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Nilabja Ghosh

India's Agricultural Marketing

Market Reforms and Emergence of New
Channels

 Springer

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*To the interests of the Farmers, Processors
and Traders who operate in small units
and to my mother who always
encouraged me*

Preface

Allowing more freedom to the markets for agricultural products, especially permitting the commercially driven private corporate sector to find a place to compete in the market and procure from farmers is one of the most contentious issues facing the Indian political economy today. This policy direction apparently also remains to be a major step forward in the course of India's economic reforms.

Our study is an attempt to provide an objective country-wide picture of the progress achieved in this direction and the implications sensed so far. Exploration of field-level evidences gained in this project suggests that while market efficiency improves with the reforms, the government needs to take serious account of issues of equity and several other complexities that relate to the future of competition, farm practices and price discovery. Interestingly, the study also finds that while states may drag their feet, chained by political obligations, regardless of legislative changes, all states are showing their internal dynamics in marketing of agricultural products.

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The book brings together, in a given framework, information gained from different regions. The partner institutions involved in the primary studies at the state level under my coordination not only undertook a major burden of data collection but prepared at the regional levels, their own reports which could be extremely useful to any interested reader. Careful inspection, validation and consistency checks of the primary data have been essential components of this meta-analysis.

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I will fail in my duty if I do not recall and acknowledge the cooperation of Dr. Ananda Vadivelu who was my colleague and partner in this study at the inception stage. I thank Mr. M. Rajeshwor for assisting me with this project at every stage with intense effort. I also thank Ms. Shipra, Ms. Shweta, Ms. Supriya Sharma and Ms. Roopal for helping me with the tables and with the manuscript at various stages of the work.

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Chapter 1

Introduction

It is believed that marketing reforms can potentially improve producer incomes and also deliver food at lower prices to consumers. Infusion of modern technology and managerial practices will reduce unproductive marketing costs including product wastage while shorter market channels will release social capital that was diverted perhaps wastefully to meet intermediary margins. New horizons of agricultural development can be opened up by institutional changes, exploiting the unknown domains of human wants and by unleashing the productive aspirations of farmers. Marketing reforms would undoubtedly mean giving more space for the market to develop in keeping with the emerging reality. On the contrary, history has provided a bitter lesson on what an unregulated market, driven by profit motives, can do to rural societies. Employment of numerous traders tied up in the market chains is a serious issue that no government can discount. Thus, even if markets are not relegated to the stranglehold of blind regulations, the watchful eye of the state and critical evaluation of emerging systems are indispensable.

Revisiting of the existing marketing regulations in place is undoubtedly a key achievement of reforms in agriculture in India. The emergence of new marketing channels in an antiquated system dominated by a stark lack of pluralism and the promise of more path-breaking changes to come are the essential milestones of this revolution. A Model Act produced and circulated in the early 2000s by the central government, meant to override the pre-existing legislation, was what set the reforms in motion although early signs of reforms were seen in some states even without the Act. By bringing the producer and consumer closer and attracting investment into the financially starved functioning of the agricultural markets, the new set of regulations on marketing could be a way to empower the Indian farmers, eliminate rural poverty and engineer a new phase of fast growth in the country's economy.

Agricultural marketing is however not simply an economic issue, it is a deeply political subject as well. Experiences gained in the earlier phase of reforms in agriculture that aimed at the removal of subsidies and reduction of price support to

farm production have amply demonstrated the near impenetrability of the agriculture sector to the forces of market changes. Reforming marketing is no less challenging. Any change in this structure will send shock waves that might touch the lives of a larger number of agents including producers, traders, processors and consumers, whether for better or for worse. The affected parties will include both winners and losers. The possibility that the winners could include powerful corporate entities and even multinationals and the losers could possibly be weaker sections of Indian farmers and the unorganized milieu of intermediaries trading in food items makes the implementation of any policy towards market reforms extremely difficult in the political economy. The replacement of the existing structure by an unknown and evolving one therefore conjures misgivings. Experiences of other countries attempting to reform are useful but can hardly be deemed adequate for suggesting India the way.

In the last few decades, marketing in many western countries especially the USA evolved into complex and highly sophisticated structures marked by substantial managerial and technological innovations and vertical integration. During this period, the Indian agricultural marketing system remained constricted in a middlemen dominated network with extensive state regulations. Across the world, between developed and developing countries and even among the developed countries, marketing systems displayed marked variations especially with regard to state and private involvements. The merits and demerits of various systems are hard to assess not only on account of the difficulty of comparing across product varieties, climates and political regimes and because lack of public information is a hallmark of some of these systems but also because instances of both success and failure of reforms are equally common in different countries. Indeed, ironically, literature repeatedly underscores the risks of promoting non-transparency, creating entry barriers and potential new avenues of exploiting the producers inherent in reforms.

While reforms are seen to be a powerful tool for achieving high growth rates, growth alone cannot bring major improvements in economic and social well-being of the population (Mitra 2013). Inclusiveness and agricultural development are also deeply interrelated subjects. No agricultural policy can instill dynamism in an economy where 40 % of the agricultural land operated by small and marginal farmers lies beyond its pale and also where the industrial policy fails to rise to the urgency of developing the large sections of small farmers in the country (Vyas 2013; Sengupta 2013). The emerging marketing channels can only be meaningfully beneficial if they draw participation from the smallholding farmers.

Do farmers gain from the new system over what was surviving earlier, do the gains reach all sections of farmers especially the large mass of small and the poor farms and does agriculture benefit from the reforms are questions that need to be explored. The possibility that the pre-existing structure of marketing may also transform itself and turn more efficient under the emergent 'contestable' market with the entry of new entities cannot be ruled out either. That the army of functionaries locked in the market channels of the existing regulated system is a facade for disguised unemployment and needs to be redeployed to more

productive avenues in keeping with management practices of the time cannot be ruled out either. The reforms raise deeply confounding economic concerns also. Whether the emergent markets are a step towards greater competition or a mere invitation for powerful players to wipe out the less powerful traders in an unequal market is an unresolved issue. Whether they will benefit only exclusive sections of farmers and exaggerate rural and regional inequality is another. Will the reforms create a mechanism of price determination that is far different from the one we are familiar with is a deeply intriguing question. Will reform weaken the state's power to give a direction and a shape to agriculture? Will the regulated markets and traditional traders become redundant in the competitive markets saturated by modern and organized players? This document based on field-level evidences gathered at this initial stage of markets reforms in agriculture seeks to address some of these qualms.

At the outset, it is important to recognize that reforms in question are yet in a state of infancy only. Emergence of new marketing channels in India has been neither uniform nor ubiquitous nor has it replaced the traditional market chains that tied the farmers to their customers, many of whom are located in the growing cities. If anything, they have surfaced sporadically, with certain systems appearing in specific regions that seemed to be the fertile grounds suitable for their proliferation, and these channels vary widely among themselves. They have even failed to emerge altogether in many places. In some cases, indigenous forces imposed severe hindrance, and what evolved was more novel and probably more aligned to local sociopolitical reality than what was expected. Part of the success in the emergence of new channels and the pattern of emergence can be attributed to legislative action in the states, but part of it is embedded in the politics and culture of the region.

1.1 Evolution of Agricultural