourd each from leasee migrant farmers compared to only 15.5% of cauliflower and bottle gourd each in case of local farmers. The rejection rate in ITC was only 2%. However, rejection rate of leasee migrant farmers' produce was lower (1.7%) as compared to that of local farmers (2.25%). The average yields were higher in case of leasee migrant farmers (85 qtls. in cauliflower and 104 qtls. in bottle gourd) than that in case of local farmers (81.11 qtls in cauliflower and 97.8 qtls. in bottle gourd). The farmers realized somewhat higher price in ITC channel (about Rs. 5.5/kg in cauliflower and Rs. 4.2/kg in bottle gourd) compared to that in mandi channel (Rs. 5.1-5.4/kg in cauliflower and Rs 3.9-4/kg in bottle gourd). Thus, both categories of farmers realized same price in ITC. However, leasee migrant farmers realized lower price in mandi as compared to that realized by local farmers. The average cost of production was higher among local farmers (Rs 3.89/kg) compared to that in case of leasee migrant farmers (Rs. 3.35/kg). The farmers did not incur any marketing cost (except the packing cost in polythene for bottle

guard) since the produce was picked from farm itself compared to that in mandi. The net income for each crop in each channel was higher for leasee migrant farmers than that for local farmers.

Major reasons for selling to ITC were: no transportation costs, time saving, higher price, getting crates without any cost to pack vegetables etc. However, about 77% farmers were not satisfied in linking with ITC. The major problems faced were: low volumes procured and low price overtime. On the role of government/policy on F&V retail, 32% farmers opined that government should promote retailing which would lead to higher demand for FFVs. About 73% of farmers suggested that it should procure higher quantities of F&Vs.

The above analysis shows that the chain worked largely with more resourceful and larger land operators –owners or leasees. It offered market price based procurement prices and procured only a limited proportion of the grower’s crop without any firm commitment and more on day to day basis. It made no provision for any input or other services and did not have any formal contract arrangement. The rejected produce was left for the farmer to dispose off elsewhere as the chain procured only A grade produce. The leasee farmers being professional vegetable growers had better yields as well as better quality produce. The chain was not able to make an impact on the growers as it was procuring too little because it was not able to sell the procured produce in the market where it faced competition from other retail chains and local vendors and farmer’s market. More recently, the chain has wound up its retailing and procurement operations in the region.

### **5.6 A comparative analysis of FFV retail chain operations across states**

The procurement operations of the retail chains differed in many ways with some directly picking up produce from farmer’s fields or villages (NF) while other procuring through local collection centres (ABRL and RF). Still others used intermediaries or consolidators who performed the task of procuring the produce and delivering it at the retail stores (ABRL and ITC). Similarly, while some had distribution or processing centres between collection centres and retail stores (ABRL, RF and NF), others directly reached the produce from farms to retail stores (ITC) (fig. 5.5).

**Figure 5.5: State-wise Procurement models of Various Retail Chains**

**Gujarat**

**RF/ABRL**

Farmer → CC → CPC/DC → Retail Store  
(Contact)

**Karnataka**

**ABRL**

Farmer → CC → DC → Retail store  
(Contact)

**ABRL (Consolidator)**

Farmer → CC-cum-DC → Retail Store  
(contract and contract)

**NF**

Farmer → DC/Pack house → Retail store

**Punjab and Haryana**

**ITC Choupal Fresh**

Farmer → Consolidator → Retail store

The retail chains across all states largely worked with the large farmers except NF in Karnataka. Some of the chains had no marginal or small farmer linkage (like ABRL, RF in Gujarat) while others had a lower proportion of such growers. Moreover, the average operated area of the chain farmers was higher than that of the state average. Only in case of NF in Karnataka, the farmers were similar to their non-NF counterparts (tables 5.17 and 5.18).

**Table 5.17: Category, Retail Chain and location-wise distribution of farmers**

State	Gujarat		Karnataka			Punjab/ Haryana
Retail chain> Farmer category	RF	ABRL	ABRL, Malur	ABRL, Belgaum	Namdhari Fresh	ITC
Marginal	-	-	1 (4)	2 (10.5)	5 (15.2)	-
Small	5 (17.9)	-	14 (56)	13 (68.4)	20 (60.6)	8 (36.4)
Semi-Medium	9 (32.1)	11 (50)	6 (24)	1 (5.3)	8 (24.2)	7 (31.8)
Medium	8 (28.6)	9 (40.9)	4 (16)	-	-	5 (22.7)
Large	6 (21.4)	2 (9.1)	-	3 (15.8)	-	2 (9.1)
All	28 (100)	22 (100)	25 (100)	19 (100)	33 (100)	22 (100)

Note: Figures in parentheses are % share of each category in total.

**Table 5.18: Landholding profile of Retail chain farmer v/s the state average (acres)**

Parameters> State/Retail chain	Average operated land	Leased -in land as %age of operated area*	Net cultivated area**	Average operated landholding
<b>Gujarat</b>				
RF	15.90	12.9 (7.2)	12.9 (81.4)	6.45
ABRL	14.74	4(-)	12.41 (84.2)	
<b>Karnataka</b>				
ABRL, Malur	7.46	2.9 (-)	5 (67)	4
ABRL, Belgaum	10.76	2 (4.8)	9.39 (87.3)	
NF	4.56	18.9 (-)	4.26 (93.4)	
<b>Punjab/Haryana</b>				
ITC	9.91	42.2 (17.1)	9.64 (97.3)	9.36(Punjab and 5.26 (Haryana)

Note: \* Figures in brackets are for leased out land. \*\*Figures in brackets indicate %age of net cultivated area in operated area.

In general, small holders put higher area under contact crops than those by larger holders, more so in Karnataka state across all chains. This reflects the generally higher vegetable crop intensity of the smallholders as well as their preference for a local buyer or pick up facility which was provided by the chains either by CC or farm pick up (table 5.19).

In Gujarat, RF and ABRL gave higher prices to the farmers compared to the *mandi* price. Moreover, marketing cost was also lower across both the chains. However, contact farmers in case of ABRL in Malur and Belgaum in Karnataka realized higher prices in the *mandi*, but due to the significantly lower marketing costs in the retail chain channel, farmers realized higher net income in the retail chain channel compared to that in *mandi* channel. The consolidator in Belgaum in Karnataka gave higher prices to the contract farmers compared to those given to the contact farmers. Also, marketing costs in case of contract farmers were lower than that in case of contact farmers as the former were resource rich. In case of NF, retail chain farmers received lower prices compared to the *mandi* price and had higher cost of production compared with that of the non-NF farmers. But, since the produce was picked from the farm, the NF farmers did not incur any marketing costs and, hence, realized higher net returns. ITC in Punjab and Haryana also gave higher price for the produce and picked the produce from farm itself which resulted into higher net income in the retail chain channel as compared to that in *mandi* channel. Although, the leasee migrant ITC farmers had realized lower prices in comparison to the local farmers, but they had lower cost of production and hence, realized higher net income as compared to that realized by local farmers (table 5.20).

**Table 5.19: Cropping pattern of retail chain farmers across states, chains, and farmer categories**

State	Gujarat				Karnataka								Punjab/Haryana			
	RF		ABRL		ABRL, Malur		ABRL, Belgaum				NF		ITC		Leasee migrant	
Retail chain> Type of linkage/ farmer							Contact		Contract				Leasee migrant		Local	
Crop category > Farmer category	Contact	Non-contact	Contact	Non-contact	Contact	Non-contact	Veg.	Other crops	Veg.	Other crops	Contract	Non-contact	Veg.	Other crops	Veg.	Other crops
Marginal	-	-	-	-	100	-	85	15	-	-	87	13	-	-	-	-
Small	75	25	-	-	89	11	77	23	75	25	75	25	67	33	25	75
Semi-Medium	65	35	77	23	61	39	-	-	70	30	74	26	64	36	25	75
Medium	51	49	67	33	64	36	-	-	-	-	-	-	49	51	20	80
Large	29	71	50	50	-	-	-	-	70	30	-	-	-	-	16	84
All	47	53	67	33	77	23	78	22	72	28	75	25	60	40	23	77

**Table 5.20: Location, retail chain and crop wise costs and returns of farmers (Rs./kg)**

Parameter> Chain/ State/location/ crop/channel	Vegetable	Channel	Price	Cost of production	Marketing cost	Net income	Overall Net income	
<b>RF</b>								
Gujarat	Cauliflower	RC	7.02	2.32	0.15	4.55	3.86	
		<i>Mandi</i>	6.41	2.32	0.70	3.39		
	Cabbage	RC	4.57	2.32	0.20	2.05	1.63	
		<i>Mandi</i>	4.38	2.32	0.70	1.36		
<b>ABRL</b>								
Gujarat	Cauliflower	RC	3.60**	2.21	0.28	1.11	0.72	
		<i>Mandi</i>	3.50	2.21	0.78	0.51		
	Tomato	RC	4.40	1.99	0.41	2.00	1.31	
		<i>Mandi</i>	3.80	1.99	1.15	0.74		
Malur, Kolar (Karnataka)	Cauliflower*	RC	5.20	2.02	0.26	2.92	2.65	
		<i>Mandi</i>	5.60	2.02	1.33	2.25		
	Tomato	RC	3.10	1.73	0.23	1.14	1.00	
		<i>Mandi</i>	3.55	1.73	0.91	0.91		
Contact, Belgaum (Karnataka)	Cauliflower*	RC	3.80	1.93	0.88	0.99	0.59	
		<i>Mandi</i>	3.90	1.93	1.52	0.45		
	Tomato	RC	3.20	1.74	0.40	1.06	0.79	
		<i>Mandi</i>	3.50	1.74	1.06	0.70		
Contract, Belgaum (Karnataka)	Cauliflower*	RC	4.80	2.76	0.73	1.31	1.20	
		<i>Mandi</i>	4.40	2.76	1.41	0.22		
	Tomato	RC	3.75	2.33	0.24	1.18	1.07	
		<i>Mandi</i>	3.55	2.33	0.90	0.32		
<b>NF</b>								
Contract (Karnataka)	<i>Bhindi</i>	NF	9.69	6.67	-	3.02	-	
		Non-NF	10.00	5.74	2.00	2.26		
	Baby corn	NF	6.5	3.80	-	2.73	-	
		Non-NF	7.8	3.66	1.78	2.36		
<b>ITC</b>								
Leasee Migrant (Punjab/Haryana)	Cauliflower	RC	5.40	3.35	-	2.05	1.57	
		<i>Mandi</i>	5.10	3.35	0.32	1.43		
Local		RC	5.50	3.89	-	1.61	1.30	
		<i>Mandi</i>	5.40	3.89	0.27	1.24		
Leasee Migrant	Bottle gourd	RC	4.20	2.36	0.10	1.74	1.36	
		<i>Mandi</i>	3.90	2.36	0.29	1.25		
Local		RC	4.20	2.54	0.12	1.54	1.28	
		<i>Mandi</i>	4.00	2.54	0.22	1.23		

Note: \* Costs and returns for cauliflower in Karnataka are Rs./flower. \*\* the prices are lower here as the survey was carried out during winter season for this chain as against that in summer season for RF, both in Gujarat.

## **Chapter 6**

### **Alternative F&V Retail Chains - Cases of HOPCOMS and SAFAL**

#### **6.1 Introduction**

This chapter describes and analyses the experience of alternative marketing channels for primary producers as they existed in the pre-supermarket expansion period and still co-exist with modern private sector retail chains. It documents the operations and performance of the two major interventions in the F&V retailing which are similar to the modern retail chains but differ in their ownership and organizational structure.

#### **6.2. HOPCOMS - organization and management**

HOPCOMS was established as ‘The Bangalore Grape Growers’ Cooperative Marketing and Processing Society Ltd.’ (BGGCOMS) on 10<sup>th</sup> September, 1959. The BGGCOMS started handling F&V produce apart from grapes in 1965. In 1983, the name of the BGGCOMS was changed to ‘The Bangalore Horticultural Producers’ Cooperative Marketing and Processing Society Ltd.’ (BHOPCOMS) and subsequently in 1987, it became HOPCOMS (Subrahmanyam and Gajanana, 2000). The district-level HOPCOMS were spun-off as independent units in 1997. As of 2007, there were 17 HOPCOMS in Karnataka each working independently within demarcated districts of operation. The major objectives of HOPCOMS are: (i) to ensure remunerative prices to producers of horticultural crops; (ii) to free both producers and consumers from the clutches of middlemen; (iii) to ensure quality supply of F&V at reasonable prices to consumers; (iv) to expand marketing and cold storage facilities progressively for the benefit of farmers; and (v) to promote horticultural development on scientific lines by providing inputs and necessary technical advice (Kolady, et al, 2007).

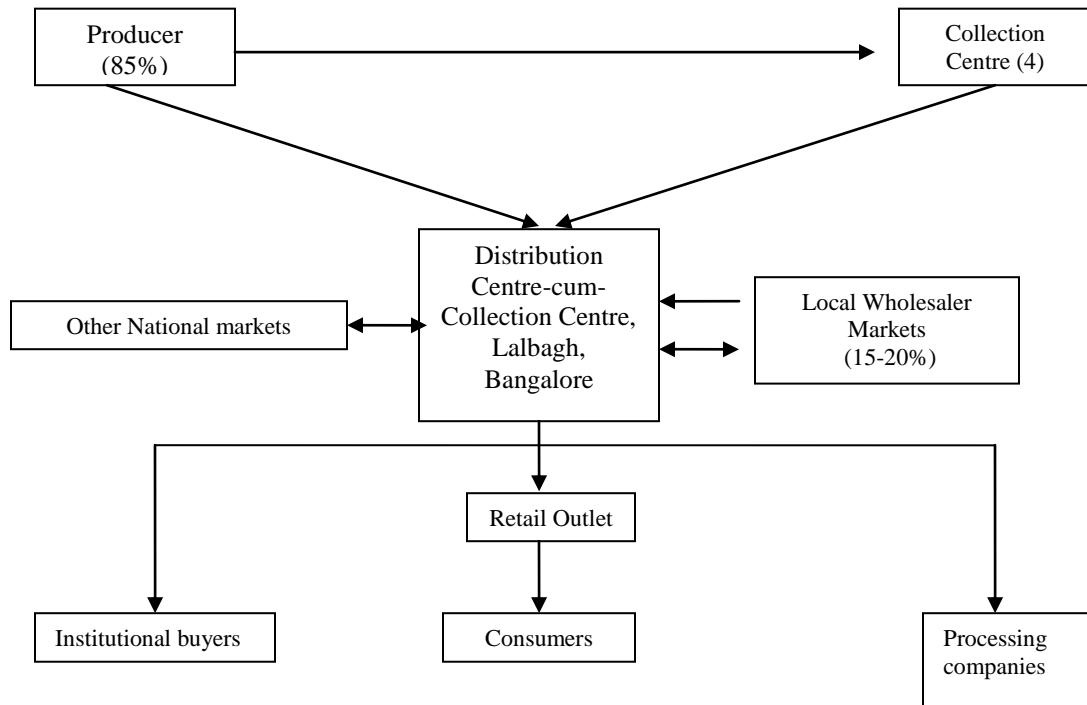
The membership of HOPCOMS is comprised of four categories: A, B, C and D. Class A comprises of farmer/producer members with 4% share in equity. The associate members which include: NGOs, other co-operatives, National Co-operative Development Corporation (NCDC) and National Horticultural Board (NHB) together constitute Class B which has a share of only 1%. The Class C which was earmarked for Government of Karnataka constitutes 95% shares of HOPCOMS. The Class D had traders and commission agents and

had very marginal share in HOPCOMS equity. The HOPCOMS had 15,000 members with a total paid up share capital of Rs. 258.54 lakh in 2005 of which government share was Rs. 228.09 lakh. HOPCOMS is under the aegis of the Department of Horticulture, Karnataka managed by a Board consisting of 20 members: 11 elected from ‘A’ class (producers), five government nominees and four government officers. The President and the Vice President are elected from among the elected producers. The Managing Director is an officer of the Department of Horticulture, Karnataka, whose services are lent to HOPCOMS. Different *Zilla Parishads* had provided Rs. 11.57 lakh to strengthen and expand the activities of HOPCOMS. For various development programmes, NHB had provided Rs. 28.18 lakh as grant and Rs. 1.08 lakh as loan. The entire amount had been utilized to strengthen and develop HOPCOMS and the loan amount had been repaid. The NCDC sanctioned a project for Rs. 448 lakh to expand the activities of HOPCOMS by opening central godowns, Collection Centres (CCs), retail outlets, processing units and for purchase of transport vehicles. The loan amount of Rs. 215 lakh from NCDC had been repaid with interest. During 2007-08, HOPCOMS had a turnover of Rs. 48 crore (HOPCOMS website).

### **6.2.1 Procurement system of HOPCOMS**

HOPCOMS procured F&Vs both from farmers (members as well as non-members) and the open market. On receiving the indent from HOPCOMS, producers brought their produce on their own either at CC or directly at the Distribution-cum-Collection Centre (DC-cum-CC) (fig. 6.1) (Subrahmanyam and Gajanana, 2000). The decentralized CCs also acted as outlets for agri-inputs like manure, fertilizers, hybrid seeds, fungicides etc. (Kolady et al, 2007). In case of Bangalore HOPCOMS, Lalbagh was the biggest DC-cum-CC which accepted quantities ranging from 30-40 kgs to as large as 750-900 kgs. The other CCs accepted quantities varying from 20-30 kgs. to 150-200 kgs. The Mysore HOPCOMS’ scale of operation was about 1/10<sup>th</sup> that of Bangalore as the latter had four CCs and 318 retail outlets compared to Mysore’s one CC and 40 retail outlets. HOPCOMS bore the unloading charges and made payment to the producers immediately after procurement up to Rs. 5000 in cash and, if it exceeded Rs. 5000, then by cheque (Kolady, et al 2007).

For transporting the produce to CC-cum-DC, HOPCOMS charged a transport cost of Re. 0.1-0.2 per kg. of produce. In the initial years of its inception, HOPCOMS procured only 35-40% of F&Vs from the producers which increased to nearly 85% by the end of 1990s (Subrahmanyam and Gajana, 2000). Presently, Bangalore HOPCOMS handles around 100 metric tonnes of F&Vs every day (HOPCOMS website).



**Figure 6.1: HOPCOMS Operations in Karnataka**

The procurement prices were announced for the day based on the prevailing market prices that morning at four or five reference *mandis* (Kolady et al, 2007) and an additional half rupee/kg was added to the weighted price (Premchander, 2002). Further, HOPCOMS paid 70-75% of the consumers' price to the growers as compared to 43% paid by regulated/wholesale markets. The price paid to the farmers in general was 10-15% higher than the open market prices. Further, during distress sales, HOPCOMS assured a minimum support price for the produce. Since HOPCOMS had weigh-bridges at each CC, farmers were assured of correct weighment. HOPCOMS also had infrastructure facilities like cold storage and godowns to store the produce. The CCs also had some space where the farmers could keep their produce (watermelons) and sell directly to consumers (Premchander, 2002).

HOPCOMS also procured 15-20% of the F&Vs from the local markets to meet the requirements of the bulk buyers like government hospitals, hostels, factories etc. (fig. 1). However, though this helped it to meet its commitments, it paid a higher price for F&Vs whenever it resorted to market purchases. The price differential was as high as Rs. 4-6/kg. for fruits and Re. 1/kg. for vegetables. Thus, on an average, it incurred a loss of Rs. 3/kg. of produce by purchasing from the market. In addition to procurement from producers and the market, HOPCOMS also procured small quantity of the produce from the other states and agencies like NAFED, HPMC, Safal Wholesale Market, Bangalore, GROWREP, Delhi, and VEFCO, Nasik. The procurement of F&Vs was made on consignment basis (Subrahmanyam and Gajanana, 2000).

Though HOPCOMS did not classify F&Vs into grades, it maintained quality by accepting only good quality produce from the growers. It rejected injured, damaged and diseased fruits. In banana, HOPCOMS rejected the rotten fruits and fruits with bruises and rough handling. Cracked and blackened fruits due to over-ripening were also rejected (Murthy et al, 2007). Earlier, HOPCOMS deducted 20-30% of the produce of the growers towards driage and wastage while making payments. By 2000, the practice of physical quantity deduction was completely stopped. In case of cabbage, payment was made only after the entire quantity was sold so as to account for the loss in quantity due to driage (Subrahmanyam and Gajanana, 2000). Driage and wastage was around 4-5% of the total procurement of the produce. However, it reduced to 1.85% in 2000-01 (Premchander, 2002). However, another recent study, revealed that proportion of produce rejected at HOPCOMS was 4.39%; the maximum being as high as 66% and minimum being nil (Kolady et al, 2007). 77.1% of the HOPCOMS farmers reported that they sold the rejected the produce elsewhere at lower price, 11.4% each either threw away the rejected produce or HOPCOMS discarded it (Kolady et al, 2007).

### **6.2.2 Processing and retailing**

Besides retailing, HOPCOMS prepares juice from grapes, mango, orange, apple etc. at Bangalore, Mysore and Mangalore branches and sells in bottles of 200 ml in their retail outlets. Although with the opening up of the CCs, there was an increase in the supply of fruits, a corresponding increase was not observed in their processing and juice sales had

remained at around Rs. 20 lakh, accounting for hardly 1% of the total sales of HOPCOMS. Juice fetched a higher margin (37%) than any other activities of the HOPCOMS (Subrahmanyam and Gajanana, 2000). HOPCOMS sells juice at Rs. 6 per 200 ml bottle (HOPCOMS website). Infact, the turnaround of Mysore HOPCOMS from a loss making entity to a profit making one happened due to revenue from the sale of fresh juice (Kolady, 2007).

HOPCOMS accounted for 6-10% of the horticulture trade in Bangalore (Kolady et al, 2007). The retailing of the F&Vs was carried out through the 504 retail outlets, of which 231 were in different localities of urban Bangalore, 114 in rural Bangalore, and the rest in other districts of Karnataka (Photo 6.1). The quantity of F&Vs sold/day was over 500 metric tonnes (Premchander, 2002). These outlets were run by the salesmen of HOPCOMS who received 3.7% commission (Subrahmanyam and Gajanana, 2000). On an average, the number of employees per retail outlet was 2; one of them was a permanent employee and other being an assistant on temporary roll. The outlets worked between 10.30 am and 8 pm with a break in the afternoon. Most of the HOPCOMS outlets were owned (Kolady et al, 2007). The Bangalore HOPCOMS reported a net profit of Rs one crore (Business Standard, 15<sup>th</sup> August, 2008). The F&Vs constituted 91% of the total sales while the agri-inputs accounted for 8-10% of the total sales of HOPCOMS (Subrahmanyam and Gajanana, 2000; Premchander, 2002). The daily operating expenses of HOPCOMS were around Rs. 10 lakh and cash handled was of the order of Rs. 20 lakh a day, including all other operating expenses like transport cost (Premchander, 2002).



**Photo 6.1: A retail outlet of HOPCOMS in Bangalore**

The Bangalore HOPCOMS sold about 71% of vegetables procured and 79% of fruits procured through the retail outlets. The profit earned by HOPCOMS was Rs. 2.84/kg in 2000-01. The retail price was a fixed mark-up on the procurement price and was same across all the outlets (Kolady et al, 2007). HOPCOMS had an approved policy of fixing the procurement price slightly higher than the prevailing wholesale price and retail price at a slightly lower level than the ruling retail price so as to maintain a margin of 25% (Subrahmanyam and Gajanana, 2000). The HOPCOMS retail prices were 18% lower than that of the traditional retailers and 10-25% lower than other modern retailers (table 6.1). The supplies to the retail outlets were made through 19 owned and 40 hired vehicles. The mobile sale of F&Vs was also done at places where the HOPCOMS did not have any retail outlet.

**Table 6.1: Procurement and retail prices of HOPCOMS and organized retail outlets (Rs./kg) (as on 02.02.2009)**

Price> F&Vs	Procurement Price of HOPCOMS	HOPCOMS retail Price	Organized retail price	HOPCOM price as % of organized retail price
Banana	16.50	22	27	81.5
Apple	52.50	70	80	87.5
Sweet Lime	28.5	38	33.9	112.1
Grapes	26.25	35	44	79.5
Beans	13.50	18	27	66.7
Bhindi	14.25	19	26	73.1

Source: field survey

### 6.2.3 HOPCOMS farmer interface

About 77% of the farmers working with HOPCOMS were marginal or small as compared to 69% of the total farmers in south Karnataka region being so (table 6.2). Further, about 22% of the HOPCOMS farmers were semi-medium and only 1% large; lower than the overall average for south Karnataka (29% and 1.7% respectively). Thus, HOPCOMS not only included small and marginal farmers but had their over-representation compared with the south Karnataka context. The average cultivated area was higher in case of non-HOPCOMS farmers (4.8 acres) as against HOPCOMS farmers (4.5 acres). Furthermore, HOPCOMS farmers delivering the produce at the CCs were located at an average distance of only 27.2 kms. compared to the higher distance of *mandi* in case of non-HOPCOMS farmers (43.1

kms.) (Kolady et al, 2007). The HOPCOMS farmers did not pay any commission while non-HOPCOMS farmers, on an average, had to pay about 9.4% commission in *mandi*.

**Table 6.2: Category-wise distribution of HOPCOMS, Non-HOPCOMS and South Karnataka farmers (% of total )**

<b>Farmer category</b>	<b>South Karnataka</b>	<b>HOPCOMS</b>	<b>Non-HOPCOMS</b>
Marginal	41.9	32.18	37.4
Small	27.3	44.83	34.34
Semi-medium	28.9	21.84	22.22
Large	1.7	1.15	1.01

Source: Kolady et al (2007)

About 92% of HOPCOMS farmers were of the view that the price realized was fair as compared to that reported by 78% of the non-HOPCOMS farmers. The average transaction cost/cultivated land was also higher among the non-HOPCOMS farmers (Rs. 596) compared to that among the HOPCOMS farmers (Rs. 320). Moreover, the transaction cost to revenue ratio was lower in HOPCOMS farmers (0.45) as compared to 0.72 in case of non-HOPCOMS farmers. The average transaction time was 2 hours in case of HOPCOMS compared to 3 hours and 20 minutes in case of non-HOPCOMS farmers. The HOPCOMS farmers did not pay any commission while non-HOPCOMS farmers, on an average, had to pay about 9.4% commission in *mandi*. Furthermore, 67% of the non-HOPCOMS farmers were in debt as compared to that reported by the HOPCOMS farmers (51%); although the average amount of debt/acre of cultivated area was higher among HOPCOMS farmers (Rs. 10722) than that among the non-HOPCOMS farmers (Rs.5718) (table 6.3).

**Table 6.3: Costs and benefits for HOPCOMS and non-HOPCOMS farmers**

<b>Farmers category&gt;</b>	<b>HOPCOMS</b>	<b>Non-HOPCOMS</b>
%age of farmers who got “fair” price	92	78
Average transaction cost/cultivated land (Rs.)	319.8	596.1
Transaction time	Average	2 hrs
	Maximum	4 hrs
	Minimum	10 minutes
Average commission paid	-	9.4% (65% said 10%)
Transaction cost to revenue ratio	0.45	0.72

Source: Kolady et al, 2007.

About 25% of the farmers also used other services of HOPCOMS like sales yard, bought seeds, fertilizer/manure and pesticide/insecticide. Further, about 72% of the HOPCOMS farmers were satisfied with the working of the HOPCOMS. Only 17.5% farmers reported that HOPCOMS procured only limited quantity of F&Vs due its lower indent, 11.25% reported high quality standards maintained by it, 6.25% reported the lack of the proper weighing machines and 2.5% reported that all the crops were not accepted and large scale farmers were treated better (Kolady et al, 2007).

Further, in case of banana (variety *Ney-poovan*), the post-harvest losses were as high as 28.84% in the non-HOPCOMS (wholesale) channel (regulated banana market at Binny Mills, Bangalore) compared to that only 18.31% in HOPCOMS channel (table 6.4). Procurement of quality produce and rejection of substandard produce by HOPCOMS were the major reasons for higher losses at assembly level. Losses at wholesale and retail stages in the wholesale channel accounted for 23% and 58%, respectively, compared to 10% and 48% in HOPCOMS respectively. The reasons for lower losses at later stages in HOPCOMS were: better loading and transportation, less handling and acceptance of good quality produce at the time of procurement. The marketing cost was higher in the wholesale channel (Rs 4.36/kg) compared to only Rs 1.30/kg in the HOPCOMS. Further, the %age share of the marketing cost in the consumers' rupee was only 10% in case of HOPCOMS as compared to 27.5% in case of the wholesale channel (table 6.5).

**Table 6.4: Post-harvest losses in banana at different stages in Karnataka**

Channel>	Wholesale		HOPCOMS	
Losses> Stages of marketing	Post-harvest losses (%)	%age to Total losses	Post-harvest losses (%)	%age to total losses
Field and assembly level	5.53	19.17	7.82	42.71
Wholesale level	6.65	23.06	1.77	9.67
Retail level	16.66	57.77	8.72	47.62
Total	28.84	100.00	18.31	100.00

Source: Murthy et al (2007)

**Table 6.5: Banana Marketing cost (Rs./kg) and share in consumers' price in wholesale and HOPCOMS channels**

Channel>	Wholesale	HOPCOMS
Farmers	3.64 (83.5)	0.57 (43.8)
Wholesalers	0.21 (4.8)	0.73 (56.2)
Retailers	0.51 (11.7)	-
Total	4.36 (100.0)	1.30 (100.0)
Share in the consumer's price (%)	27.53	10.0

Source: Murthy et al (2007)

The net price realized by the banana farmers was higher in case of HOPCOMS (Rs. 8.68/kg) than that in the wholesale channel (Rs. 8.36/kg). The producers' share in the consumer's rupee stood at 61.23% in HOPCOMS while it was only 48.61% in the wholesale channel, after accounting for the losses in both the channels. The marketing efficiency was also higher in the HOPCOMS channel than that in the wholesale channel both before and after the separation of losses, mainly due to the higher price realization by farmers in HOPCOMS as a result of the lower marketing costs (table 6.6).

**Table 6.6: Farmers' net price, margins, efficiency and price spread in banana in Karnataka**

Parameters ↓	Farmer net price before losses		Farmer net price after losses	
	Wholesale	HOPCOMS	Wholesale	HOPCOMS
Channel>				
Farmers net price	8.36	8.68	7.70	7.96
Wholesaler's margin	1.79	3.22	0.86	1.92
Retailers margin	1.33	-	-1.31	-
Marketing efficiency	1.12	2.01	0.95	1.58
Price spread (Rs./kg)	7.48	4.32	8.14	5.04
Consumers' price Rs./kg)	15.84	13.00	15.84	13.00
Producers' share in consumers' Rupee	52.78	66.77	48.6	61.2

Source: Murthy et al (2007)

The inclusion of smallholders was possible in HOPCOMS as i) there was decentralized procurement which had reduced transactions costs of HOPCOMS farmers as it had

established procurement centres near to the farmers' field and acted as a consolidator helping to scale up the transactional size of smallholders; ii) an indent system had put ceiling on quantities of F&V to be procured from each producer which acted as a disincentive to large-scale farmers or those who transact large volumes at a time; iii) most of the time, indent of HOPCOMS was lower but sufficient enough for smallholders; iv) pre-announced fixed price discouraged smallholders from selling in *mandi*; v) the minimum eligibility to become a member of HOPCOMS was to make a contribution Rs. 100 towards the share capital and render the proof of land holding. Thus, it was possible for small and marginal farmers to become members of HOPCOMS. In fact, HOPCOMS had even reserved 5% of its farmer-membership exclusively for women; vi) sale of inputs at procurement centres made HOPCOMS one stop-shop for different needs. This improved smallholder access to inputs as well as reduced the cost of input procurement; and vii) HOPCOMS also accepted produce from non-members and tenant-cultivators (Kolady et al, 2007).

### **6.3. SAFAL-organisation and management**

MDFVL, an enterprise of the National Dairy Development Board (NDDB)- an autonomous body of the Government of India for promoting dairy development in India, was originally set up in 1972 to procure and distribute liquid milk in major cities of India and now runs 265 F&V retail outlets in Delhi called 'Safal' since 1988 (ADB and IFPRI, 2009). *Safal* was the first organised retail chain for F&Vs in India in recent times. It is preceded only by Nilgiris and Spencer's in south India. *Nilgiris*, established in 1905 as a dairy farm near Ootacamund in South India which was the first organised supermarket in India which opened a store in Bangalore in 1936 and another one at Erode (TN) in 1962. Nilgiris currently has more than 90 stores under the brand name "Nilgiris 1905" (Sulaiman et al, 2010).

Safal, registered as a company now as MDFVL is also into national marketing of fresh, frozen and processed F&Vs under Safal brand. Safal has Central Distribution Facility (CDF) for handling 100,000 MT of fresh produce (F&V). It also has a 100% export oriented fruit processing plant in Mumbai since 1996. Safal also undertook and supported: (i) production enhancement activities at farm level (ii) improved pre- and post-harvest practices (iii) efficient logistics from farm to the retail outlets (iv) minimum handling and scientific quality

assurance and (v) education of grower, support staff, and consumer. Safal handled approximately 200 tonnes of F&V everyday including 20 tonnes of tomatoes from Uttarakhand federations' collection centres alone daily (MDFVL, n.d.; ADB and IFPRI, 2009).

It procured fresh produce directly from 75 Growers' Associations (GAs) with more than 15000 growers in north Indian states of Haryana, Uttarakhand, U.P. and Punjab. Growers assembled their produce at a CC established at a central location within a cluster of villages in the production belts where it was sorted, graded and repacked conforming to quality and packing specifications. In case of any shortfall, produce was also procured from the wholesale markets in Delhi and other supplying agencies. The produce was weighed and dispatched in specially designed plastic crates. The use of crates reduced losses during transportation and reduced the cost of packaging by 70%. The produce was delivered either by the grower or entrusted to a professional transporter. The transport routes were developed in such a manner that maximum available capacity of the vehicle was utilized. More than 90% of the supply was organized through professional transporters. After deliveries, transporter took empty crates back to the GAs, so that they must be able to move the produce, the next day too. Batch making and distribution staff of Safal ensured that more than 70% of indented quantity of various F&Vs required by the retail outlets was supplied in the early morning. To replenish the retail outlets with fresh produce for afternoon buyers, around 30% of the indented quantity was supplied in the afternoon. The post harvest losses at Safal ranged between 5-7% (MDFVL, n.d.).

Based on a projected consumers demand, a crop plan was prepared for the farmers considering specific production patterns and agro climatic conditions. To realize this, Safal provided growers with professional advice and supply of good quality, high yielding seeds and seedlings, advice on integrated pest control management and good agricultural practices, support and supplied bio pesticides and agri-implements. The company also introduced the hybrids in chili, brinjal, bottle gourd, bitter gourd, okra, cabbage and French beans and pneumatic direct seeder for onion, carrots, radish, cabbage and cauliflower which reduced the nursery raising cost, increased yields and quality (MDFVL, n.d.).

### **6.3.1 Processing and retailing**

After the arrival of the produce at CDF, a receipt of the produce at the reception dock was generated. The produce was then weighed at the weighbridge which was automatically recorded. Random samples were checked for weight and quality while crates were being unloaded. The computer allocated vacant space in the storage chambers considering optimum required temperature and humidity for an item. As soon as the consignment notes had been entered into the computer system, plastic crates were moved using electro-mechanical conveyors to the dispatch hall which had an optimum climate that ensured the quality was preserved. Batches for individual retail outlets containing different items (at least three outlets per vehicle) were arranged near the 19 doors in the dispatch hall. The space was allocated based on First-in-First-out basis. The demand for all the retail outlets for the day was consolidated using computer. Based on demand, the total requirement for various items and related grades was determined. The quality of different items was inspected before the produce was allowed to be put in the dispatch hall. The produce was then sorted, graded and finally batches were made for dispatch to the retail outlets. Loading took place from a dispatch hall having facility for loading about 38 vehicles at a time. The CDF had nine sorting/grading lines for mechanical sorting and grading (MDFVL n.d.).

The retail outlets were specially designed, consumer friendly and were located in major residential areas in and around Delhi and Bangalore (Photos 6.2 and 6.3). A deep freeze unit was also installed at every retail outlet. The F&Vs inside the outlet were displayed in specially designed display racks. Electronic cash register-cum-weighing scale was provided in each outlet. The outlets remained open for ten hour a day and operated for seven days a week. About 95% of the F&Vs were sold on the same day. Part of perishable items was put into the cold room. Transporter collected empty crates of the previous day supplies. The estimated quantities required for next day were also sent to the CC through transporters (MDFVL, n.d.).

View of F&V outlet



Photo 6.2: Mother Dairy F&V Outlets (Safal) in Delhi



Photo 6.3: A view of MDFVL (Safal) outlet in Bangalore

### 6.3.2 Safal farmer profile and interface

In 2001, the farmers were organized into six federations across 80 villages in Uttarakhand, by an NGO (Himalayan Action Research Centre (HARC)) which supply off-season vegetables (mainly tomatoes) to MDFVL through a purchase agreement with the federations. Although the farmers' federations in Uttarakhand and MDFVL had a legal relationship, the farmers were not contractually obliged to sell to it. Many farmers were selling tomatoes to both

MDFVL and private buyers in Uttaranchal. Similarly, MDFVL was not obliged to buy a fixed quantity of tomatoes from the farmers. The quantity to be purchased was determined every year through negotiations between the federations and the MDFVL. In order to supply to MDFVL, a farmer must be the member of a farmers' federation. Tomatoes were brought by farmers to designated collection centres, which were managed by an employee/volunteer of the federation. The farmers graded tomatoes at the collection centre according to the quality parameters provided by MDFVL and monitored by a federation representative. After grading, tomatoes were packed in plastic crates provided by MDFVL which reduced losses during transportation and the cost of packaging by 70%. The farmers were selling only about 30% of their tomatoes to MDFVL in 2006 with the rest being sold to private traders in or outside the mandi as the federations had 16 registered traders. Some of the traders and Commission Agents have local consolidators for collection of produce who work on commission basis (ADB and IFPRI, 2009).

The federations provided the following services to their member farmers:

1. Preparation of an annual production plan and negotiation of supply targets with MDFVL.
2. Organization of the procurement of vegetables at their collection centres.
3. Monitor the grading of produce before it is packed at the collection centres.
4. Act as a mediator between farmers and MDFVL.
5. Provide packaging crates on rent.
6. Sell agri-inputs to members.
7. Receive payment from MDFVL and pass them on to farmers.
8. Arrange for farmers' training.
9. Arrange to sell farmers' surplus vegetable production to private traders when MDFVL was unable to purchase farmers' produce during peak season.
10. Charge Rs 2 for every 10 kilograms of produce sold through them for the relief fund to assist growers during natural calamities.

The federations received income from the following activities:

- a. A one-time membership fee of Rs.250.

- b. A 1.75% transaction fee from MDFVL.
- c. A service fee (5% of transaction value) charged to members for bulk purchases of seeds, fertilizers, pesticides and other inputs from agri-input companies.
- d. Renting of plastic crates at Rs.1/crate per day to members and at Rs.2 for non-members.
- e. Reimbursement of mandi fee of 2.5% from MDFVL.

The farmers who supplied to MDFVL in Uttarakhand had larger landholdings (3.25 acres) than the non-MDFVL farmers (2.8 acres). 17% of the MDFVL farmers had more than 5.5 acres, compared with only 5% of the non-MDFVL farmers. However, the proportion of farmers with small landholdings (up to 2.25 acres) was similar in both groups of farmers (Alam and Verma, 2007).

MDFVL tomato farmers incurred higher cost on pesticides (Rs.3780/acre) compared to that by non-MDFVL farmers (Rs. 2050/acre). Before MDFVL entered the market, farmers sold in the Dehradun wholesale market at Rs 3-6/kilogram only. The cost of packaging and transporting 12 kilograms of tomatoes (contained in a standard container) to the Dehradun market was Rs. 32. The sale price of a container of tomatoes varied between Rs. 36-72. Farmers also paid a commission of 6%. Thus, farmers realized a maximum net profit of Rs. 4/kilogram. Sometimes, due to the glut in the market, farmers could not even recover the costs of packaging and transportation. However, MDFVL guaranteed to a minimum price of Rs. 6/kilogram during the first year of its operation. The actual payments received were around Rs. 8.50/kilogram after deducting the cost of transportation and packaging. The MDFVL supplying tomato farmers had higher profits (31,999/acre) compared to that of the non-MDFVL farmers selling to private traders (Rs 20,388/acre); mainly due to the lower cost of marketing incurred by MDFVL farmers (Re. 0.14/kilogram) as against that while selling to private dealers (Rs.1.83/kilogram). Non-MDFVL farmers paid higher transportation costs and incurred commission charges in *mandi* unlike MDFVL farmers who did not pay any commission, and received post transportation-cost deduction price. With the introduction of reusable plastic crates, farmers saved on high costs on wooden crates used for packaging and transportation. Following MDFVL, private traders of tomato also started to provide farmers with plastic crates. The rejection rate for some federations was as high as 50-60% in 2006

due to small size of fruit and pest infection and long distance transport of produce to Delhi where final quality check was done. Besides, poor grading by farmers deliberately and lack of supervision led to high rejections although it was also stated that sometime rejections were deliberate to avoid oversupply (Alam and Verma, 2007; ADB and IFPRI, 2009).

The major reasons for which farmers sold to MDFVL were: transparent pricing mechanism wherein prices are based on Delhi wholesale market minus transport cost to Delhi from local areas, higher price than locally available price from other buyers, no differentiation of price across lots or farmers, fair weighment, timely and regular bank payments (ADB and IFPRI, 2009). But, 39% of farmers opined that Safal should fix the price in advance; 35% were of the view that the grading norms should be relaxed to reduce rejection rates. Another 34% farmers opined that Safal should procure all of their produce (Alam and Verma, 2007; ADB and IFPRI, 2009).

Another set of farmers of Safal (MDFVL) involving two producers' associations, one in rural Delhi and the other in Sonepat district of Haryana, attained substantially higher net profits in spinach (78%) than that by the non-Safal farmers. The cost of spinach production of contract farmers was lower by 26% than that of their non-contract counterparts. The share of transaction cost in total cost for non-contract farmers was 21% as against only 2% for contract farmers. Thus, total cost of production was also lower by 25% in case of Safal contract growers. 37% of the sample farmers were small, 36% medium and the rest large landholders. The smallholders allocated 57% area to vegetables as compared to 34% by the large farmers. The contract farmers received 8% higher prices, mainly for better quality and as an incentive for ensuring a regular supply. The prices offered to the farmers were determined on the basis of prevailing prices in the wholesale F&V market in Delhi with a premium of 5-20% above this benchmark price, depending upon the commodity and its quality (Birthal et al, 2005).

Safal found it more convenient and beneficial to contract with smallholders and their associations due to: (i) less effect on overall supply in the event of crop failure of one or a few farmers (idiosyncratic risk); (ii) more flexible production portfolio (due to limited fixed

assets and more family labor) of smallholders, which would help in quickly responding to consumers' changing preferences; (iii) smallholder ability to ensure better quality as they strictly comply with the production practices advised by the buyer mainly due to more family labor and lower bargaining power; and (iv) low marketable surplus of smallholders which increased their dependency on Safal for profit maximization (Alam and Verma, 2007).

#### **Box 6.1 KNIDS Green in Bihar**

*Set up two years ago (2008) by an IIMA graduate in agribusiness management (Mr. Kaushalendra) with the help of Agricultural Technology Management Agency (ATMA) as a public private partnership and a loan of Rs. 5 lakh from Friends of Women's World Banking (FWWB), KNIDS encourages farmers to produce vegetables and monitors the grading, sorting and packaging of the products before supplying it to its partnered vendors for distribution to residential, commercial and market places. It has 3000 supplying farmers and its brand- 'Samriddhi' has become popular in Patna, Ara, Jahanbad and Nalanda districts. Due to cutting out of the middleman's commission, farmers receive 35% higher price and consumers 15% lower price than the local vendors. It has 50 designer push carts to sell vegetables and they also carry ads on payment basis. It also home delivers vegetables in bulk and issues cash memo. It has achieved a turnover of Rs. 4 crore within two years and is attempting production and export of exotic vegetables to Dubai (Talukdar, 2010).*

#### **6.4. A comparison**

Though both the cases point to many similarities like number and size of supplying farmers despite differences in scale and management besides formal form of organisation of the entities, there are many differences which stand out clearly. For example, whereas HOPCOMS started as a formal co-operative, Safal was more of an intervention of a national level promotion agency which organised supplying farmers into informal associations. Also, HOPCOMS has been more inclusive of smallholders not only due to its being co-operative but also because of the many operational guidelines which encouraged smallholder participation unlike Safal. In HOPCOMS, this was possible due to various reasons outlined in section 2.3. On the other hand, Safal also was inclusive of smallholders due to collectivization of producers by an NGO into federations and the positive inclination of the

chain towards smallholders as it recognized the advantages of working with such small producers as outlined in section 3.2 above. But, not compromising on quality standards and giving clear signals to producers and their agencies was also important in both cases which led to successful operations and management of the chains at the back end.

## **6.5. Conclusions**

The above two case studies of alternative channels of linking primary producers of F&Vs with retail markets show that it is possible to build this linkage and include small growers into such arrangements. The farmer level assessments of this linkage also showed that farmers were better off as compared to when dealing with open markets. The formal (HOPCOMS) and informal (SAFAL) co-operative chains were inclusive of smallholders and provided many value added services to their growers.

In both the cases, the de facto ownership and control of the operations of the chains was in the hands of the government agencies and they were running them effectively without any direct involvement of the primary growers in the activities of the co-operatives. In fact, Safal is totally owned by the state agency (NDDB) and has only contractual relations with supplying growers' bodies i.e. farmers' associations and federations most of which are also informal. But, as the cases show these chains also had salutary effect on the F&V markets in general due to the competitive conditions created by these chains.

These alternative chains not only paid higher prices to their supplying growers but also offered lower than the competition prices to their buyers. The marketing costs of the member growers were lower than those of the non-members selling in open market. Further, these chains also had lower wastages at various levels as it had brought in sense of quality and grading among grower members. The other reason for the success of these linakges was the organisation of producers into co-operatives/associations which lowered the transaction cost of the agency as well as the growers. Further, the presence of processing activity in these projects also helped the agencies to utilize surplus produce for conversion into value added products and avoid losses of unsold produce or restrict farmer procurement.

But, the business viability of these interventions is sometimes questioned as these chains are run with public funding. Therefore, it is important to run them more like commercial entities with greater involvement and stake of the supplying farmers so that other farmer groups and agencies can look at replication of such models. One way to do that is to convert them, especially HOPCOMS, into producer companies with all the initial support provided by the state/promoting agencies. These interventions are important to protect the interest of the growers in general and that of smallholders in particular when they deal with private buyers of their produce in traditional *mandis* or modern retail chains.

## Chapter 7

### F&V Retail Chains and Traditional Retailers

#### **7.1 Introduction**

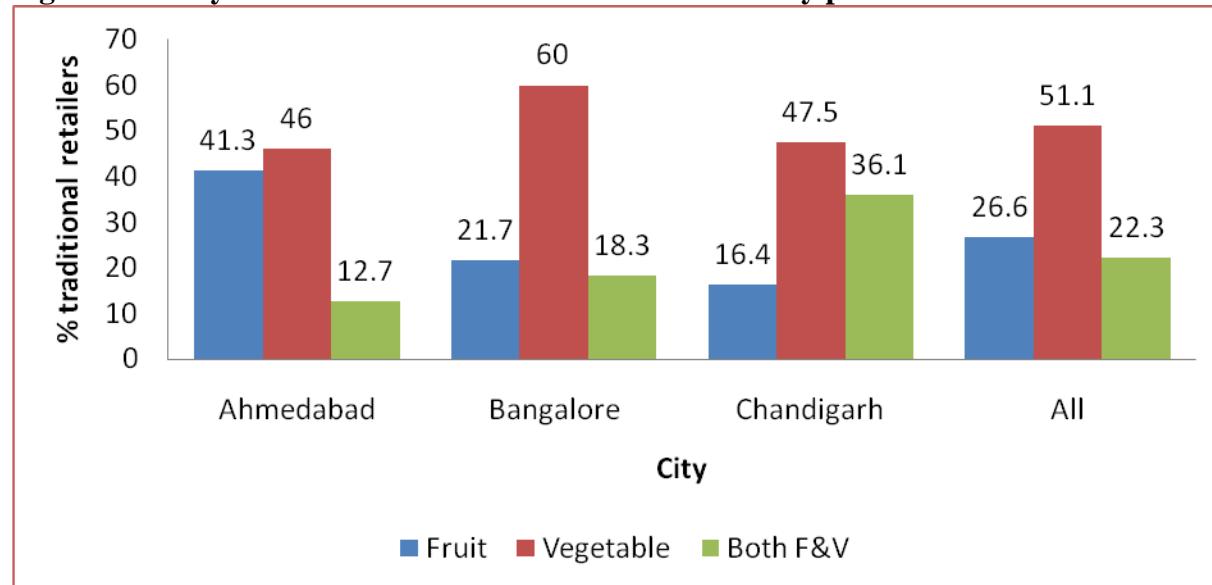
This chapter examines the impact of modern retail chains on the business and livelihoods of traditional F&V retailers in three major cities- Ahmedabad, Bangalore and Chandigarh. It analyses the business profile of traditional retailers and their perception of the impact as well as makes a quantitative assessment of the impact. It further goes into strategies adopted or proposed to be adopted by the traditional retailers to tackle the presence of modern retail chains and concludes with aspects of their business which have policy dimensions.

#### **7.2 Traditional retailer profile**

A majority of the traditional F&V retailers interviewed across the three cities were vegetable sellers (51%) followed by fruit sellers (27%) and fruit-cum-vegetable sellers (22%) (Fig 7.1). 41% of the traditional retailers in Ahmedabad were only fruit sellers compared to only 22% in Bangalore and 16% in Chandigarh. However, in Bangalore, 60% traditional retailers sold only vegetables compared to 46-48% each in Ahmedabad and Chandigarh. However, both F&V selling traditional retailers were higher in Chandigarh (36%) compared to only 13% in Ahmedabad and 18% in Bangalore. Shop owners were mainly found to sell either both F&Vs or vegetables only. Only fruit sellers were rare. All hawker categories, except those in Ahmedabad, dominantly sold vegetables only (table 7.1).

Most of the retailers interviewed were owners of the F&V outlets. The average age of the traditional retailers varied between 36-39 years across cities. 82-89% of the traditional F&V retailers had owned outlets/carts in Ahmedabad and Chandigarh each compared to only 43% in Bangalore, where about 32% had rented outlets/carts and the rest (25%) were footpath sellers. RF and ABRL's More in that order were the major nearby modern retail outlets to traditional retailers in Ahmedabad and Bangalore. However, in Chandigarh, More followed by RF and Big Bazaar respectively were the nearby modern retail outlets.

**Figure 7.1: City-wise distribution of traditional retailers by product sold**



**Table 7.1: City-wise distribution of traditional retailers by product sold (%)**

Type of retailer	Location	Fruit	Vegetable	Both F&V
Fixed shop owner	Ahmedabad	23.8	47.6	28.6
	Bangalore	11.8	41.2	47.1
	Chandigarh	9.5	28.6	61.9
	All	15.3	39	45.8
Roadside fixed hawker	Ahmedabad	68.4	31.6	-
	Bangalore	18.2	72.7	9.1
	Chandigarh	31.3	43.8	25
	All	38.6	50.9	10.5
Home delivery hawker	Ahmedabad	20	80	-
	Bangalore	14.3	85.7	-
	Chandigarh	-	75	25
	All	10.3	79.3	10.3
Roadside -cum-home delivery hawker	Ahmedabad	46.2	38.5	15.4
	Bangalore	42.9	50	7.1
	Chandigarh	25	58	16.7
	All	38.5	48.7	12.8
All	Ahmedabad	41.3	46	12.7
	Bangalore	21.7	60	18.3
	Chandigarh	16.4	47.5	36.1
	All	26.6	51.1	22.3

Thus, RF and More emerged as nearby modern retail outlets for 65% of traditional F&V retailers across all locations (table 7.2). In general, Bangalore had presence of many more

retail chains (as many as seven with most dedicated to F&V) than that in Ahmedabad or Chandigarh (only five in each case which also included Big Bazaar and Star Bazaar which are not exclusively focused on F&V). The traditional retailers in Ahmedabad were found to



**Photo 7.1: A fixed vegetable shopkeeper and a mobile vegetable vendor in Ahmedabad**

**Table 7.2: City-wise distribution of traditional retailers by presence of nearest chain outlet (%)**

City	Type of retailer> Chain outlet	Shop owner	Roadside /fixed hawker	Home delivery hawker	Roadside/fixed-cum- home delivery hawker	All
Ahmedabad	Reliance Fresh	38.1	57.9	40	53.8	47.6
	More	42.9	21.1	30	46.2	34.9
	6Ten	4.8	10.5	-	-	4.8
	Star Bazaar	4.8	10.5	30	-	9.5
	Big Bazaar	9.5	-	-	-	3.2
Bangalore	Reliance Fresh	47.1	50	28.6	42.9	45
	More	11.8	18.2	28.6	21.4	18.3
	Food World	17.6	9.1	-	-	8.3
	Safal	-	-	-	21.4	5.0
	Heritage@ fresh	-	-	-	14.3	3.3
	Nilgiris	11.8	-	-	-	3.3
	Spencer's	5.9	4.5	-	-	3.3
	Unable to name	5.9	18.2	42.9	-	13.3
Chandigarh	Reliance Fresh	38.1	12.5	-	25	21.3
	More	9.5	25	50	33.3	26.2
	Choupal Fresh	23.8	18.8	8.3	-	14.8
	Spencer's	28.6	25	-	-	16.4
	Big Bazaar	-	18.8	41.7	41.7	21.3
All	Reliance Fresh	40.7	42.1	20.7	41.0	38.0
	More	22.0	21.1	37.9	33.3	26.6
	Others	37.3	36.8	41.4	25.6	35.3

Note: Others include all other responses of the traditional retailers except for Reliance Fresh and More.



**Photo 7.2: A fixed traditional F&V market in Ahmedabad**

sell F&Vs closest to modern retail outlets (0.5 km) compared to those in Bangalore and Chandigarh (0.7 and one km. respectively) which pointed to lower density of modern retail outlets in Chandigarh. The home delivery hawkers across all locations preferred to operate the farthest from the modern retail outlets (1 km.) compared to the distance of 0.5 km in case of the shop owners and 0.8 km each in case of roadside and roadside-cum-home delivery hawkers. Further, traditional retailers in Bangalore perceived that organized retailing in F&Vs was present for the last two years. However, those in Chandigarh and Ahmedabad felt its presence for the last 1.6 years only (table 7.3). About 32% of traditional F&V retailers across all locations were illiterate. The illiteracy was the lowest among fixed shop owners (5-23%) and 39-44% across hawker categories across cities. However, 31% of the roadside-cum-home delivery hawkers in Ahmedabad were surprisingly senior secondary degree holders compared to only 7% in Bangalore and none in Chandigarh.

49% of the traditional retailers in Ahmedabad and 32% in Bangalore sold as hawkers and did not specify any specific location compared to only 16% in Chandigarh. Fixed shop retailers in Ahmedabad mainly had either stand alone shops or were located in the market popular for specific products in sharp contrast to Bangalore, where they were primarily located near malls. However, in Chandigarh, 41% traditional retailers sold F&Vs near local neighborhood colony market while 21% were randomly distributed in markets popular for special products while a few also had stand alone shops. The traditional hawkers across all

**Table 7.3: City-wise distribution of traditional retailers by average distance from the nearest organized retail outlet and average years of presence of the retail chain outlet**

Parameter	Type of retailer> City	Fixed shop owner	Roadside/ fixed hawker	Home delivery hawker	Roadside/fixed-cum-home delivery Hawker	All
Distance from nearby modern outlet (in kms.)	Ahmedabad	0.40	0.57	0.58	0.43	0.48
	Bangalore	0.40	0.70	1.30	0.79	0.69
	Chandigarh	0.82	1.15	1.21	1.16	1.11
	All	0.55	0.78	1.01	0.78	0.76
No. of years of presence of the modern outlet	Ahmedabad	1.40	1.87	1.70	1.23	1.56
	Bangalore	1.40	1.90	2.20	2.50	2.00
	Chandigarh	1.35	1.61	1.90	1.27	1.59
	All	1.38	1.81	1.90	1.70	1.71

locations except a few in Bangalore did not operate near the malls. Fixed and fixed-cum-home delivery hawkers in Chandigarh operated near to the local neighborhood and colony markets as well as in the markets popular for special products. The home delivery hawkers in Bangalore were largely found to sell in the nearby colony markets and around small malls. Thus, most of the traditional F&V retailers interviewed were found to sell away from the malls as hawkers, in local colony markets and markets popular for special products while some also had stand alone shops across all locations (table 7.4). But, 1/3<sup>rd</sup> of them all were street hawkers with such proportion being the highest in Ahmedabad (49%) and the least in Chandigarh (16%).

The average size of the shop was around 105 sq. ft. among fixed shop owners in Ahmedabad and Chandigarh compared with 89 sq. ft. in Bangalore. This is also corroborated by Joseph and Soundarajan (2009) who found the average size of the fixed F&V shop to be 119 sq. ft. More than 66% of traditional retailers across all cities started F&V business of their own, 29% acquired it from their ancestors while only 5% worked in acquired business from relatives. Size of cart varied between 24-29 sq. ft. in Ahmedabad and Chandigarh. However, in Bangalore, size of cart/floor was between 24-40 sq. ft. About 41% traditional retailers in Ahmedabad were in F&V business for more than 20 years while about 22% established it in last 10-19 years and 22% started in the last 5 years only. However, in Bangalore 42%

retailers were present in this business for the last 5 years only while 27% established it for more than 20 years. In Chandigarh, 38% reported their presence in F&V between 10-19 years, while 31% between 5-9 years. (table 7.5) More than 56% of shop owners and 54%

**Table 7.4: City-wise distribution of traditional retailers by their location (%)**

Type of location	Type of retailer> City	Shop owner	Roadside /fixed hawker	Home delivery hawker	Roadside /fixed-cum-home delivery hawker	All
Small Mall	Ahmedabad	4.8	-	-	-	1.6
	Bangalore	35.3	9.1	28.6	-	16.7
	Chandigarh	14.3	-	8.3	-	6.6
	All	16.9	3.5	10.3	-	8.2
Big Mall	Ahmedabad	4.8	-	-	-	1.6
	Bangalore	29.4	13.6	-	28.6	20.0
	Chandigarh	14.3	6.3	-	-	6.6
	All	15.3	7.0	-	10.3	9.2
Local neighborhood/ colony market	Ahmedabad	19.0	10.5	50.0	15.4	20.6
	Bangalore	11.8	18.2	71.4	21.4	23.3
	Chandigarh	38.1	37.5	25.0	66.7	41.0
	All	23.7	21.1	44.8	33.3	28.3
Market popular for special products	Ahmedabad	23.8	-	20.0	-	11.1
	Bangalore	5.9	-	-	7.1	3.3
	Chandigarh	19.0	31.3	16.7	16.7	21.3
	All	16.9	8.8	13.8	7.7	12.0
Stand-alone shops	Ahmedabad	47.6	-	-	-	15.9
	Bangalore	17.6	-	-	-	5.0
	Chandigarh	14.3	12.5	-	-	8.2
	All	27.1	3.5	-	-	9.8
Roadside/ street hawkers	Ahmedabad	-	89.5	30.0	84.6	49.2
	Bangalore	-	59.1	-	42.9	31.7
	Chandigarh	-	12.5	50.0	16.7	16.4
	All	-	56.1	31.0	48.7	32.6

roadside hawkers across all locations established F&V business for more than 10 years. 41% home delivery hawkers were in business for last 5 years while 35% established during last 5-9 years. Among roadside-cum-home delivery retailers, 36% ran F&V business for more than 20 years, while another 33% started to sell F&Vs in last 5 years. Thus, among all traditional

retailers across all cities, 29% were present in F&V business for last 5 years only, 26% each for 10-19 years and more than 20 years while only 20% for 5-9 years (table 7.6).



**Photo 7.3: Roadside fixed vegetable retailers in Bangalore and Belgaum**

**Table 7.5: City-wise distribution of traditional retailers by years of presence in business (%)**

Years in business	Type of retailer>City	Fixed shop	Roadside fixed	Home delivery	Roadside fixed cum-home delivery	All
<5	Ahmedabad	19.0	15.8	70	-	22.2
	Bangalore	58.8	31.8	28.6	42.9	41.7
	Chandigarh	4.8	18.8	25.0	58.3	23.0
	All	25.4	22.8	41.4	33.3	28.8
5-9	Ahmedabad	4.8	21.1	20	15.4	14.3
	Bangalore	5.9	22.7	28.6	7.1	15.0
	Chandigarh	42.9	25.0	50.0	-	31.1
	All	18.6	22.8	34.5	7.7	20.1
10-19	Ahmedabad	28.6	21.1	10	23.1	22.2
	Bangalore	11.8	13.6	28.6	21.4	16.7
	Chandigarh	42.9	50.0	25.0	25.0	37.7
	All	28.8	26.3	20.7	23.1	25.5
20+	Ahmedabad	47.6	42.1	-	61.5	41.3
	Bangalore	23.5	31.8	14.3	28.6	26.7
	Chandigarh	9.5	6.3	-	16.7	8.2
	All	27.1	28.1	3.4	35.9	25.5

The quantity of F&Vs bought for sale was the highest in Chandigarh (Rs. 3669) followed by that in Ahmedabad (Rs. 2778) and Bangalore (Rs. 2550). Across traditional retailer categories, amount of F&V bought was higher in shop owners (Rs. 4346) followed by

roadside fixed hawkers (Rs.2626), roadside-cum-home delivery hawkers (Rs. 2313) and only home delivery hawkers (Rs. 1941). However, the proportion of F&Vs left unsold at the end of the day was the highest in Bangalore (41%) followed by Chandigarh (29%) and Ahmedabad (26%); the overall among all traditional retailers being 32%. The proportion of the left over produce among retailers was higher in roadside-cum-home delivery hawkers (38%) and shop owners (35%), compared with those of roadside hawkers (28%) and the least in home delivery hawkers (14%). The daily wastage of F&Vs was around 17% and did not vary much except that fixed shops and home delivery hawkers had somewhat lower wastage (table 7.6).

**Table 7.6: City-wise distribution of traditional retailers by value of F&Vs handled daily**

Parameter	Type of retailer> City	Fixed shop	Roadside/ fixed	Home delivery	Roadside fixed-cum-home delivery	All
Produce bought for sale/day (Rs.)	Ahmedabad	4133.3	2057.9	1780	2407.7	2777.8
	Bangalore	3359.4	2403.4	1357.1	2450	2549.6
	Chandigarh	5357.1	3606.2	2416.7	2050	3668.8
	All	4345.9	2625.9	1941.4	2312.8	2998.8
% of daily unsold produce	Ahmedabad	20.5	31.6	9.8	42.8	26.5
	Bangalore	37	38.7	24.7	53.2	41.1
	Chandigarh	44.1	15.8	12.8	12.2	29.2
	All	34.5	28	13.8	38.4	31.7
Daily wastage(%)	Ahmedabad	15.5	16.1	8	15.5	14.5
	Bangalore	17.1	20.7	10.3	15.8	17.4
	Chandigarh	15.2	18	20	21.5	18.1
	All	15.9	18.4	13.5	17.5	16.6



**Photo 7.4: Display of vegetables at roadside fixed vending outlets**

The proportion of the credit sales was higher in Ahmedabad (70%) followed by Bangalore (50%) and Chandigarh (33%); the average across all cities being 51%. Among traditional retailers, 62-66% each of shop owners and home delivery hawkers, 46% roadside-cum-home delivery hawkers, and 35% roadside/fixed hawkers were found to sell on credit. 15% of customers in Bangalore were found to purchase F&Vs on credit from the traditional retailers compared to only 10% in Chandigarh and 7% in Ahmedabad. Further, 30% of the customers in case of fixed shop owners in Bangalore bought F&Vs on credit compared to only 10-13% each in Ahmedabad and Chandigarh. More of fixed shops and home delivery hawkers (>60%) tended to sell on credit than any other category (table 7.7).

**Table 7.7: City-wise distribution of traditional outlets by credit sales**

Credit sales	Type of retailer>City	Fixed shop	Roadside fixed	Home delivery	Roadside fixed-cum-home delivery	All
%age outlets	Ahmedabad	76.2	57.9	100	61.5	69.8
	Bangalore	58.8	36.4	57.1	57.1	50
	Chandigarh	61.9	6.25	33.3	16.7	32.8
	All	66.1	35.1	62.0	46.1	51.1
%age of customers	Ahmedabad	10.1	5.5	8	5.1	7.3
	Bangalore	30	10	8.3	13	14.7
	Chandigarh	12.7	4	10	15	10.3
	All	16.8	6.8	8.9	11	10.7

### 7.3 Procurement Channels of Traditional Retailers

The proportion of traditional retailers buying directly from wholesale mandi and quantity of F&Vs procured through *mandi* wholesalers was higher in Bangalore followed by Ahmedabad and Chandigarh. However, procurement through commission agents was higher in Chandigarh compared to that in Bangalore and Ahmedabad. In Bangalore, only hawkers bought through commission agents. In Ahmedabad, 35% of traditional retailers also procured from the semi-wholesalers located in Kalupur *mandi*. About 8% of the traditional retailers in Bangalore and 2-3% each of fixed shop retailers in Ahmedabad and Chandigarh also procured some proportion of F&Vs from the farmers directly. It was only 4% of total who bought directly from farmers. However, procurement from farmers among traditional retailers of the hawker category in Ahmedabad and Chandigarh was completely absent. Some

of the traditional retailers in Bangalore (6%) also purchased some quantity of F&Vs from Safal wholesale market. In Chandigarh, 38% of traditional retailers also sourced F&Vs from the traders outside the *mandi*. Thus, *mandi* wholesalers and commissions agents were the major procurement sources for all types of traditional retailers across all locations (table 7.8). On an average, traditional retailers bought about 90 kgs. of F&V but in Bangalore, 82% bought from mandi directly and in Ahmedabad, from mandi and semi-wholesalers and in Chandigarh, it was largely through commission agents in mandi.

**Table 7.8: City-wise distribution of traditional retailers by channel-wise quantity of F&V procured daily (in Kg.)**

Procurement channel	Type of retailer> City	Fixed shop	Roadside fixed	Home delivery	Roadside fixed-cum-home delivery	All
Mandi wholesaler	Ahmedabad	45.3 (57)	55.3 (57.9)	50 (70)	69.2 (69.2)	54 (61.8)
	Bangalore	77.9 (82.3)	66 (72.7)	100 (100)	80.4 (85.7)	76.7 (81.7)
	Chandigarh	27.4 (42.8)	25 (31.2)	33.3(33.3)	33.3 (41.7)	29.1 (37.7)
	All	48.3 (59.2)	50.9 (56.1)	55.2 (62.1)	62.2 (66.7)	53.1 (60.3)
Local <i>mandi</i> through commission agent	Ahmedabad	26.2 (28.6)	5.3 (5.3)	20 (20)	-	13.5 (14.3)
	Bangalore	-	11.4 (13.6)	-	8.9 (14.3)	6.3 (8.3)
	Chandigarh	51.2 (71.4)	59.4 (68.7)	54.2 (66.7)	45.8 (75.0)	52.9 (70.5)
	All	27.5 (35.6)	38.7 (42.2)	29.3 (34.5)	17.3 (28.2)	24.2 (31)
Farmer	Ahmedabad	2.9 (4.8)	-	-	-	1.0 (1.6)
	Bangalore	11.8 (11.8)	9.1 (9.1)	-	7.1 (7.1)	8.3 (8.3)
	Chandigarh	2.4 (4.8)	-	-	-	0.8 (1.6)
	All	5.3 (6.8)	3.5 (3.5)	-	2.5 (2.5)	3.3 (3.8)
Semi-wholesaler	Ahmedabad	25.7 (33.3)	39.5 (42.1)	30 (30)	30.8 (30.8)	31.6 (34.9)
Trader outside <i>mandi</i>	Bangalore	1.5 (5.9)	9.1 (13.6)	-	-	3.8 (6.7)
	Chandigarh	19 (47.6)	15.6 (31.2)	12.5(25.0)	20.8 (41.7)	17.2 (37.7)
	All	7.2 (18.6)	7.9 (14)	5.2 (10.3)	6.4 (12.8)	6.9 (14.7)
Safal wholesale market	Bangalore	8.8 (11.8)	4.5 (4.5)	-	3.6 (7.1)	5.0 (6.7)

Note: Figures in brackets indicate the %age of each type of retailer using each channel. Since some of the retailers used multiple channels to procure fruits and vegetables, their %age would add up to >100.

The traditional retailers across all locations purchased F&Vs mainly through open auctions and price negotiations while a few bought through secret bidding. In general, the tendency to buy F&Vs in open auction was higher among the fixed shop owners as compared to other

categories. In sharp contrast to this, 79% of roadside-cum-home delivery hawkers procured F&Vs through open auction in Bangalore compared with only 31% in Ahmedabad and 42% in Chandigarh. Furthermore, 59% of the traditional retailers in Chandigarh bought F&Vs through price negotiations with wholesalers/commissions agents in *mandi* as compared with 33-35% each in Ahmedabad and Bangalore. In Ahmedabad and Bangalore, a significant proportion of retailers (27% and 17%) also purchased F&Vs through secret bidding process which was found to be totally absent in Chandigarh market. Thus, most of the traditional retailers procured F&Vs either through open auctions or price negotiations (table 7.9).



**Photo 7.5: Informal private fixed weekly retail vegetable market in Punjab**

**Table 7.9: City-wise distribution of retail outlets by mode of purchase of F&Vs (%)**

Type of retail outlet> Mode of purchase	Fixed shop	Roadside fixed	Home delivery	Roadside fixed- cum-home delivery	All
Open auction	Ahmedabad	43	37	40	31
	Bangalore	47	36	43	79
	Chandigarh	48	38	33	42
	All	46	37	38	51
Price negotiation	Ahmedabad	43	32	40	23
	Bangalore	35	41	43	14
	Chandigarh	52	63	67	58
	All	44	44	52	31
Secret bidding	Ahmedabad	14	32	20	46
	Bangalore	18	23	14	7
	All	10	19	10	18
					15

About 59% of traditional retailers paid in cash, 26% in both cash and credit while only 16% bought on credit. The proportion of traditional retailers buying in cash was higher in non-fixed shop categories (62-72%) as compared to shop owners (42%) across all the cities especially in Ahmedabad. However, credit and cash-cum-credit purchases were higher in case of fixed shops compared to that in other categories. Hawkers also paid higher commission in *mandi* as compared to that by the fixed shop owners, the average being 8.2%. The procurement cost among home delivery hawkers was the lowest as compared to the other categories and fixed shops. It was mainly due to the fact that they used their carts to buy F&Vs instead of hiring any auto-rickshaw/four wheeler. The procurement cost in Bangalore was the highest (Rs. 72/qt.l.) as compared to that in Ahmedabad and Chandigarh (Rs. 34-39/qt.l.) (table 7.10).

**Table 7.10: City-wise distribution of traditional retail outlets by payment terms in *mandi* (%)**

Type of retail outlet> Payment terms	Fixed shop	Roadside fixed	Home delivery	Roadside- cum-home delivery	All
Cash	Ahmedabad	43	79	80	54
	Bangalore	47	50	71	71
	Chandigarh	38	75	67	58
	All	42	67	72	62
Credit	Ahmedabad	10	11	-	15
	Bangalore	29	14	29	14
	Chandigarh	29	13	17	8
	All	22	12	14	13
Both cash and credit	Ahmedabad	48	11	20	31
	Bangalore	24	36	-	14
	Chandigarh	33	13	17	33
	All	36	21	14	26
Average commission paid (%)	Ahmedabad	7.5	8	8.5	8.5
	Bangalore	8	8.5	8.5	8.25
	Chandigarh	8	8.5	8.5	9
	All	7.8	8.3	8.5	8.6
Procurement cost (Rs./qt.l.)	Ahmedabad	35	35.9	31.8	33.1
	Bangalore	75.7	80	60	62
	Chandigarh	33	50	30	42
	All	46	56.9	37.9	46.2

#### **7.4 Retail Chain Impact on Traditional Retailers**

The proportion of regular customers visiting the traditional retail outlets was about 22% each in Ahmedabad and Bangalore compared to only 13% in Chandigarh. However, the %age decline in regular customers due to the presence of modern retail outlets was higher in Ahmedabad (23%) compared with 19% in Bangalore and only 8% in Chandigarh (Fig. 7.2). The % decline across traditional retailers was higher in roadside-cum-home delivery hawkers (27%) and roadside fixed hawkers (28%) while it was only 10% each among fixed shop owners and home delivery hawkers (table 7.11). The highest decline in general across all categories and specifically among roadside hawkers was in Ahmedabad (23% and 37% respectively) followed by Bangalore (19% and 20-25%).

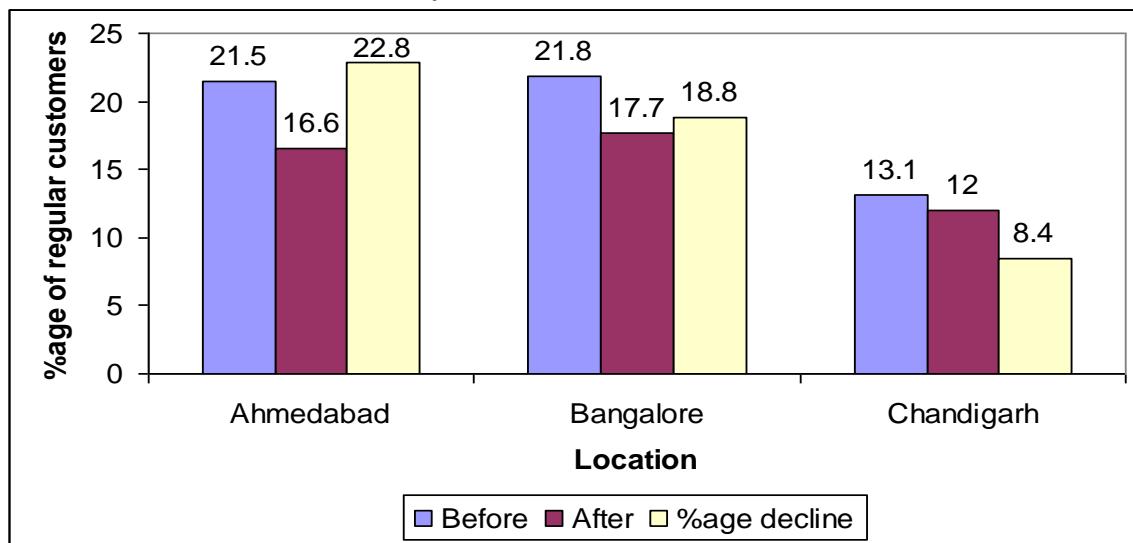
**Table 7.11: City-and category –wise % decline in regular customers due to modern retail chains**

City>		Ahmedabad	Bangalore	Chandigarh	All
Fixed shop	Before	32.3	25.7	25.5	27.8
	After	29.3	23.1	23.1	25.2
	%age decline	9.3	10.1	9.4	9.6
Roadside fixed	Before	22.1	18.7	3.5	14.8
	After	14.0	15.0	3.2	10.7
	%age decline	36.7	19.8	8.6	27.3
Home delivery	Before	8.8	19.3	10.8	13.0
	After	7.3	16.2	10.8	11.4
	%age decline	17.0	16.1	-	11.8
Roadside-cum- home delivery	Before	12.7	27.1	6.2	15.3
	After	7.5	20.2	5.5	11.1
	%age decline	40.9	25.5	11.3	27.8
All	Before	21.5	21.8	13.1	18.8
	After	16.6	17.7	12.0	15.4
	%age decline	22.8	18.8	8.4	17.9

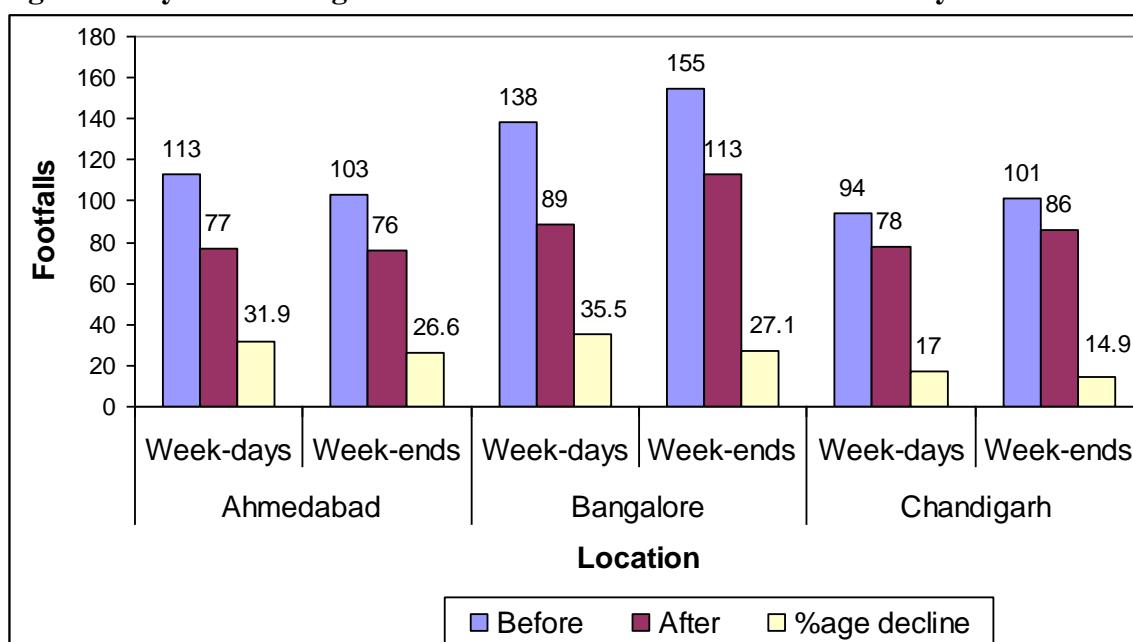
The average footfalls on week-days and week-ends before the emergence of modern retail outlets were higher in Bangalore (138 and 155 respectively) followed by Ahmedabad (113 and 103 respectively) and Chandigarh (94 and 101 respectively). The %age decline in footfalls during week-days and week-ends was also higher in Bangalore (36% and 27% respectively) compared to Ahmedabad (32% and 27% respectively) and Chandigarh (17%

and 15% respectively) (Fig.7.3). The fixed shop owners in Ahmedabad reported the highest footfalls during week-days (139) compared to that in Bangalore and Chandigarh (117 each). However, during week-ends, footfalls were found to be the highest in Chandigarh (135) followed by Bangalore (129) and Ahmedabad (127). But, the decline in footfalls in case of fixed shops due to the emergence of retail chain outlets was the highest in case of Bangalore (21-22% each during week days and week ends) followed by that in Ahmedabad (19-20% each during week days and week ends) and Chandigarh (9-11% each during week days and week ends): overall decline among all shop owners across all locations being 16% each during week-days and week-ends. In case of non-fixed shop categories, highest footfalls during week-days and week-ends before the emergence of the organized retailing was observed in Bangalore followed by Ahmedabad and Chandigarh. The decline across traditional retailers was the highest in case of roadside-cum-home delivery hawkers (37%) followed by roadside hawker (26% and home delivery hawker (21%). Among all retailers, week-ends footfalls turned out to be higher than the week-day footfalls. But, the decline in footfalls was observed to be higher during the week-days compared to that during the week-ends (table 7.12).

**Fig.7.2: City-wise of % of regular customers at traditional outlets before and after the modern retail chain entry and % decline**



**Fig. 7.3: City-wise average footfalls before and after retail chain entry and % decline**



**Table 7.12: City-wise distribution of traditional outlets by average footfalls (week day and week end) before and after retail chain entry and %decline**

Day	Footfall and Decline (%)	Fixed shop		Roadside fixed		Home delivery		Roadside-cum-home delivery		All	
		Before	After	Before	After	Before	After	Before	After	Before	After
<b>Ahmedabad</b>											
Week-day	Footfalls	139	113	115	61	68	63	102	52	113	77
	Decline	18.7		47		7.4		49		31.9	
Week-end	Footfalls	127	102	102	67	72	67	88	48	103	76
	Decline	19.7		34.3		6.9		45.5		26.6	
<b>Bangalore</b>											
Week-day	Footfalls	117	93	165	101	143	89	120	65	138	89
	Decline	20.5		38.8		37.8		45.8		35.5	
Week-end	Footfalls	129	101	189	140	150	107	139	87	155	113
	Decline	21.7		25.9		28.7		37.4		27.1	
<b>Chandigarh</b>											
Week-day	Footfalls	117	104	77	69	75	57	93	65	94	78
	Decline	11.1		10.4		24		30.1		17	
Week-end	Footfalls	135	123	86	77	70	54	98	72	101	86
	Decline	8.9		10.5		22.9		26.5		14.9	
<b>All</b>											
Week-day	Footfalls	124.8	104.0	123.6	78.7	89.0	66.8	105.7	60.7	114.9	81.2
	Decline	16.7		36.4		25.0		42.2		29.3	
Week-end	Footfalls	130.4	109.2	131.1	98.0	90.0	71.3	109.4	69.4	119.3	91.4
	Decline	16.3		25.3		20.8		36.6		23.4	

About 60% of traditional retailers in Ahmedabad, 45% in Bangalore and 33% in Chandigarh reported the decline in sales due to the emergence of modern retail outlets. The impact of organized retail outlets was witnessed to be higher on roadside and roadside-cum-home delivery hawkers (53-64%) compared to home delivery hawkers (28%). Impact among roadside and roadside-cum-home delivery hawkers was observed to more in Ahmedabad followed by Bangalore and Chandigarh. Only a few roadside-fixed hawkers reported the increase in sales (table 7.13).

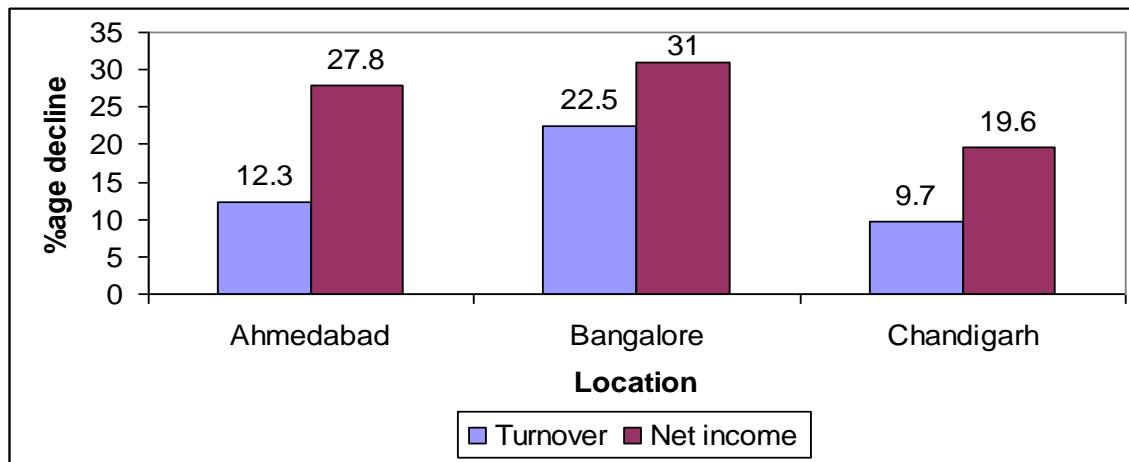
**Table 7.13: City-and category-wise distribution of traditional retailers by impact of retail chains on sales (% of respondents)**

Sales impact	Type of outlet>City	Shop owner	Roadside /fixed hawker	Home delivery hawker	Roadside/ fixed-cum-home delivery hawker	All
Sales decline	Ahmedabad	38	79	20	100	60
	Bangalore	41	50	29	50	45
	Chandigarh	33	25	33	42	33
	All	37	53	28	64	46

The average turnover and net income among traditional retailers was higher in Chandigarh followed by Ahmedabad and Bangalore both before as well as after the opening of modern retail outlets. However, %age decline in turnover and net income was higher in Bangalore (23% and 31% respectively) followed by Ahmedabad (12% and 28% respectively) and Chandigarh (10% and 20% respectively) (Fig. 7.4).

The average turnover and net income before and after the opening of organized retail chains was higher in case of fixed shops as compared to that in case of other categories. However, decline in turnover was reported to be higher among roadside-cum-home delivery and roadside/fixed hawkers (20-21%) compared to that among shop owners and home delivery hawkers (9%). The impact on net income of the traditional retailers was observed to be the higher in case of roadside-cum-home delivery hawkers (40%) followed by roadside hawkers (31%), home delivery hawkers (21%) and the least in case of shop owners (19%) (table 7.14).

**Fig. 7.4: City-wise % decline in traditional retailer turnover and net income after the entry of modern retail chains**



About 41% of traditional retailers in Ahmedabad, and 31-33% each in Bangalore and Chandigarh were aware of the F&V outlets closed down in the vicinity. Such awareness was higher among the home delivery hawkers (52%) followed by roadside-cum-home delivery hawkers (39%), shop owners (34%), and roadside hawkers (26%) (table 7.15).

**Table 7.14: City-and category-wise wise change in turnover and income of the traditional retailers due to modern retail chains**

Business parameter>		Turnover (Rs./day)				Net income (Rs./day)			
City> Retailer category		Ahmedabad	Bangalore	Chandigarh	All	Ahmedabad	Bangalore	Chandigarh	All
Fixed shop	Before	4419	3205.9	4119	3962.7	576.2	370.6	578.6	517.8
	After	4100	2726.5	3790.5	3594.1	461.9	302.9	473.8	420.3
	%age decline	7.2	15	8	9.3	19.8	18.3	18.1	18.8
Roadside fixed	Before	2142.1	2081.8	3437.5	2482.4	244.7	314.8	314.1	291.2
	After	1684.2	1484.1	3037.5	1986.8	158.9	190.9	264.1	200.8
	%age decline	21.4	28.7	11.6	20.0	35.1	39.4	15.9	31.0
Home delivery	Before	2080	1657.1	2050	1965.5	212.5	235.7	387.5	290.5
	After	2020	1342.9	1858.3	1789.7	190	189.3	283.3	228.4
	%age decline	2.9	19	9.4	8.9	10.6	19.7	26.9	21.4
Roadside-cum-home delivery	Before	2276.9	1996.4	1848.3	2044.3	303.8	275	245.8	275.6
	After	1761.5	1432.1	1633.3	1603.8	143.5	160.7	195.8	165.8
	%age decline	22.6	28.3	11.6	21.5	52.8	41.6	20.3	39.8
All	Before	2919	2330.8	3086.5	2782.7	362.3	312.1	406.1	360.5
	After	2558.7	1807.5	2788.5	2389.5	261.7	215.4	326.6	268.1
	%age decline	12.3	22.5	9.7	14.1	27.8	31.0	19.6	25.6

**Table 7.15: City-and category-wise distribution of traditional retailers by awareness of any F&V outlets/push-cart closed down in last few months (% ofttotal)**

City	Type of retailer> Response	Fixed shop	Roadside fixed	Home delivery	Roadside-cum-home	All
Ahmedabad	Aware	52.4	31.6	50	30.8	41.3
Bangalore	Aware	23.5	22.5	57.1	50	33.3
Chandigarh	Aware	23.8	25.0	50.0	33.3	31.1
All	Aware	33.9	26.3	51.7	38.5	35.3

The traditional retailers across all locations reported that their sales primarily declined due to the presence of the organized retail outlets in their vicinity. However, proportion of traditional retailers who reported decline in sales was the highest in Ahmedabad (52%) followed by Bangalore (37%) and Chandigarh (33%); overall across all traditional retailers being 41%. The impact was higher among roadside-cum-home delivery hawkers as 85% in Ahmedabad, 42-43% each in Bangalore and Chandigarh reported retail chains as the reason for decline in sales followed by roadside fixed hawkers. Home delivery hawkers in Ahmedabad, fixed shop owners and home delivery hawkers in both Bangalore and Chandigarh faced least competition from the organized retailers. The sales were also reported to decline due to the competition from traditional retailers like themselves as 23% traditional retailers in Bangalore and 20% in Chandigarh faced tough competition as compared to almost no competition faced in Ahmedabad. Another 9% of retailers also agreed that their sales declined due to the recession or reduced household income, with 12% mentioning it in Bangalore. Thus, all sale declines of traditional retailers could not be attributed to the emergence of organized retailing (table 7.16).

#### **Box 7.1 Traditional vendors and modern chains**

*Of the 400 hawkers and 100 shopkeepers surveyed across five cities, about 85% reported their business was on a slide. To cope with the situation, 60% of hawkers and 64% of the shopkeepers were working 10-12 hours/day, while 24% worked for 13 hours or more (FDI Watch and Action Aid) (**Business Economics**, 2009).*

*Bharti Wal-Mart provided 10 push carts to the unemployed and economically disadvantaged from rural areas located near the cash-and-carry store, Best Price Modern Wholesale in Amritsar. The pushcart owners, now holding legitimate businesses, have signed up as members of Best Price Modern Wholesale, to enable them to procure fresh produce at best prices and pass on these benefits to their customers (**Progressive Grocer**, 2009).*

## 7.5 Strategies to tackle the Organized Retail Chain Impact

Among the 57% of traditional retailers across all locations who responded to the survival strategies to tackle the impacts of the organized retail outlets, 47-51% of traditional retailers in Ahmedabad and Bangalore each stated that they would continue the F&V retailing. Another 11-15% retailers in both the cities reported that they would have to work as laborer if their sales continued to decline further. In Chandigarh also, 23% retailers (mainly hawkers) opined that they would work as daily wage laborer while another 20% reported to continue and compete with organized retailers by involving additional family members in retailing. About 19-21% traditional F&V retailers mainly hawkers in Ahmedabad and Bangalore each and 11% in Chandigarh felt they would shift to other related business/job like fruit juice retailing. Some fixed shop owners in Ahmedabad wanted to shift to grocery retailing, purchase auto rickshaw on loan, or put *karyana* (grocery) shop in a village. In Bangalore, some of F&V sellers also reported that they would prefer to do farming in the village by taking land on lease while some also highlighted the need for loans to expand the retailing business. Traditional F&V retailers in Chandigarh also emphasized that they would sell durables at public places, increase the delivery hours or shift to another location with less competition, if decline in sales continued (table 7.17).

**Table 7.16: City-and category-wise distribution of traditional outlets on reasons for decline in sales (%) (Ranking: Most important=I and less important=II)**

City>		Ahmedabad		Bangalore		Chandigarh		All	
Ranking> Reasons		I	II	I	II	I	II	I	II
Competition from organized retailers	Fixed shop owner	33	5	29	12	33	5	32	7
	Roadside fixed hawker	68	11	41	5	25	13	46	9
	Home delivery hawker	20	-	29	-	33	8	28	3
	Roadside-cum-home delivery hawker	85	15	43	7	42	8	56	10
	All	52	8	37	7	33	8	41	8
Competition from small retailers	Fixed shop owner	-	14	18	12	14	10	10	12
	Roadside fixed hawker	5	32	27	-	13	25	16	18
	Home delivery hawker	-	10	14	-	25	33	14	17
	Roadside-cum-home delivery hawker	8	39	29	7	33	17	23	21
	All	3	24	23	5	20	20	15	16
Recession	Fixed shop owner	10	5	12	24	5	5	8	10
	Roadside fixed hawker	5	11	5	23	6	13	5	16
	Home delivery hawker	10	10	14	14	8	17	10	14
	Roadside-cum-home delivery hawker	15	8	21	14	-	25	13	15
	All	6	8	12	20	5	13	9	14

The traditional retailers started to bring F&Vs of better quality to neutralize the impact of the organized retail chains as 75% of retailers in Chandigarh, 56% in Bangalore and 45% in Ahmedabad reported it as major initiative undertaken. However, 40% retailers (mainly roadside hawkers) in Ahmedabad and 14% in Bangalore reported reduction in price of F&Vs to minimize retail chain impact. Some of the traditional retailers also started home delivery and credit facilities to attract the customers. Better display of the produce was also reported by some retailers (table 7.18).

**Table 7.17: City-and category-wise distribution of traditional retailers on survival strategies ‘if sales decline’ (%)**

<b>Survival strategies</b>	<b>Type of traditional Retailer</b>	<b>Ahmedabad</b>	<b>Bangalore</b>	<b>Chandigarh</b>	<b>All</b>
Continue the business as it is	Fixed shop	63	56	20	44
	Roadside fixed	42	50	25	41
	Home delivery	50	33	11	21
	Roadside-cum-home delivery	55	40	25	41
	All	52	47	20	39
Shift to other business/job	Roadside fixed	33	21	13	24
	Roadside-cum-home delivery	27	40	38	34
	All	21	19	11	17
Work as laborer	Roadside fixed	17	21	25	21
	Home delivery	50	-	33	29
	Roadside-cum-home delivery	18	10	38	21
	All	15	11	23	16
Shift to grocery business	Fixed shop	13	11	30	19
	Roadside fixed	8	-	13	6
	Roadside-cum-home delivery	-	10	-	3
	All	6	6	11	8
Put karyana shop in village	Fixed shop	13	-	-	4
	Home delivery	-	33	-	7
	All	3	3	-	2

A few shop owners mainly in Bangalore and Chandigarh also started to give attention on cleaning their outlets and carts to bring in more customers. 13% of the retailers in Ahmedabad increased the floor area of the cart/shop to increase the retailing business. A small proportion of traditional retailers in Bangalore responded that they have now discontinued bringing low margin F&Vs and added some of imported products to their shop/cart. Longer opening hours of the shop, introduction of self service facilities, increasing the price for some customers were the some other steps undertaken to minimize the impacts

of the retail chains. Only fixed shop owners had the facilities like computerized billing, computerized accounting, inventory control, refrigerator, air-conditioning and electronic weighing machine. Many fixed shop owners had also planned to use these facilities (table 7.19). Further, 49-51% each of traditional retailers in Ahmedabad and Chandigarh and 37% in Bangalore wanted to avail bank finance. The need for bank credit was in general higher among the hawkers as compared to the fixed shop owners (table 7.20).

**Table 7.18: City-and category wise distribution of traditional retailers by steps to neutralize retail chain impact (%) - Rank 1- Most important, II- important**

Initiatives	City> <b>Traditional retailers (Ranking)</b>	Ahmedabad		Bangalore		Chandigarh		All	
		I	II	I	II	I	II	I	II
Better Quality	Fixed shop	38	38	57	14	71	29	55	27
	Roadside fixed	40	27	55	18	75	25	50	23
	Home delivery	50	50	100	-	75	25	75	25
	Roadside-cum-home delivery	54	15	43	14	80	20	56	16
	All	45	26	56	15	75	25	55	22
Credit Facility	Fixed shop	13	13	-	43	-	14	5	23
	Roadside fixed	-	20	-	18	-	-	-	17
	Home delivery	-	100	-	50	-	-	-	38
	Roadside-cum-home delivery	-	23	14	29	-	-	4	20
	All	3	24	4	30	-	5	2	21
Home delivery	Fixed shop	13	-	29	14	29	14	23	9
	Roadside fixed	7	-	-	9	25	-	7	3
	Roadside-cum-home delivery	8	-	-	-	-	-	4	-
	All	8	-	7	7	15	5	9	4
Reduced price	Fixed shop	25	13	14	-	14	14	18	9
	Roadside fixed	53	20	18	9	-	25	33	17
	Home delivery	-	50	-	-	-	25	-	25
	Roadside-cum-home delivery	39	23	14	-	-	20	24	16
	All	40	21	15	4	5	20	24	15
Better Display	Fixed shop	38	13	-	14	14	-	18	9
	Roadside fixed	13	13	-	18	25	-	10	13
	Home delivery	-	-	-	50	-	-	-	13
	Roadside-cum-home delivery	23	23	-	-	-	-	12	12
	All	21	16	-	15	10	-	12	12

Note: figures in brackets are % in total retailers; data pertains to % of the retailers who reported the impact on their sales

**Table 7.19: City-wise distribution of fixed shop owners by facilities and services currently used and planned (in %)**

City	Facilities and services	Computerized billing	Computerized accounting, inventory control etc.	Refrigerator	Air-conditioning	Electronic weighing machine
Ahmedabad	Using	33	9.5	23.8	14.3	38.1
	Planning to use	23.8	14.3	38.1	33.3	47.1
Bangalore	Using	11.8	5.9	17.6	5.9	35.3
	Planning to use	23.5	17.6	29.4	11.8	58.8
Chandigarh	Using	9.5	-	14.3	4.8	61.9
	Planning to use	9.5	-	38.1	19	28.6
All	Using	13.6	3.9	13.9	6.3	33.8
	Planning to use	14.2	8.0	26.4	16.0	33.6

**Table 7.20: City-wise distribution of traditional retailers on willingness to avail of the bank finance**

Type of traditional retailer> City	Fixed shop	Roadside fixed	Home delivery	Roadside-cum-home delivery	All
Ahmedabad	52.4	47.4	50	53.8	50.8
Bangalore	23.5	40.9	28.6	50.0	36.7
Chandigarh	38.1	56.3	66.7	41.7	49.2
All	39.0	47.4	51.7	48.7	45.7

About the perception of services of organized retail chains, 17% of traditional retailers across all cities reported that organized retail outlets sold F&Vs of poor quality. 14% of traditional retailers across cities (22% of retailers in Ahmedabad, 15% in Chandigarh) responded that since modern retail chain outlets affected their sales, they should be closed. Further, 14% retailers in Ahmedabad and 8% in Chandigarh opined that modern retail outlets should not retail FFVs. Another 8% argued that modern retail outlets offered lower prices to customers during week-ends and vegetable markets organized during week-days. Some traditional retailers were of the view that big companies had the capacity to bear the losses and could dump the unsold produce (table 7.21). In Ahmedabad and Bangalore, 13% retailers each were also aware of direct procurement from farmers by organized retail chains at lower price and hence, it was difficult for them to compete with such chains. Moreover, 13% hawkers in Bangalore described that retail chains weighed each and every gram of produce

while sometimes, they had to give 25-50 gm extra to satisfy customer. However, 15% traditional retailers in Chandigarh pointed out that modern outlets sold poor quality vegetables and 10% retailers were of the view that only higher income customers moved to malls.

**Table 7.21: City-and category wise distribution of traditional retailers by perception of services of modern F&V retail chains (%)**

Perception of modern F&V retail outlets	Type of traditional retailer	Ahmedabad	Bangalore	Chandigarh	All
Selling poor quality and frozen vegetables	Fixed shop	9.5	17.6	14.3	13.6
	Roadside fixed	21.1	13.6	18.8	17.5
	Home delivery	10.0	28.6	16.7	17.2
	Roadside-cum-home delivery	30.8	21.4	8.3	20.5
	All	17.5	18.3	14.8	16.8
Affect their sales so these should be closed	Fixed shop	19.0	-	14.3	11.9
	Roadside fixed	15.8	-	12.5	8.8
	Home delivery	40.0	-	16.7	20.7
	Roadside-cum-home delivery	23.1	14.3	16.7	17.9
	All	22.2	3.3	14.8	13.6
Should not retail FFVs	Fixed shop	14.3	-	9.5	8.5
	Roadside fixed	21.1	4.5	6.3	10.5
	Home delivery	20.0	-	16.7	13.8
	All	14.3	1.7	8.2	8.2
Selling at lower price on week-ends and vegetable fairs during week-days	Fixed shop	-	-	9.5	3.4
	Roadside fixed	5.3	-	18.8	7.0
	Home delivery	-	14.3	25.0	13.8
	Roadside-cum-home delivery	15.4	7.1	16.7	12.8
	All	4.8	3.3	16.4	8.2
Big companies can bear losses and dump unsold produce, but we can't	Fixed shop	4.8	11.8	4.8	6.8
	Roadside fixed	-	4.5	6.3	3.5
	Roadside-cum-home delivery	7.7	14.3	8.3	10.3
	All	3.2	8.3	4.9	5.4
Running into losses (as they sell at lower price, paying higher salaries and rent) and will close down	Fixed shop	4.8	5.9	-	3.4
	Roadside fixed	-	9.1	6.3	5.3
	Home delivery	20.0	-	8.3	10.3
	Roadside-cum-home delivery	-	-	8.3	2.6
	All	4.8	5.0	4.9	4.9

None of the shop owners in Ahmedabad and Chandigarh wanted to be a part of the organized retail chains. However, 24% shop owners in Ahmedabad showed interest to work in franchisee model of retail chains. Other than 14-17% hawkers in general and more so in Chandigarh (33%) who did not know the approach to working with modern retail chains, others were not generally open to work with retail chains though in Chandigarh, 63-67% fixed and fixed-cum-home delivery hawkers each reported their willingness to become part of the retail chain compared to that by 32% roadside hawkers in Bangalore and 21% roadside hawkers in Ahmedabad and 36-46% roadside-cum-home delivery hawkers each in Ahmedabad and Bangalore. Half of the home delivery hawkers in Ahmedabad wanted to associate with organized FFV retail chains. Thus, on an average about 29% of traditional retailers across all cities were willing to work with retail chains (table 7.22).

**Table 7.22: City-and category-wise distribution of traditional retailers by willingness to become franchisee of organized F&V chains (%)**

Willingness to be a franchisee	Traditional retailer > City	Fixed shop	Roadside fixed	Home delivery	Roadside-cum-home delivery	All
Yes	Ahmedabad	-	21	50	46	24
	Bangalore	24	32	29	36	30
	Chandigarh	-	63	25	67	34
	All	7	37	35	49	29
No	Ahmedabad	100	53	50	39	65
	Bangalore	77	64	57	57	65
	Chandigarh	100	25	42	33	56
	All	93	49	48	44	62

On major problems in F&V retailing, 29% of traditional retailers (mainly hawkers) in Ahmedabad, 20-21% in Bangalore and Chandigarh each reported the emergence of large number of modern retail outlets in their vicinity as their major problem. Higher wastages of F&Vs while retailing was reported to be higher in Chandigarh (26%) followed by Ahmedabad (13%) and Bangalore (8%); overall across all cities being 16%. 25% of traditional retailers in Bangalore faced harassment from police as they did not allow to sell F&Vs from roadside. Sometimes, police took *hafta* (weekly bribe)/F&Vs to permit them to sell from roadsides. 14-17% of traditional retailers in Bangalore and Chandigarh also faced completion from other push cart sellers. Highly labour intensity of the business, payment of

commission and cheating in weighing in *mandi* and lack of well built shops, especially in Chandigarh were some of the common problems across all the cities. Other major problems in F&V business in Ahmedabad were: ability to buy only small quantity of F&Vs, no retailing from roadsides and higher prices of F&Vs (reported by about 10-11% retailers each). In Bangalore and Chandigarh, scores of traditional retailers (mainly vendors) did not have adequate finance for F&V business (table 7.23).

The traditional retailers were of the opinion that government should provide interest free loans to make their business viable. The need for such loans was much more prevalent among the hawkers. Push cart sellers (22-28%) also stressed the allocation of permanent shops or a place with lower rent near the popular markets in the cities. About 13% of retailers wanted that the government should assist in the form subsidies to promote F&V marketing. Some of the retailers also were of the view that government should organize the cooperatives of traditional retailers to reduce their costs and earn profits (table 7.24).

On the policy front, about 51% of retailers in Ahmedabad, 26-27% each in Bangalore and Chandigarh asked for the closure of the organized retail chains to maintain their livelihoods. 13% of retailers each in Ahmedabad and Chandigarh wanted that bigger players should not retail F&Vs. Some of the traditional retailers in Ahmedabad were in the favor of zoning i.e. malls should be located in bigger markets, not around the colony markets. Further, 3-4% retailers each in Ahmedabad and Chandigarh, interestingly, also opined that retail chains should not be allowed to sell at lower price.

**Table 7.23: City-and category-wise distribution of traditional retailers by major problems in F&V retailing (%) (multiple responses)**

Problems in F&V retailing	Traditional Retailers	Ahmedabad	Bangalore	Chandigarh	All
Emergence of large no. of organized retail outlets	Fixed shop	14.3	17.6	14.3	15.3
	Roadside fixed	31.6	13.6	18.8	21.1
	Home delivery	40.0	28.6	8.3	24.1
	Roadside-cum-home delivery	38.5	28.6	50.0	38.5
	All	28.6	20.0	21.3	23.4
Higher wastages	Fixed shop	23.8	-	33.3	20.3
	Roadside fixed	5.3	13.6	12.5	10.5
	Home delivery	-	14.3	41.7	20.7
	Roadside-cum-home delivery	15.4	7.1	16.7	12.8
	All	12.7	8.3	26.2	15.8
Not allowed to sell from roadside	Fixed shop	-	5.9	-	1.7
	Roadside fixed	21.1	36.4	6.3	22.8
	Home delivery	-	14.3	25.0	13.8
	Roadside-cum-home delivery	15.4	35.7	-	17.9
	All	9.5	25.0	6.6	13.6
Large no. of push cart vendors	Fixed shop	9.5	11.8	14.3	11.9
	Roadside fixed	-	4.5	12.5	5.3
	Home delivery	-	14.3	16.7	10.3
	Roadside-cum-home delivery	-	14.3	16.7	10.3
	All	3.2	10.0	14.8	9.2
Highly labor intensive business	Fixed shop	4.8	17.6	19.0	13.6
	Roadside fixed	5.3	4.5	-	3.5
	Home delivery	10.0	-	-	3.4
	Roadside-cum-home delivery	-	-	16.7	5.1
	All	4.8	6.7	9.8	7.1
Payment of commission and cheating in weight in <i>mandi</i>	Fixed shop	4.8	-	-	1.7
	Roadside fixed	5.3	4.5	12.5	7.0
	Home delivery	-	-	8.3	3.4
	Roadside-cum-home delivery	7.7	-	-	2.6
	All	4.8	1.7	4.9	3.8

**Table 7.24: City-and category-wise distribution of traditional retailers by type of assistance from Government (%)**

Assistance needed	City>	Ahmedabad	Bangalore	Chandigarh	All
Interest free loans	Fixed shop	19.0	17.6	14.3	16.9
	Roadside fixed	26.3	27.3	12.5	22.8
	Home delivery	30.0	42.9	8.3	24.1
	Roadside-cum-home delivery	23.1	35.7	25.0	28.2
	All	23.8	28.3	14.8	22.3
Provide permanent shops/place at lower rent near popular market	Fixed shop	4.8	23.5	-	8.5
	Roadside fixed	21.1	36.4	25.0	28.1
	Home delivery	20.0	14.3	25.0	20.7
	Roadside-cum-home delivery	23.1	50.0	25.0	21.7
	All	15.9	33.3	16.4	21.7
Subsidies to promote F&V marketing	Fixed shop	4.8	5.9	23.8	11.9
	Roadside fixed	15.8	9.1	18.8	14
	Home delivery	20.0	-	25.0	17.2
	Roadside-cum-home delivery	15.4	-	25.0	12.8
	All	12.7	5.0	23.0	13.6
Co-operatives for better bargaining	Fixed shop	-	-	-	5.3
	Roadside fixed	5.3	-	12.5	5.3
	All	1.6	-	3.3	1.6
Don't know/least bothered	Fixed shop	47.6	41.2	42.9	44.1
	Roadside fixed	10.5	-	12.5	7
	Home delivery	20	28.6	16.7	20.7
	Roadside-cum-home delivery	7.7	7.1	-	5.1
	All	23.8	16.7	21.3	20.7

## 7.6 Summary

More of traditional sector retailers sold vegetables in Bangalore (60%) compared with that in Ahmedabad and Chandigarh (46-47% each) whereas the proportion of fruit sellers was higher (41%) in Ahmedabad and that of both F&V sellers higher in Chandigarh (36%). The average distance of the retailers from organized retailers was higher in Chandigarh (1.1 kms.) than that in Bangalore (0.7 kms) and Ahmedabad (0.5 kms.) which perhaps points to the lower density of modern retail outlets in Chandigarh. The average age of the traditional retailers varied between 36-39 years across cities. The average size of the shop in case of shop owners was around 105 sq.ft. in Ahmedabad and Chandigarh and 89 sq. ft. in Bangalore. Size of the cart varied between 24-29 sq. ft. in Ahmedabad and Chandigarh and

24-40 sq. ft. in Bangalore. Across both Ahmedabad and Bangalore, RF and More were the nearest organized retail outlets to the local retailers as reported by 48% and 35% retailers respectively in Ahmedabad and 45% and 18% retailers respectively in Bangalore. However, in Chandigarh, More, Big Bazaar, RF, and Spencer's were the nearest retail chain outlets. The average number of years of presence of the retail chain outlets was two in Bangalore and only 1.6 years each in Ahmedabad and Chandigarh. The home delivery hawkers across all locations preferred to operate the farthest from the modern retail outlets (1 km) compared to the distance of 0.5 km in case of the shop owners and 0.8 km each in case of roadside and roadside-cum-home delivery hawkers. About 32% of traditional retailers across all locations were illiterate.

Across all locations, 33% traditional retailers sold F&Vs as hawkers, 28% sold in local neighborhood markets, 12% sold in markets popular for special products while another 10% had stand alone shops. Only 17% retailers were found to sell near small and big malls. Thus, most of the traditional retailers preferred to sell F&Vs away from retail chain outlets. 29% traditional retailers were in F&V business for the last five years only. 25% each started the business either 10-19 years ago or even more than 20 years back. Another 20% started in last 5-9 years. The value of F&Vs bought for sale was the highest in Chandigarh followed by Ahmedabad and Bangalore. However, the produce left unsold at the end of the day was higher in Bangalore followed by Chandigarh and Ahmedabad. The wastage of the F&Vs across all locations was around 17%. About 70% of traditional outlets in Ahmedabad sold F&Vs on credit compared to 50% in Bangalore and 33% in Chandigarh. Mandi wholesalers and commissions agents were major sources of F&Vs for traditional retailers. Some of the traditional retailers in Ahmedabad also purchased from semi-wholesalers in Kalupur market while in Bangalore, some retailers bought from Safal wholesale market. The produce was mainly purchased through open auction and price negotiations. About 59% of the traditional retailers across cities paid for F&Vs in cash, 26% in both cash and credit while only 16% on credit. Average commission paid across cities was 8.2%. The procurement cost was Rs 72/qtL in Bangalore, and Rs. 34-39/qtL each in Ahmedabad and Chandigarh.

The traditional retailers in Bangalore had the highest number of footfalls both during week-days (138) and week-ends (155) followed by Ahmedabad (113 during week-days and 103 during week-ends) and Chandigarh (94 during week-days and 101 during week-ends) before the entry of retail chain outlets. But, with the emergence of these new players, number of footfalls declined across all locations. The %age decline in footfalls was the highest in Bangalore (35.5% during week-days and 27% during week-ends) followed by Ahmedabad (32% during week-days and 26.6% during week-ends) and Chandigarh (17% during week-days and 14.9% during week-ends). Further, number of regular customers visiting the outlets also came down everywhere after the entry of modern retail chains, more so in Ahmedabad (23%) and Bangalore (19%) and only 8% in Chandigarh. In Ahmedabad 60% traditional retailers reported decline in sales compared with only 45% in Bangalore and 33% in Chandigarh. Thus, 46% traditional retailers across cities reported the decline in sales due to the presence of retail chain outlets. Bangalore traditional retail sellers reported the largest decline in their turnover (22.5%) and income (31%) followed by Ahmedabad (12.3% and 27.8% respectively) and Chandigarh (9.7% and 19.6% respectively). Further, about 35% of traditional retailers across cities were aware of the push cart vendors/F&V outlets closed in their vicinity. Another recent survey based study also reports 78-89% traditional retailers reporting decline in sales, profits and customers across cities in Haryana, Tamil Nadu, Uttar Pradesh, Karnataka and Delhi. They reported 17-29% decline in sales, 16-23% in profits and 13-25% decline in customers and 49% were aware of closure of some traditional outlets (Kalirajan and Singh, 2009). Majority of the traditional retailers reported the decline in sales due to the presence of the retail chain outlets. However, entire sales decline can not be attributed to the organized retail chains as other factors like reduced household income, high prices, and recession have also impacted their sales. On being asked about the survival strategies, 39% traditional retailers across all cities responded that they would continue the F&V business. Shifting to other business related F&V retailing and grocery business, working as laborer and putting up of *karyana* shop in the villages were some of the other survival strategies reported by the traditional retailers. About 55% of traditional retailers started to bring F&Vs of good quality while some resorted to credit facility, home delivery, reduction in price and better display of F&Vs to neutralize the retail chain impact. 46% traditional showed their willingness to avail the bank finance. Emergence of organized retail

outlets, higher wastages of F&Vs, harassment by police were the major problems faced by the traditional retailers.

17% traditional retailers also perceived that organized retail outlets sold poor quality and frozen F&Vs which got damaged after removing from shelves while 14% reported that these hindered their sales and hence should be closed. Willingness to work with organized retail chains in franchise model was also reported by 29% of traditional retailers. Traditional retailers wanted interest free loans, allocation of permanent shops and subsidies for promoting F&V retailing to make their business more profitable. 51% traditional retailers in Ahmedabad and 26-27% retailers each in Bangalore and Chandigarh wanted the closure of the retail chain outlets.

## **Chapter 8**

### **Conclusions and Recommendations**

#### **8.1 Introduction**

Linking small primary producers with markets has been identified as one of the major issues in policy and practice in improving livelihoods for millions of poor in the developing world. Small producers have many competitive advantages like lower cost due to family labour abundance, higher flexibility in their working capability, and traditional knowledge which can be harnessed for many sectors. The only threats they face are: standardisation of products in global and national markets, and large volume requirements of modern markets. But, there are opportunities in organic, fair and ethical trade markets which are particularly suited for small producers and offer high prices (Harper, 2009).

On the other hand, private agencies also stand to gain from small producer linkage when it is not just profits, but also ‘people’ and ‘planet’ dimensions which have become the bottom lines of the companies as part of the ‘triple bottomline’ of businesses. The private agencies can leverage this smallholder linkage by way of political and social legitimacy and even more efficient operations as small producers are lower cost (due to their family labour intensity and various support provided by state and development agencies) and easier to manage, besides being lower cost suppliers than corporate owned/operated farms or market based procurement. But, typically, farmers complain of lack of markets for their produce and the processors or exporters or supermarket retailers complain of lack of adequate supplies of quality produce. This marketing paradox is present because many times, buyers do not reach out to explore new suppliers or farmers lack understanding of markets and ability to identify new markets or to take advantage of such opportunity with value addition activities like grading, sorting, packaging and primary processing (Shepherd, 2007).

Globally, and more so, in the developing world, including India, the various links of primary horticultural producers with markets include:

- Farmer to local trader;
- Farmer to chain retailer through intermediary (trader or lead farmer)
- Farmers to chain retailer through NGO

- Farmers to chain retailer through farmer co-operative or association
- Farmer to chain retailer with formal contract farming
- Farmer to chain retailer with informal contract farming
- Farmer to chain retailer without contract (only ‘contact’)
- Farmer to processor with formal contract farming
- Farmer to processor without formal contract farming
- Farmer to processor through intermediary (trader or lead farmer)
- Farmer to market through co-operative or group
- Farmer to exporter (direct)
- Farmer to exporter through intermediary
- Farmer to dedicated wholesaler
- Farmer to consumer

In these numerous types of arrangements, success depends on the market and the efficiency of operations. Some offer higher price realization for growers, while others lower cost of marketing, thus benefiting either way. But, most of these arrangements, especially indirect ones, do not ensure that small growers are part of these arrangements. Many market linkage arrangements just provide another alternative to the primary sellers without any commitment to buy or additional value or surplus as is the case with most of the fresh F&V retail chains in India which procure only A grade produce without any contract and the producer is left to sell the rest of the produce in other channels.

To promote direct interface of producers with the consumers in fresh produce, farmers' markets exist in India in the form of *Apni Mandis* in Punjab in 23 cities and towns, *Rythu Bazaars* in Andhra Pradesh (100 with 4500 farmer participants as sellers), *Uzhavar Santhai* in Tamil Nadu and *Shetkari Bazaar* in Maharashtra promoted by the state agencies (Prakash, 2008). Though farmers' markets have helped participating farmers become aware of the products required by the markets and helped them improve quality and diversify their product portfolio, besides resource use maximization, they have not made major impact as they could not scale up and farmers form only a proportion of the sellers in these markets with many of these markets being dominated by local traders and vendors.

## **8.2 Summary of Findings**

The implications of the rise of supermarkets or retail chains for farmers do not come from the type of store but from the methods of procurement used and the quality standards applied which are difficult for small suppliers to adhere to (Shepherd, 2005). Therefore, the procurement practices of the F&V retail chains were examined to understand their implications for and impact on producers. The following section presents the salient findings from case studies of the retail chains and their supplying farmers followed by a section which reports the findings on the impact of the retail chains' operations on traditional F&V retailers of various types in the cities.

### *8.21 Primary producer interface*

#### **8.211 Gujarat**

Reliance Fresh (RF) and ABRL had established their CCs in Prantij to procure vegetables from farmers. Both had their 'contact farmers' who delivered produce to CC. 75-82% of the farmers were associated with RF and ABRL for only less than a year. ABRL did not have any marginal or small farmers while RF had only 18% small farmers as compared to 27% marginal and 28% small farmers in Gujarat. Further, average operated land holding size, similar across both chains (15.9 and 14.7 acres respectively), was much higher than the average operated land holding size in Gujarat (6.4 acres). Thus, both the chains primarily dealt with larger land holders. The %age of leased-in land in operated area was 13% in case of RF and 4% in case of ABRL farmers. Leasing-out farmers were altogether absent among ABRL farmers while about 14% of RF farmers had leased out land. Farmers across both chains had tubewells and %age of irrigated area in operated land varied from 83 to 88. The drip irrigated area and drip irrigated farmers across both categories increased with increase in size of land holding. However, RF farmers had higher %age of drip irrigated area to total irrigated area (33%) and higher %age of drip irrigating farmers (55%) compared with that in case of ABRL farmers (9% and 14% respectively). Both chain farmers were rich in ownership of farm machinery.

All RF farmers, except large farmers, had off-farm income while only medium and large farmers had off farm income in case of ABRL farmers. But, 50% of ABRL large farmers had off-farm income against nil in case of RF large farmers. The %age of households with off-farm income was 32% in case of RF compared with only 9.1% in case of ABRL farmers. RF farmers had higher ownership of milch animals (79%), number of milch animals (9) and number of milch animals/acre of land (0.5) compared to 50%, 4 and 0.3 respectively in case of ABRL farmers. Farmers across both chains were relatively rich in household asset ownership. ABRL farmers put higher %age of GCA (67) under contact crops than that by the RF farmers (47). All RF farmers, except small, were found to grow exotic vegetables which were not grown by ABRL farmers. The cropping intensity was higher in case of RF farmers (155) than that in case of ABRL farmers (137). Across both chains, cropping intensity was higher among farmers with smaller land holding and declined with increase in size of land holding.

RF procured 41% of the total produce of an average supplying farmer in cauliflower and cabbage each. However, ABRL procured 35% of cauliflower and 39% of tomato. Thus, on average, farmer across both chains had to sell 59-65% of the produce in Jamalpur *mandi*. Average rejection rate at CC was 1.7% in case of RF and 2.5% in case of ABRL. Farmers realized higher prices in both the retail channels (Rs. 7/kg in cauliflower and Rs. 4.6/kg in cabbage in case of RF farmers and Rs. 3.6/kg in cauliflower and Rs. 4.4/kg in tomato in case of ABRL farmers) as compared to that in *mandi* (Rs. 6.4/kg in cauliflower and Rs. 4.4/kg in cabbage in case of RF farmers and Rs. 3.5/kg in cauliflower and Rs. 3.8/kg in tomato in case of ABRL farmers). The cost of production of cauliflower and cabbage in RF was Rs. 2.32/kg each while that of cauliflower and tomato in ABRL was Rs. 2.21/kg and Rs. 1.99/kg respectively.

Marketing costs were significantly higher in *mandi* channel (Re. 0.7/kg each in cauliflower and cabbage in case of RF farmers and Re. 0.78/kg in cauliflower and Rs. 1.15/kg in tomato in case of ABRL farmers) compared to that in retail channels (Re. 0.15/kg cauliflower and Re. 0.20/kg in cabbage in case of RF and Re. 0.28/kg in cauliflower and Re. 0.41/kg in tomato in case of ABRL). The resulting net income was higher in retail channels (Rs. 4.5/kg

in cauliflower and Rs. 2/kg in cabbage in case of RF and Rs. 1.11/kg in cauliflower and Rs. 2/kg in tomato in case of ABRL) as compared to that in *mandi* (Rs. 3.4/kg in cauliflower and Rs. 1.4/kg in cabbage in case of RF farmers and Re. 0.51/kg in cauliflower and Re. 0.74/kg in tomato in case of ABRL farmers).

The chains offered market price based procurement prices and procured only a limited proportion of the grower's crop without any firm commitment and, more, on a day-to-day basis. They made no provision for any input and did not have any formal contract arrangement. The rejected produce was left for the farmer to dispose off elsewhere as the chains procured only 'A'/'RR'/ABRL grade produce. Lower indent and purchase of only A/RR/ABRL grade were major problems across both the chains. The chains had brought quality consciousness, introduced exotic vegetables and package of practices for certain vegetables like cucumber and long melon. Farmers also found the chains better on transaction cost as their CCs were located near the farmers' fields which saved farmer's time and cost on selling their produce. The chains, especially RF, also offered somewhat higher prices than market prices in most of the vegetables procured and the coefficient of variation across days and months in case of RF prices was lower as against those in *mandi* prices.

### **8.212 Karnataka**

ABRL procured from contact farmers who delivered the produce at the CC in Malur, Kolar and from consolidator who had both 'contact' and contract farmers in Belgaum. But, NF had informal, oral and non-registered contract with farmers and produce was picked from farm gate. Across both the locations, ABRL worked with all categories of farmers, except large farmers in Malur. However, NF worked with marginal, small or semi-medium farmers only. Small farmers constituted about 56-68% of total farmers across both the retail chains which was higher than that in Karnataka state (26.6%). However, average size of operated land holdings was higher in case of ABRL farmers (10.76 acres in Belgaum and 7.46 acres in Malur) compared to that in case of NF farmers (4.6 acres), and much higher than average size of operational holdings in Karnataka (4 acres).

Only 2-3% of operated land of ABRL farmers across both locations was leased-in as against 19% in case of NF farmers. ABRL farmers in Belgaum leased out 5% of the owned land while leasing-out practice was altogether absent among ABRL farmers in Malur and NF farmers. In Malur, ABRL farmers had 70% of operated area as tubewell irrigated compared to 73% and 88% among contact and contract farmers respectively in Belgaum. Similarly, 75% of operated area of NF farmers was tubewell/canal irrigated. No ABRL farmer in Belgaum had any area under drip compared to 48% farmers in Malur who had about 38% area under drip. 15% of NF farmers also had about 17% area under drip. The %age of farmers with milch animals was higher in case of NF farmers (76%) compared to 47% in case of ABRL farmers in Belgaum and 32% in Malur. NF farmers also had higher number of milch animals/acre of land (0.46) compared to the ABRL farmers (0.33 in Belgaum and 0.12 in Malur). However, average income from dairying was higher in case of ABRL farmers in Belgaum (Rs. 4052/month) compared to that in case of NF farmers (Rs 3864/month) and ABRL farmers in Malur (Rs. 2300/month). 15-26% of farmers across both the retail chains had off-farm incomes and average off-farm income/month/person was only Rs. 789 in case of ABRL farmers in Belgaum and Rs.460 in case of NF and ABRL farmers each in Malur. ABRL and NF farmers had similar %age of GCA under contact/contract crops (73-77%). Cropping intensity across both retail chains ranged between 175 and 193. But, cropping intensity was higher in case of marginal land holders and it declined with increase in size of the land holding.

ABRL in Malur CC procured about 60% and 42% of the total cauliflower and tomato respectively as compared to 25% of cauliflower and tomato each in case of contact farmers and 90% of cauliflower and 87.5% of tomato in case of contract farmers in Belgaum. On the other hand, NF procured all the produce of the contract farmers. The rejection rate at Malur CC was only 5% in cauliflower and 6% in tomato compared to higher rejection rate of 15% in case of contact and 10% in case of contract farmers in case of cauliflower and 18% in case of contact and 12.5% in case of contract farmers in case of tomato at CC-cum-DC of the consolidator in Belgaum. But, rejection rate in NF at farm level was only 1-2%.

The average yield in cauliflower and tomato in ABRL was higher among contact farmers in Malur (11533.3 flowers/acre and 131.1 qtls/acre respectively) followed by 12142.9 flowers/acre in cauliflower and 120 qtls/acre in tomato in case of contact farmers and 8800 flowers/acre in cauliflower and 96 qtls/acre in tomato in case of contract farmers in Belgaum. NF contract farmers had higher yields (32 qtls in bhindi and 39qtls in baby corn) than that of non-NF farmers (30 qtls in bhindi and 32 qtls in baby corn). In ABRL, average price realization was lower in retail channel in case of the contact farmers across both locations (Rs. 5.20/flower in cauliflower and Rs. 3.1/kg in tomato in Malur and Rs. 3.8/flower and Rs. 3.2/kg in Belgaum) compared with that in non-retail channel (Rs.5.6 /flower in cauliflower and Rs. 3.55/kg in tomato in Malur and Rs. 3.9/flower and Rs. 3.5/kg in tomato in Belgaum). However, contract farmers in Belgaum realized higher prices in retail channel (Rs. 4.8/flower in cauliflower and Rs. 3.75/kg in tomato) than that in non-retail channel (Rs. 4.4/flower in cauliflower and Rs. 3.55/kg in tomato). Although NF provided grade-wise prices for bhindi and baby corn, but calculated average price for all grades (Rs. 9.69/kg for bhindi and Rs. 6.5/kg for baby corn) was lower in NF than that in *mandi* (Rs. 10/kg for bhindi and Rs. 7.8/kg for baby corn).

In ABRL, cost of production among contact farmers across both locations was almost similar (about Rs. 2/flower for cauliflower and Rs. 1.73/kg for tomato) but relatively higher among contract farmers in Belgaum (Rs. 2.8/flower for cauliflower and Rs. 2.3/kg for tomato). But, marketing costs were the highest in case of Belgaum contact farmers (Re. 0.88/flower in ABRL and Rs. 1.52/flower in *mandi* for cauliflower and Re. 0.4/kg ABRL and Rs. 1.1/kg in *mandi* for tomato) followed by that of the Belgaum contract (Re. 0.73/flower in ABRL and Rs. 1.41/flower in *mandi* for cauliflower and Re. 0.24/kg in ABRL and Re. 0.9/kg in *mandi* for tomato) and Malur contact farmers (Re. 0.26/flower in ABRL and Rs. 1.33/flower in *mandi* for cauliflower and Re. 0.23/kg in ABRL and Re. 0.9/kg in *mandi* for tomato). Thus, ABRL farmers across both locations had lower average cost of marketing in retail channel than that in non-retail channel. Hence, all ABRL farmers across both locations had higher net income in retail channel compared to that in non-retail (*mandi*) channel. Although, contact farmers had significantly higher yields than that of the contract farmers in Belgaum, but

lower price realization for contact farmers in both *mandi* and retail channel, resulted in the lower net income among contact farmers than that among contract farmers.

Farmers chose to sell to retail channel due to cost savings like less time in selling, lower transportation cost, no loading or unloading charge, no sales commission, lower spoilage and fair and quick weighment and payment, as compared with when they sold the same produce in *mandi*. The cost of production was higher among NF contract farmers (Rs. 6.67/kg in *bhindi* and Rs 3.8/kg in baby corn) than that among non-NF farmers (Rs 5.74/kg in *bhindi* and Rs. 3.66/kg in baby corn). NF farmers did not incur marketing cost since the produce was picked from the farm itself while Non-NF farmers had to incur marketing cost of Rs. 2/kg in case of *bhindi* and Rs. 1.78/kg in case of baby corn. Thus, average cost of production and marketing were higher among Non-NF farmers (Rs. 7.74/kg in *bhindi* and Rs 5.4/kg in baby corn) than that among NF farmers (Rs 6.67/kg in *bhindi* and Rs. 3.8/kg in baby corn). The resulting net income was also higher in case of NF farmers (Rs.3/kg in *bhindi* and Rs. 2.73/kg in baby corn) than that in case of non- NF farmers (Rs. 2.26/kg in *bhindi* and Rs 2.4/kg in baby corn). The major benefits of selling to NF were: lower transaction costs, timely supply of good quality inputs at lower than market price, and family labor saving.

However, some times, ABRL farmers defaulted due to lower price offered by ABRL compared to *mandi* price and higher production due to which farmers preferred to sell the entire produce to *mandi* to avoid marketing costs in two different channels. Lower quality produce and lower indent were major problems in supplying to ABRL. In case of NF, 62% farmers reported lower price and non-revision of the price when price in open market increased as their major problem. The other major problems in retail chain linkage were: lack of timely supply of agri-inputs and their poor quality, inadequate insurance cover, if crop failed, and delay in procuring the produce.

This lack of involvement of the chains with primary producers is also revealed by another recent study of RF operations in Karnataka (Pritchard et al, 2010) which states “---- supermarket purchasing in India tends to operate without contractual relations with farmer suppliers, and that buyers did not play prominent roles in on-farm monitoring. The practice

of CCs issuing their purchase requirements to farmers only the previous night does not promote any shifts in cropping patterns; this would happen only if there is a mechanism to inform farmers about the likely demand for different vegetables ahead of the planting season. -----The rapid winding back of these (procurement) strategies in favour of a looser system of procurement through CCs indicated a level of institutional incompatibility between the profit strategies of the company and the agricultural regions from which it was seeking to buy F&Vs” (p. 452).

Yet another recent study corroborates the above conclusions: “Organised retailers have brought a new institution for marketing of FFVs by creating a system of preferential payment for quality. The scale of direct procurement, being small, hasn’t yet impacted the local *mandi*, where farmers continue to sell bulk of their produce. However, the governance mechanism of the new supply chain created by the organized retailers has not been fully developed. The institutions related to contracts, payments, grades and standards, are yet to evolve. The marketing system of the organised retailers does not fit into the standard contract farming and corporate farming formats. Neither there is a pre-determined procurement price nor is input or technical support provided as part of this arrangement. It is mostly *contact farming* -- an informal procurement arrangement, where the retailers have informal arrangements with producers who can provide quality produce. There is no mechanism for sharing production and marketing risks. The procurement volumes and prices change daily based on the front end demand (communicated by the head office) and prices at the local market. Each party is free to explore better avenues of procurement and sale. If these arrangements have to expand and succeed, there is a need to evolve a code of conduct for commercial relations among retailers and the producers” (Sulaiman et al, 2010).

### **8.213 Punjab and Haryana**

ITC’s Choupal Fresh procured about 60% of F&Vs from mandi and 40% from farmers through the consolidator. The farmers were paid *mandi* price and 10% premium on A grade produce. The consolidator was paid a net commission of Re. 0.37 per kg. of produce and Rs. 700/day to transport the produce from the field to the retail store in Chandigarh. About 54% of ITC farmers were associated with it for the last 1-2 years. Of the total farmers

interviewed, 54.5% were local and the rest leasee migrant farmers. The average operated area of retail chain farmers (9.91 acres altogether) and of the leasee and the local farmers separately (8 and 11.5 acres respectively) was higher than the average size of the operational holding at the state level -Punjab 9.36 acres and Haryana 5.26 acres.

Small farmers accounted for only 36% of the total growers of the retail chain. The proportion of small operators was higher among the leasee category (50%) and only 25% among local landholders compared with the proportion of small and marginal holders in the two states - Punjab 35.4% and Haryana 66.7%. The average income/month from dairying and off farm activities was higher in case of local farmers (Rs. 5417 and Rs. 2541 respectively) than that in case of leasee migrant farmers (Rs. 1200 and Rs. 250 respectively). But, leasee migrant farmers, on an average, put about 60% GCA under vegetables compared to only about 23% in case of local farmers although cropping intensity across both categories was similar (211 and 221).

ITC procured about 23% of cauliflower and bottle gourd each from leasee migrant farmers compared to only 15.5% of cauliflower and bottle gourd each in case of local farmers. The rejection rate was only 2%. However, rejection rate of leasee migrant farmers' produce was lower (1.7%) as compared to that of local farmers (2.25%). The average yield was higher in case of leasee migrant farmers (85 qtls. in cauliflower and 104 qtls. in bottle gourd) than that in case of local farmers (81.11 qtls in cauliflower and 97.8 qtls. in bottle gourd). The farmers realized somewhat higher price in ITC channel (about Rs. 5.5/kg in cauliflower and Rs. 4.2/kg in bottle gourd) compared to that in mandi channel (Rs. 5.1-5.4/kg in cauliflower and Rs. 3.9-4/kg in bottle gourd). Leasee migrant farmers realized lower price in mandi as compared to that realized by local farmers. The average cost of production was higher among local farmers (Rs 3.89/kg) compared to that in case of leasee migrant farmers (Rs. 3.35/kg). The ITC farmers did not incur any marketing cost (except the packing cost in polythene for bottle guard) since the produce was picked from farm itself. The net income for each crop in each channel was higher for leasee migrant farmers than that for local farmers.

Major reasons for selling to ITC were: no transportation costs, time saving, higher price, and supply of crates, free of cost, to pack vegetables. But, about 77% farmers were not satisfied in linking with ITC. The major problems faced were: low volumes procured and low price overtime. The leasee farmers being professional vegetable growers had better yields as well as better quality produce. The chain was not able to make an impact on the growers as it was procuring too little because it was not able to sell the procured produce in the market where it faced competition from other retail chains and local retailers and farmer's market. More recently, the chain has wound up its retailing and procurement operations in the region.

In brief, ABRL and RF in Gujarat and ABRL in Karnataka procured vegetables from the contact farmers who delivered at the CCs established near the farmer's field on their own. The produce was then sorted, graded and sent to the DC. After the final sorting and grading, the produce was delivered to the retail stores. ITC's Choupal Fresh in Punjab and Haryana and ABRL in Belgaum in Karnataka procured vegetables through the consolidator on commission basis though in Punjab, the produce was picked up from the farm by the consolidator. The consolidator in Belgaum had both contact and contract farmers who delivered the produce at his CC-cum-DC. But, NF in Karnataka had informal, oral and non-registered contract with farmers and produce was picked at farm gate. The retail chains in Karnataka were more inclusive (more so in case of NF) than that in Gujarat, and Punjab and Haryana. In Karnataka, the retail chains procured the entire produce of the contract farmers, except the rejected produce. However, these chains procured 15% to 59% of total produce from 'contact' farmers across different locations; based on the day to day indent. The rest of the produce was left for the farmers to sell elsewhere. The major problems faced in linking with retail chains were: low volume procured due to lower indent and purchase of only A grade produce by most of these chains.

#### **8.214 F&V retail chains and upgrading of producers**

Many aspects of the interface of retail chains with farmers can be cases of upgrading. For example, chains have brought quality consciousness among farmers, introduced grading (primary processing) and helped in cost cutting by extension and training on input use for better yield. This is especially true of NF which works with significant field level extension

and input supply unlike RF (Pritchard et al, 2010). Since NF was also involved in export oriented production and processing, besides domestic retailing, it brought in export market currents into their domestic operations and procured various grades of farm produce which could be sold in different market segments. Thus, their involvement with growers was more wholistic and deeper. Thus, they helped really smallholders to move from field crops like cereals to vegetable (high value) crops (product upgrading), and with new production methods like micro irrigation, *nano* bags, and low use of chemicals (process upgrading).

Upgrading existed only partly in case of ABRL which has a FPIP, but not in case of RF or ITC Choupal Fresh which hardly provided any support to growers and just procured only quality produce from the total produced by growers. In the case of these chains, since they procured from established vegetable pockets and farmers, it did not lead to any upgrading for most of the farmers. Further, upgrading was not sustainable as chains procured only part of the produce and farmers still had to sell large chunk of their produce in the open (wholesale) market. .

#### *8.22 Impact on traditional retailers*

A higher proportion of the traditional retailers sold vegetables in Bangalore (60%) compared with that in Ahmedabad and Chandigarh (46-47% each) whereas the proportion of fruit sellers was higher (41%) in Ahmedabad and that of both F&V sellers higher in Chandigarh (36%). The average distance of the retailers from organized retailers was higher in case of Chandigarh (1.1 kms.) than that in Bangalore (0.7 kms) and Ahmedabad (0.5 kms.) which perhaps points to the lower density of modern retail outlets in Chandigarh. The average number of years of presence of the organized retail outlets was two in Bangalore and only 1.6 years each in Ahmedabad and Chandigarh. Across both Ahmedabad and Bangalore, RF and More were the nearest organized retail outlets to the local retailers as reported by 48% and 35% retailers respectively in Ahmedabad and 45% and 18% retailers respectively in Bangalore. In Chandigarh, More, Big Bazaar, RF, and Spencer's were the nearest organized sector outlets.

In Ahmedabad and Bangalore, about 45-48% each of the retailers sold F&Vs as street/roadside hawkers as compared to only 16% in Chandigarh where 41% retailers sold F&Vs in local neighbourhood or colony markets as compared to only about 21-23% each in Ahmedabad and Bangalore. 16-17% retailers each in Ahmedabad and Bangalore also operated as stand alone shops and near small malls respectively. The number of retailers selling in the market popular for special products was higher in Chandigarh (21%) followed by Ahmedabad (11%) and Bangalore (3%). The traditional retailers in Bangalore had the highest number of footfalls both during week-days (138) and week-ends (155) followed by Ahmedabad (113 during week-days and 103 during week-ends) and Chandigarh (94 during week-days and 101 during week-ends) before the entry of organized retail chain outlets. But, with the emergence of these new players, number of footfalls declined across all locations. The %age decline in footfalls was the highest in Bangalore (35.5% during week-days and 27% during week-ends) followed by Ahmedabad (32% during week-days and 26.6% during week-ends) and Chandigarh (17% during week-days and 14.9% during week-ends).

Further, number of regular customers visiting the outlets came down everywhere after the entry of modern retail chains, more so in Ahmedabad and Bangalore and the decline was as much as 20%. In Ahmedabad and Bangalore, 60% and 45% respectively reported decline in sales compared with only 33% in Chandigarh. Bangalore traditional retail sellers reported the largest decline in their turnover (22.5%) and income (31%) followed by Ahmedabad (12.3% and 27.8% respectively) and Chandigarh (9.7% and 19.6% respectively). Another recent survey based study also reports 78-89% traditional retailers reporting decline in sales, profits and customers across cities in Haryana, Tamilnadu, Uttar Pradesh, Karnataka and Delhi. They reported 17-29% decline in sales, 16-23% in profits and 13-25% decline in customers and 49% were aware of closure of some traditional outlets (Kalirajan and Singh, 2009).

### ***8.3 Policy issues and suggestions***

#### **8.31 Producer Interface**

Supermarket quality and safety requirements influence the types of producers willing and able to supply them. The need to supply large volumes to strict delivery schedules and to meet high and consistent quality standards means that the preferred suppliers of supermarkets

are primarily large growers. As traditional markets are increasingly replaced by supply chains to national and international supermarkets, small producers in developing countries must adjust or face increasing marginalization. However, establishing supply relations with supermarkets is both difficult and costly. In some cases, costs of compliance are prohibitive, particularly where producers aim to secure access to supply chains on an individual basis. Further, even coordinated groups of small producers struggle to meet such requirements.

‘Contact farming’, as practiced by F&V retail chains in India, is an informal arrangement which does not bind the buyer and the seller. This is not in the interest of the growers as their market risk is not shared by the retail chain buyers. The system of no written contracts and consignments places the financial risks solely with the producers/suppliers and retail chains do not run any financial risk. The retail chains can eliminate all financial risk from their end of the chain due to this direct procurement from growers as they do not need to maintain stocks, do not bear price risk and have no commitment to buy. Besides, they have control over and traceability of production, reduced risk of low quality produce, can impose standards and production requirements anytime, and lower prices as there are no intermediaries. This puts farming businesses under pressure which is passed on to the workers on the vegetable farms who are often women which results in deteriorating work conditions, very low pay and casual employment on the farms (Stichele et al., 2006).

There is a preference among supermarkets to deal with individuals rather than groups of farmers. At the same time, individual farmers seem reluctant to deal directly with supermarkets, both because of the difficulties cited above and, probably, because of a lack of confidence in working in a different environment. This need not be an insurmountable problem because small farmers can work with farmer leaders or work in groups, cooperative or associations with one focal point who deals with the buyers. The danger remains that by the time small farmers get organized to supply supermarkets, the tightly coordinated supply chains will have developed in such a way that new entrants will be excluded. This seems most likely in those countries where land regulations present no significant barrier to farm consolidation (Shepherd, 2005).

But, the exclusion of small farmers from participating in food chains does not appear to be, in any way, automatic. There have been cases of success when public or private assistance to the growers in terms of technical assistance and supply of input credit was made available. In some places in Brazil, small farmers have gone in for collective tanks to meet the scale requirement though the large farmers will have an advantage as they do not face the transaction cost involved in collective use of physical assets. The dairy companies and cooperatives encourage the use of collective tanks, even by financing or facilitating credit for milk producers in some cases (Farina, 2002).

Market access for small producers depends on: (a) understanding the markets; (b) organization of the firm or operations; (c) communication and transport links and (d) an appropriate policy environment (Page and Slater, 2003). Understanding markets in modern context involves understanding value chains and networks and their dynamics from small producer perspective. What is important is not comparative advantage anymore but competitive advantage of the commodity or product especially when it is produced under smallholder conditions. The main requirements of small farmers in this changing environment are better access to capital and education. Management capacity is as important as physical capital but is the most difficult thing to provide. Further, collective action to deal with scale requirements needs to be designed to satisfy new product and process standards or to avoid exclusion from the supply chain. Collective action through cooperatives or associations is important not only to be able to buy and sell at a better price but also to help small farmers adapt to new patterns and much greater levels of competition (Schwentesius and Gomez, 2002).

### **8.32 Role of Policy**

On the policy front, the following steps are needed:

- a. The functioning of APMC markets needs to be improved to enhance their cost efficiency so that producers could realize better prices. The amended APMC Act allows for the setting up of private markets. It is also necessary to have an open auction system, improve buyer competition in markets, provide better facilities such

as cold storage and improve farmers' access to market information (Gandhi and Namboodiri, 2005). These markets are important to small farmers and even a significant proportion of medium and large farmers, who still depend on them; they also serve as the main competitors to contract and 'contact' farming (practised by retail chains) and can improve the terms offered by retail chains to growers (Singh, 2008).

- b. The role of the policy can be leveraged by pro-small producer policies and facilitating supportive policies. This could be in the form of support for infrastructure, consistent policies for a specific period of time and encouragement to new institutions which promise to deliver better value to growers. Clear rules of the game as far as policy about markets and players is concerned including contract farming policy and rules and policy on co-operatives, producer companies, and self-help groups are also needed. The state could step in with financial incentives for partnerships with small producers or provide revolving fund besides monitoring quality and standards.
- c. There is also need to strengthen small farmer organizations and provide them technical assistance to increase productivity for the cost competitive market, provide help in improving quality of produce, and to encourage them to participate more actively in the marketing of their produce in order to capture value added in the supply chain. Further, the problem of financing the small producers needs to be tackled by finding innovative ways to provide finance. There are a large number of institutional arrangements to co-ordinate the small producers which should be assessed for their relevance and effectiveness in a given context, though a priori, it seems the co-operative and other similar forms of farmer organization are more relevant and sustainable, especially the New Generation Co-operatives (NGCs) which are voluntary, more market oriented, member responsive, self-governed, and avoid free riding and horizon problems as they have contractual equity based transaction with grower members (Singh, 2004; Hazell, 2005). In India, Amul has been able to successfully link up/integrate small and marginal milk producers with the national and international milk markets. It is estimated that 21% of its nine million members are landless and another 66% small and marginal farmers (Gandhi et al, 2001; Pingali and Khwaja, 2004). Some of the co-operatives like those dealing with sapota

(chickoo) in south Gujarat have also attempted quality based grading and pooling system, and contractual relations with members for procurement, along with market orientation strategies like multiple outlets, and efficient use of market information to achieve better business performance (Singh, 1997). In fact, co-operative form of organization of even farm production activity by resource constrained farmers has been found to be more efficient than private farms in Romania (Sabates-Wheeler, 2002). All this can be done through the producer company route which is available as a legal option in India now (see box for details).

Though the concept of producer companies is noble, the companies organized under the Act are facing many problems which are stumbling block in their teething years. Firstly, the producer companies are not yet recognized by the union or state government for any incentive or support. Secondly, banks refuse to lend to these companies due to lack of state or government guarantees. They also face difficulties in getting Agricultural Produce Marketing Committee (APMC) licenses due to traditional co-operatives already having licenses in some places. Finally, and most importantly, these companies are not allowed to mobilize capital from the market. This capital constraint, like their traditional counterparts, makes it difficult for producer companies to set up facilities to do value addition and marketing. It is sad that even after 5 years of existence of the law on producer companies, neither the state nor the development agencies have tried to create awareness of the concept and its practice.

The government, both the union and the state, should recognize producer companies as producer co-operatives and extend all the support as extended to traditional co-operatives. The state governments should instruct their co-operative banks to extend investment and working capital credit to these producer companies. They should also instruct their Agricultural Marketing Boards to extend license to these companies for trading and processing without any conditions. The state governments should ask their Agro Industries Corporations and Departments of Industries to extend investment capital and working capital grant to these companies for processing and marketing infrastructure creation. The producer companies practicing organic farming can be designated as certifying agencies for third

parties and individual growers by the union government agencies like the APEDA. The promotional and NGO bodies promoting and supporting these companies should be given project based grants by the state/union government. The producer companies should also be exempted from any income or turnover taxes levied on their business as they are producer owned and since agricultural income is tax exempt, same could be extended to these producer companies. Above all, nothing should be done to jeopardize the future of these companies from the legal side in terms of changing their status. There is a need to let them work under the present Act for another 5-10 years and learn from experience.

#### **Box 8.1 Producer Companies**

*In the light of previous experience of poor performance of traditional co-operatives in India, it was felt that there was need to give more freedom to co-operatives to operate as business entities in a competitive market. This led to the amendment to the Companies Act, 1956 in 2003 which provided for producer companies through a separate chapter based on the Alagh Committee Report. Producer Companies came into existence with the amendment of section 581 of the Companies Act, 1956, in 2003. This amendment gave primary producers the flexibility to organize themselves on the basis of a one man-one vote principle which is the essence of a co-operative institution. A Producer Company operates under the regulatory framework that applies to companies which is distinctly different from that of the co-operatives which was seen as arbitrary and corrupt.*

*A producer company can be registered under the provisions of Part IX-A, Chapter one of the Companies Act 1956. The objective of the said company can be production, harvesting, procurement, grading, pooling, handling, marketing, selling, and export of primary produce of the members or import of goods or services for their benefit. Its membership can be 10 or more individual producers or two or more producer institutions or combination of both. It is deemed to be a private limited company but there is no limit on membership which is voluntary and open. It is a limited liability company by share and not a public limited company. under the Companies Act. It is deemed to be a private company within the meaning of Section 581C(5) of the Companies Act, 1956. It retains one member-one vote principle irrespective of shares or patronage, except during first year when it can be based on shares.*

*Like traditional co-operatives, it provides limited return on capital, but can give bonus or bonus shares based on patronage. It is named ‘producer company limited’. It can issue only equity shares, that too, based on patronage and these are not transferable shares but are tradable within the membership. Even land can be treated as share capital. It is free to buy other producer companies’ shares and to form subsidiary/joint venture/ collaboration/ new organizations. It can have 5-15 Directors, Chairman, and ex-officio Chief executive but Multi-state Co-operative Societies can have >15 Directors for one year. It can co-opt expert or additional directors without voting rights. It lays emphasis on member education, and co-operation among producer companies. If it fails to start business within an year, registration can be cancelled. The audit has to be conducted by a Chartered Accountant appointed by the General Body.*

*The producer companies come close to the New Generation Co-operatives (NGCs) in other parts of the world especially in USA and Canada. An NGC is one which has restricted or limited membership, links product delivery rights to producer member equity, raises capital through tradable equity shares among membership, enforces contractual delivery of produce by members, distributes returns based on patronage, goes for value addition through processing or marketing, and makes use of information efficiently throughout the vertical system. However, it retains one member- one vote principle for major policy decisions (Harris et. al., 1996; Nilsson, 1997). The advantages of delivery rights shares for members are assured procurement price and market, share of profits due to value addition (residue claims), and appreciation of share price due to better performance of the co-operative (Harris et. al, 1996). This kind of restructuring, especially equity linked delivery shares, and contractual delivery of produce, helps co-operatives to tackle problems; of free riding by membership, of horizon which is at the root of financial constraint, and that of opportunism, both of the members as well as of the co-operative. This arrangement by co-operatives has helped them become economically efficient, financially viable, and obtain member loyalty wherever it has been tried (Harris et.al., 1996; Nilsson, 1997).*

### **8.33 Regulation of chains**

On the other hand, regulation of retail chains to control or mitigate their market power can be an effective tool to ensure the presence of small growers in value chains as seen in the case of banana trade regime in pre-WTO period in the EU policy, single channel (monopoly) exports by producer bodies in some exporting countries like South Africa, and regulation of domestic import markets in France (Gibbon, 2003). Also, provisions for legally binding and clearly worded rules for fair treatment of suppliers, an independent authority like retail commission to supervise and regulate super markets for supplier, consumer and labour aspects and support to local retailers is required. There should be a ban on buying of products below cost and selling below cost. The delay in the pace of supermarket expansion helps, especially the restriction on FDI in retail which did lead to negative impacts elsewhere e.g. in Mexico (Durand, 2007).

### **8.34 Role of retail chains**

FFV procurement systems also depend upon firm-specific variables such as size, degree of national coverage, format, path-dependency, general or FFV-specific marketing strategy (price vs. quality marketing strategies). The interplay of these firm-specific variables with the country-specific variables determines how supermarkets choose their partners, integrate backwards into the FFV channel, and design contractual arrangements with various partners to provide a higher quality or service to their customers. Even though standards are not yet very developed, marketing to supermarkets is a big challenge for small farmers. One of the major limiting aspects for these growers is the volume marketed; no supermarket wants to negotiate small volumes with a multitude of small farmers (Codron et al, 2004).

In Thailand, South Africa, Kenya, and Zimbabwe, small producers were compliant as a result of public-private partnerships that included significant support to small suppliers. Firstly, small producers had to work cooperatively and be tightly coordinated so that they could meet the volume and quality requirements of the supply chains. Secondly, the supermarket or their supplier played a significant role in organizing groups of producers and/or providing expertise and/or physical inputs that were not available through existing institutions. Thirdly, communication via telephone, fax or more sophisticated technologies was a key component

of these successful operations. Fourthly, producers had to chill product or deliver rapidly to a chilling facility. Finally, and perhaps most importantly, small producers had to supply a high quality product on a consistent basis. Further, in some cases they provided value-added services like washing, trimming, cutting, grading, labelling, and packing the product. Indeed, this was a source of the competitive advantage of smaller producers that were able to provide the required care and at a lower cost than larger growing operations. Supermarkets and/or their suppliers need to work closely with groups of producers in order to communicate clearly their requirements and how (and why) these change over time (Boselie et al, 2003). Further, they have a role to play in facilitating compliance through programs that, over time, enhance the capacity and self-reliance of producers.

The chains give market price based prices to their contact farmers. Is it fair as in India market prices are so volatile? Why not work prices backward or forward based on market price of final products or cost of production as contract farming is based on that? If market prices are efficient, why did the chain have to go to growers? This is a serious issue as even a significant premium over market price may not help a farmer if open market prices go down significantly which is not uncommon in India. There is a need to reduce the vulnerability of growers due to fluctuations in market prices by offering minimum purchase prices, not market based premiums as is being done by the chain and other contracting companies now. The essence of contract farming, among other things, is a pre-agreed price which reduces farmer's market risk. But, market price based price no way ensures the farmer risk.

The retail chains also need to invest in linkage building. For example, a supermarket in South Africa provided interest free loans to 27 growers besides extension support (Shepherd, 2007). Similarly, many contracting agencies provide inputs on credit to their contract growers in India as costs of production and transaction for high value crops are generally higher and difficult for the grower to provide for from their own resources and networks. Equally importantly, retail chains need to invest in market end of the chain to increase demand for farmer produce to make better impact at the back end as right now they are marginal players in F&V and go by market prices and other terms and conditions of the local market and bank on cost advantage for the farmer, not better price realization as they procure only a small

proportion of the grower produce. While there are a few chains like NF which organize inputs/input advances, there is generally unwillingness on the part of the companies to become involved in financing farmers. Supermarkets can play an important role in facilitating the economic empowerment of poor small-scale farmers by providing interest-free loans (subject to approval of a business plan), an unlimited market for fresh produce and motivation and technical support through farm visits, and by offering training in quality standards and requiring progress reports (Louw et al, 2007).

Further, companies should promote group contracts with the intermediation of local NGOs and other organisations and institutions so that contractual relationships are more durable, enforceable, and fair. The groups or farmers' organisations like co-operatives not only lower transaction costs of the firms but also lower input costs for the farmers and give them better bargaining power. In contract arrangements with small producers in west African countries, the cotton companies started transferring some of the operational or functional responsibilities like distribution of inputs, equipment orders, and credit repayment management, to the village associations in the 1970s itself. They provided these associations with management skills for these tasks. The companies relied on traditional village authority structures for organising the associations but limited the associations to one per village to simplify company purchasing, delivery and marketing procedures. This arrangement accounted for a significant part of each cotton company's success (Bingen et al, 2003). But, unfortunately, contracting companies and supermarket chains have not been very keen to organise or support co-operatives in India. Most of these channels also deal with individual growers and there has just been only one attempt by a private corporate agency (Tata Chemicals-Total Produce of Ireland joint venture – Khet Se- a wholesaler of F&Vs) encouraging the formation of grower groups or associations through the producer company route in India.

### **8.35 Role of State and Development Agencies**

Governments, NGOs, and donors can facilitate small farmers' access to three key elements in order to have the capacity to supply the supermarket channel: (i) market information identifying the buyer and its requirements, and establishing a market relationship such as

having an implicit or explicit contract from the supermarket or the specialised wholesaler, i.e., being on the list; (ii) viable organisation/association to reduce co-ordination costs and enforce delivery from members; and (iii) the requisite physical investments (say in equipment) and managerial improvements to meet the specific product and transaction standards required by the supermarket chain. Moreover, these elements can be mutually reinforcing, for example, having a contract (being on the preferred suppliers' list) acts as a substitute for collateral, inducing a bank to make a loan to a small farmers' group for the purchase of equipment.

Second, governments, NGOs, and donors can facilitate small farmers participating in the supermarket channel by helping the existing wholesale sector adjust to the needs of supermarkets. The European Bank for Reconstruction and Development (EBRD) has a programme in Hungary where it has helped wholesale markets to upgrade their facilities to meet the needs of the supermarket chains. This has the added benefit of keeping alive alternatives for the small farmers by increasing the competitiveness of the traditional channels. Third, governments, NGOs, and donors can facilitate tri- or quadri-partite relationships that facilitate smaller farmer participation. An example can be found in Indonesia, where a combination of a small farmer organisation (Makar Buah), a supermarket chain (Carrefour), a seed/chemical company (Syngenta), a government extension programme, and a specialised/dedicated wholesaler (Bimandiri), have formed a fruitful combination to market melons (Neven and Reardon, 2004). Carrefour supplies the guaranteed market, Syngenta the financing, and the wholesaler the intermediation and co-ordination.

The development agencies and projects need to internalize the fact that increasingly product markets will mean supermarkets. Therefore, market-oriented programmes and policies will indeed be supermarket oriented. If, in a given country, a few chains command majority of the food sector, then development policies and programmes need to learn how to deal with this handful of big companies. The development agencies also need to realize that small farmers and entrepreneurs have to gear up quickly to compete in the new markets that are spreading over most of the food economy. The local market niches are disappearing and the distinction

between global and domestic market is getting blurred. The government and the donors will have to focus their programmes not just on exports but also on the growing market of the local supermarkets. It is important to promote good business practices that optimize retailer-supplier relations, protecting both sides. This can be initiated by establishing or improving contract regulations and business rules of practice some of which are already available in the form of legal acts in the US and Argentina. These practices can also be forced by private sector codes of practice. However, regulations do not ultimately change the economic forces under which the supermarkets operate and the changes in procurement systems are driven by these forces. These changes and the basic requirements they impose on growers are conditions which will have to be met if the growers are to be able to tap the powerful market of the supermarkets. Therefore, it is crucial that government and donor agencies help small farmers and entrepreneurs to make the investments in equipment, management, technology, commercial practice and the development of strong and efficient organizations to meet those requirements. There have been such attempts in Brazil and Guatemala (Reardon and Berdegué, 2002). Public authorities must provide a policy environment that promotes mutually beneficial partnerships between supermarkets and small producers and a legal framework that protects the economic interests of the parties. They also have a role in the development of infrastructure, from road networks to extension services and rural credit institutions, which meet the needs of small producers operating within supermarket supply chains, particularly whilst private sector capacity develops (Boselie et al, 2003).

### **8.36 Traditional retailer interest protection and involvement**

So far as impact on local retailers (neighbourhood stores) is concerned, there is need for a zoning regulation on the pattern of Indonesia (Stichele et al, 2006). Our findings also show that traditional retailers have suffered 20-30% decline in sales after the entry of retail chains in the study areas. Though it is not entirely due to the chain impact as the year 2008-09 also saw recession but, definitely, there is an impact of the chains on the traditional retailers as they do attract their buyers due to the ambience of stores and, sometimes, cheaper F&Vs as these chains buy in bulk or buy directly from growers and avoid many market charges which vendors have to pay. Therefore, at least the residential localities of cities could be kept free of retail chain outlets.

The new street vendor policy acknowledged that hawkers need to be provided a "natural market" in public places where their services were needed. No hawker should be evicted without giving him/her adequate notice and without relocating him/her in a place where his/her income would not be adversely affected. The policy stated that in every city and town, hawking zones should be demarcated not arbitrarily but in places where hawkers were likely to find customers, and identifying these zones should be a participatory process. No hawker could be removed in the guise of 'beautification' (Bunsha, 2007). There were many instances where large stores were kept outside the city and far removed from traditional markets. In Japan, amendments were being proposed to the large-scale retail store location law in order to revitalise city centres and support the smaller retailers in them. Hypermarkets were not allowed within 3.5 km of housing estates or city centres in Malaysia. Indonesia prohibited hypermarkets within 500 metres of traditional markets. And, large stores of more than 40,000 sq ft should be at least two and a half kilometres from traditional markets (Srivathsan, 2007). Malaysia was the only country in Asia where licensed street vendors were provided facilities for conducting their trade and the government also provided credit facilities for them (Bhowmik, 2005).

There have been some Corporate Social Responsibility (CSR) attempts by a few chains to rope in traditional vegetable and fruit sellers into their operations as partners which did not succeed. ITC Choupal Fresh tried it unsuccessfully and abandoned as when the vendors were given push carts free and also promised a minimum daily remuneration, they had no incentive to sell well. Similarly, Best Price wholesale of Walmart-Bharti has financed about a dozen pushcart vendors who sell under the banner of Best Price wholsesale in Amritsar but the initiative does not seem to make a mark as these carts are not frequently seen in the city. On the other hand, a local initiative by a local businessperson in Ahmedabad – Harra Fresh-seems to be more promising as it involves former traditional F&V retailers in mobile van based sales of perishables which has computerised billing and weighing system and delivers almost at the door step as it visits identified housing colonies/areas on a fixed day and timing basis. In keeping with the store policy of promoting community development, SPAR in Thohoyandou in South Africa had refrained from trading in mangoes and tomatoes. This was

in an effort not to compete directly with the informal traders and, therefore, not to threaten their livelihoods and income generation opportunities. This had served to further elevate the rapport SPAR enjoyed with the local community (Louw et al, 2006).

There is also need to treat traditional F&V retailers, and street vendors, in general, as part of the city life and protect their interest with adequate policy and legislation. Though national policy on street vendors was framed in 2004, there is not much implementation of the same at the state and local level despite courts ruling on creating space and facilities for such sellers. Urban planning needs to integrate the interests and concerns of such retailers into city plans (Bhowmik, 2007). There is also need to organise such retailers on the lines of SEWA in Ahmedabad to give them voice and protect their livelihoods.

In Ahmedabad, vendors were allocated physical space by studying the typology of the vending activity. At Mansi Apartment, 150 vegetable vendors had been given a built platform for carrying out their business activity by the Ahmedabad Urban Development Authority in return for collection of charges. At Jivraj Park Cross roads, Vejalpur, 400 vegetable vendors had been allowed to carry out business on the street side in exchange for payment by the Vejalpur municipality (Dalwadi, 2010). Various stakeholders in street vending i.e. municipal corporations, traffic authorities, city planners, corporate bodies, NGOs and vendors' groups or associations can be involved in the process of planning for street vending.

Finally, there is a need to combine value chains promotion with a livelihood perspective to enable the resource poor to enter into and stay into value chains-domestic or global. Innovations in smallholder market linkage are needed in terms of partnerships, use of Information and Communication Technologies (ICTs), leveraging networks, value chain financing, smallholder policy and, even in contracts which can promote both efficiency and inclusiveness of the linkage (Mendoza and Thelen, 2008). Choosing right market and market development strategy is must to scale up and avoid 'race to the bottom' which can come only by innovation of products and business models (GTZ, 2007). It is not market access or participation but effective market participation which is at the heart of success of any market

linkage for primary producers. There is need to establish multi-stakeholder initiatives in the chains to protect small producer and vendor interest. Support by state/development agencies for small producers and vendors to enable them to compete with quality and cost efficiency could be quite helpful.

## References

- Alam, G. and D Verma (2007): “*Connecting small-scale farmers with dynamic markets: A case study of a successful supply chain in Uttarakhand*”, Centre for Sustainable Development, Dehradun, India.
- ADB (Asian Development Bank) and IFPRI (International Food Policy Research Institute) (2009): *High Value Crops and Marketing- strategic options for development in Uttarakhand*, Academic Foundation, New Delhi.
- Barghouti, S, S Kane, K Sorby and M Ali (2004): *Agricultural Diversification for the Rural Poor – Guidelines for Practitioners*, ARD Discussion Paper 1, World bank, Washington.
- Bhagat, V. and M.S. Sidhu (2008): “Migrant vegetable sellers in Ludhiana city: A Case Study”, *Indian Journal of Agricultural Marketing*, 22 (1), 1-12.
- Bhowmik, S.K. (2005): “Street Vendors in Asia: A Review”. *Economic and Political Weekly*, 40(22-23), 2256-64, May 28th-June 4.
- Bhowmik, S.K. (2007): “Street Vendors in Urban India: The Struggle for recognition”, in J Cross and A Morales (eds.): *Street Entrepreneurs-people, place and politics in local and global perspective*, Routledge, London, 92-107, chapter 6.
- Bingen, J, A Serrano and J Howard (2003): “Linking farmers to markets: different approaches to human capital development”, *Food Policy*, 28, 405-419.
- Birthal, P.S., P K Joshi. and A Gulati (2005): **Vertical co-ordination in high-value food commodities: Implications for smallholders**, MTID discussion paper 85, IFPRI, Washington.
- Blandon, J., S. Henson and J. Cranfield (2008): “Small-Scale Farmer Participation in New Agri-Food Supply Chains: Case of the Supermarket Supply Chain for Fruits and Vegetables in Honduras”, *Journal of International Development*, 21(7), 971-984.
- Boselie, D., S Henson, and D Weatherspoon (2003): “Supermarket procurement practices in developing countries: redefining the roles of the public and private sectors”. *American Journal of Agricultural Economics* 85 (5): 1155-1161.
- Boriss, H, H Brunke, and M Kreith (2006): **Commodity Profile: Cauliflower**, Agricultural Issues Centre, Agricultural Marketing Resources Centre, University of California, downloaded from [aic.ucdavis.edu/profiles/cauliflower-2006.pdf](http://aic.ucdavis.edu/profiles/cauliflower-2006.pdf) on July 15, 2010.
- Bunsha, B. (2007): “On the stress”, *Front Line*, July 13, 2007.

- Cadilhon J-J, P Moustier, N D Poole, P T G Tam and A P Fearne (2006): “Traditional vs. Modern Food Systems? Insights from Vegetable Supply Chains to Ho Chi Minh City (Vietnam)”, *Development Policy Review*, 24(1), 31-49.
- Chowdhury, S. K., A. Gulati, and E.Gumbira-Sa’id (2005): “The Rise of Supermarkets and Vertical Relationships in the Indonesian Food Value Chain: Causes and Consequences”, *Asian Journal of Agriculture and Development*, 12(1&2), 39-48.
- CII-AT Kearney (2006): *Retail in India-getting organised to drive growth*, a CII-AT Kearney Report, November.
- Codron, J.M., Z Bouhsina, F Fort, E Coudel, and A Puech (2004): “Supermarkets in Low-income Mediterranean Countries: Impacts on Horticulture Systems”, *Development Policy Review*, 22(5): 587-602.
- Cygnus (2007): *Food Processing –India*, Cygnus Business Consulting and Research, Hyderabad.
- Dalwadi, S. (2010): “Integrating Street Vendors in City Planning: The Case of Vadodara” in S. Bhowmik (ed.) *Street Vendors in the Global Urban Economy*, Chapter 5, 87-119, Routledge, New Delhi.
- Das, D. (2006): “Street vendors demand to be organized”, *The Hindu Business Line*, July 27.
- Datta, A. and S. Bhattacharaya (2007): Fresh@yaani sabkuch taaja (Fresh@means everything fresh), *Images Retail*, 4(3), 30-33 (in Hindi).
- Dhananjaya, B.N. and A U Rao (2009): “Namdhari Fresh Limited”, in M. Harper: (2009) *Inclusive Value Chains in India – Linking the Smallest Producers to Modern Markets*, World Scientific, Singapore, Case study 1, Chapter 3, 26-41.
- Durand, C. (2007): “Externalities from foreign direct investment in the Mexican retailing sector”, *Cambridge Journal of Economics*, 31 (3), 393-411.
- Farina, E M M Q (2002): “Consolidation, Multinationalisation, and Competition in Brazil: Impacts on Horticulture and Dairy Products Systems”, *Development Policy Review*, 20 (4), 441-457.
- Gajanana, T.M., D.S. Murthy, M. Sudha, and V. Dakshinamoorthy (2006): “Marketing and Estimation of Post Harvest Losses of Tomato crop in Karnataka”, *Indian Journal of Agricultural Marketing*, 20 (1), 1-10.
- Gandhi, V P, G Kumar and R Marsh (2001): “Agroindustry for Rural and Small Farmer Development: Issues and Lessons from India”, *International Food and Agribusiness Management Review*, 2(3/4), 331-344.

Gandhi, V. P. and N V Namboodiri (2005): ‘Fruit and vegetable marketing and its efficiency in India: A study of wholesale markets in the Ahmedabad area’, in J. Sulaiman, F. M. Arshad and M. N. Shamsudin (eds.) *New Challenges Facing Asian Agriculture Under Globalization*, Proceedings of the Asian Society of Agricultural Economists (ASAE) Conference, 2002 held at Kuala Lumpur, Malaysia Vol. 2, 520–538.

GTZ (German Technical Co-operation) (2007): **International Conference: Value Chains for Broad Based Development**, May 30-June 1, 2007, Conference Report.

Ghezan, G, M Mateos and L Viteri (2002): “Impact of Supermarkets and Fast-Food Chains on Horticulture Supply Chains in Argentina”, *Dev. Policy Review*, 20 (4), 389-408.

Gibbon, P (2001):“Agro-Commodity Chains: An Introduction”, *IDS Bulletin* 32(3), July, 60-68.

Gibbon, P (2003): “Value Chain Governance, Public Regulation and Entry Barriers in the Global Fresh Fruit and Vegetable Chain into the EU”, *Development Policy Review*, 21(5-6), 615-625.

Giuliani, E, C Pietrobelli, and R Rabellotti (2005): “Upgrading in Global Value Chains: Lessons from Latin American Clusters”, *World Development*, 33(4), 549-573.

GoP (Government of Punjab) (2005): *Statistical Abstract of Punjab, 2005*, Economic Advisor to Govt. of Punjab, Chandigarh, Feb. 2006.

Gopalakrishnan, S. and P. Srinivasa (2009): “Corporate Retail: Dangerous Implications for India’s Economy”, *Economic and Political Weekly*, 44(32), 48-55.

Harper, M (2009): “Development, Value Chains and Exclusion” in M Harper *Inclusive Value Chains in India – Linking the Smallest Producers to Modern Markets*, World Scientific, Singapore, Chapter 1, 1-10.

Harris, Andrea, B Stefanson, and M Fulton (1996): “New Generation Co-operatives and Co-operative Theory”, *Journal of Cooperatives*, Vol. II, 15-28.

Hazell, P B R (2005): “Is there a future for small farms?”, in D Colman and N Vink (eds.): *Reshaping Agriculture’s Contributions to Society*, Proceedings of the 25<sup>th</sup> Intl. Conference of Agricultural Economists (ICAE), August, 16-22, Blackwell, USA, 93-101.

Hernandez, R., T Reardon, and T Berdegué (2007):“Supermarkets, wholesalers, and tomato growers in Guatemala”, *Agricultural Economics*, 36 (3), 281-287.

Joseph, M, N Soundrarajan, M Gupta and S Sahu (2008): *Impact of Organised Retailing on the Unorganised Sector*, Indian Council for Research on International Economic Relations (ICRIER), New Delhi, May.

Joseph, M, and N Soundrarajan (2009): *Retail in India- A Critical Assessment*, Academic Foundation, New Delhi.

Kalhan, A (2007): “Impact of Malls on Small Shops and Hawkers”, *Economic and Political Weekly*, 42(22), 2063-2066.

Kalirajan, K and K Singh (2009): The Impact of Globalisation on Employment Generation in India: The case of emerging ‘Big Shopping Malls and Retailers’, ASARC Working Paper No. 2009/18, Nov. pp.21.

Kannan E and K Shah (2010): **Determinants of stagnation in production of important crops in Karnataka**, Institute for Social and Economic Change (ISEC), Bangalore report no. XI/ADRTC/127, June, Bangalore, Draft.

Kolady, D., S. Krishnamoorthy and S. Narayanan (2007): An “Other” Revolution? Marketing cooperatives in a new retail context: A case study of HOPCOMS, [http://www.regoverningmarkets.org/en/resources/south\\_asia/india\\_marketing\\_cooperatives\\_in\\_a\\_new\\_retail\\_context\\_a\\_case\\_study\\_of\\_hopcoms](http://www.regoverningmarkets.org/en/resources/south_asia/india_marketing_cooperatives_in_a_new_retail_context_a_case_study_of_hopcoms) Accessed on 18th November, 2009.

Kumar, N.R., N.K. Pandey, and R.K. Rana (2008): “Marketing and Post-Harvest Losses in Cabbage and Cauliflower in West Bengal”, *Indian Journal of Agricultural Marketing*, 22 (3), 25-37.

Kumar, V., Y Patwari, and H N Ayush. (2008a): “Organized Food Retailing: A Blessing or a Curse?” *Economic and Political Weekly* 43 (20), 67-75.

Louw, A., H Vermeulen and H Madevu (2006): “Integrating small-scale fresh produce producers into the mainstream agri-food systems in South Africa: The case of a retailer in Venda and local farmers” for *Regional consultation for linking farmers to markets: Lessons learned and successful practices*, Cario, Egypt. <http://www.globalfoodchainpartnerships.org/cairo/papers/AndreLouwSouthAfrica.pdf>

Louw, A., H Vermeulen, J Kirsten, and H Madevu (2007): “Securing small farmer participation in supermarket supply chains in South Africa, *Development Southern Africa*, 24(4), 539-551.

Mangala, K.P. and P G Chengappa (2008): “A Novel Agribusiness Model for Backward Linkages with Farmers: A Case of Food Retail Chain”, *Agricultural Economics Research Review*, 21(Conference Number), 363-370.

Mendoza R U and N Thelen (2008): “Innovations to make markets more inclusive for the poor”, *Development Policy Review*, 26(4), 427-458.

Minten, B. and L. Randrianarison and J.F.M. Swinnen (2009): “Global Retail Chains and Poor Farmers: Evidences from Madagascar”, *World Development*, 37 (11), 1728-41.

- Misra, B (2009): “Surfing the Churn”, *Progressive Grocer*, 3(10), 82-86.
- Misra, R.S. (2009a): “ITC Choupal Fresh” in M Harper: *Inclusive Value Chains in India-Linking the Smallest Producers to Modern Markets*, World Scientific, London, case study 2, chapter 3, 42-61.
- Mittal, S. (2007): **Can horticulture be a success story for India?** Working paper: 197, Indian Council for Research on International Economic Relations (ICRIER), New Delhi.
- Miyata, S. and N Minot. and D Hu (2009): “Impact of Contract Farming on Income: Linking Small Farmers, Packers, and Supermarkets in China”, *World Development*, 37(11), 1781-1790.
- MDFVL (Mother Dairy Fruits and Vegetables Limited) (n.d.): **Mother Dairy Fruit and Vegetable Limited –Fruit and Vegetable Unit- Central Distribution Facility, Mangolpuri, Delhi**, a PPT.
- Moustier, P, T G Tam, D T A, V T Binh, N T T Loc, (2010), “The role of farmer organizations in supplying supermarkets with quality food in Vietnam”, *Food Policy* 35 (1), 69-78.
- Murthy, C. and L. K. Wader (2007): “Quality characteristics influencing price of important vegetables in Karnataka”. *Indian Journal of Agricultural Marketing*, 21 (1), 71-82.
- Murthy, D.S., T.M. Gajanana, M. Sudha and V. Dakshinamoorthy (2007): “Marketing Losses and Their Impact on Marketing Margins: A Case Study of Banana in Karnataka”, *Agricultural Economics Research Review*, 20(1), 47-60.
- Neven, D. and T Reardon (2004): “The Rise of Kenyan Supermarkets and the Evolution of their Horticulture Product Procurement Systems”, *Development Policy Review*, 22 (6), 669-699.
- Neven, D., M.M. Odera, T. Reardon, H. Wang (2009): “Kenyan Supermarkets, Emerging Middle-Class Horticultural Farmers, and Employment Impacts on the Rural Poor”, *World Development*, 37(11), 1802-1811.
- Nilsson, J (1997): “New Generation Farmer Co-ops”, *Review of International Co-operation*, 90(1), 32-38.
- Page, S and R Slater (2003): “Small Producer Participation in Global Food Systems: Policy Opportunities and Constraints”, *Development Policy Review*, 21(5-6), 641-654.
- Pingali, P and Y Khwaja (2004): “Globalization of Indian Diets and the Transformation of Food Supply Systems”, *Indian Journal of Agricultural Marketing*, 18(1), 2004, 26-49.

Porter, M (1985): *Competitive Advantage: Creating and Sustaining Superior Performance*, The Free Press, New York.

Prakash, V (2008): "Linking Farmers to Market: Some Successful Case Studies from India" in APAARI: *Linking Farmers to Market: Some Success Stories from Asia-Pacific Region*, Asia-Pacific Association of Agricultural Research Institutions (APAARI), Bangkok, 85-112. May.

Premchander S (2002): **Cooperative for Sale of Fruits and Vegetables: A Success Story of Urban Horticultural Marketing -HOPCOMS (Horticultural Produce Cooperative Marketing Society)**, Sampark, Bangalore.

Pritchard, B., C. P. Gracy and M. Godwin (2010) "The Impacts of Supermarket Procurement on Farming Communities in India: Evidence from Rural Karnataka", *Development Policy Review*, 28(4), 435-456.

Punjabi, M. and V Sardana (2006): "Initiatives and issues in fresh fruit and vegetable supply chains in India" in P.J. Batt and J.J. Cadilhon (eds.). *Proceedings of the international symposium on fresh produce supply chain management*, December 6-10, Chiang Mai, Thailand, 115-125.

Rajkumar, P.K., S B Mahajanashetti, H Basavaraj, H S Vijayakumar, and Y N Havaldar (2008): "Farmer's Coverage under Market Intervention Scheme in Karnataka", *Agricultural Economics Research Review*, 21 (1), 67-72.

Reardon, T and J A Berdegué (2002): "The Rapid Rise of Supermarkets in Latin America: Challenges and Opportunities for Development", *Development Policy Review*, 20 (4), 371-388.

Reviron, S. and J M Chappuis (2005): "Effects of Swiss retailers' strategy on the governance structure of the fresh food product supply chains", *Agribusiness* 21 (2), 237-252.

Ruben, R., D Boselie and H Lu. (2007): "Vegetables procurement by Asian supermarkets: a transaction cost approach", *Supply Chain Management: An International Journal* 12 (1), 60-68.

Sabates-Wheeler, R (2002): "Farm Strategy, Self Selection and Productivity: Can Small Farming Groups offer Production Benefits to Farmers in Post –Socialist Romania?", *World Development*, 30(10), 1737-1753.

Schmitz H and P Knorringa (2000): **Learning from Global Buyers**, Institute of Development Studies (IDS) Working Paper No. 100, IDS, University of Sussex, Brighton.

Schwentesius, R and M A Gomez (2002): “Supermarkets in Mexico: Impacts on Horticulture Systems”, *Development Policy Review*, 20 (4), 487-502.

Shepherd, A W (2005): “The implications of supermarket development for horticultural farmers and traditional marketing systems in Asia”, revised version of the paper presented at the **FAO/AFMA/FAMA Regional Workshop on the Growth of Supermarkets as Retailers of Fresh Produce**, Kuala Lumpur, October 4-7, 2004, FAO, Rome.

Shepherd, A W (2007): *Approaches to linking producers to markets-a review of experiences to date*, AMMF Occasional paper 13, Food and Agri. Organisation (FAO), Rome.

Singh, S (1997): “Managing Marketing: Co-operatives in Horticultural Business in South Gujarat”, *Indian Journal of Agricultural Marketing*, 11 (1&2), 73-82.

Singh, S (2004): “The New Generation Co-operative: Theory, Practice and Relevance”, *The Co-operator*, 42(5), 229-230.

Singh, S (2006): “Leveraging ICTs for Inclusive and Sustainable Agricultural and Rural Development in India”, in Sailabala Debi and V B Annigeri (eds.): *Sustainable Development and the Indian Economy: Issues and Challenges*, Serials, New Delhi, 1-15.

Singh, S (2008): ‘Marketing Channels and their Implications for Smallholder Farmers in India’, in McCullough, E.B., Pingali, P.L. and Stamoulis, K.G. (eds.): *The Transformation of Agri-food Systems: Globalization, Supply Chains, and Smallholder Farmers*, FAO, Rome and Earthscan, London, Chapter 14, 279-310.

Singh, S (2009): “Spencer’s Retail” in M Harper: *Inclusive Value Chains in India-Linking the Smallest Producers to Modern Markets*, World Scientific, London, case study 4, chapter 3, 76-88.

Sridhar, V. (2007): “Retail invasion”, *Frontline*, July 13.

Srivathsan, A (2007): “Regulating space”, *Frontline*, July 13, 25-27.

Stichele, M V, S v d Wal and J Oldenziel (2006): **Who reaps the fruit? Critical Issues in the Fresh Fruit and Vegetable Chain**, Centre for Research on Multinational Corporations (SOMO), Amsterdam, June.

Subrahmanyam, K.V and T.M. Gajanana (2000): *Cooperative Marketing of Fruits and Vegetables in India*, Concept, New Delhi.

Sulaiman V, R., N.J. Kalaivani and J. Handoo (2010), **Organised Retailing of Fresh Fruits and Vegetables: Is It Really Helping Producers?** Working Paper: 2010-01, Centre for Research on Innovation and Science Policy (CRISP), Hyderabad, India.

Talukdar, T (2010). “Vegetable Soup for the Soul”, *The Economic Times*, Ahmedabad, August 22, 2010, p.9.

Vaikunthe, L.D. (2000): “Regulatory framework for agricultural marketing: A case study of APMCs in Karnataka”, *Indian Journal of Agricultural Marketing*, 14 (3), Conference special, 1-7.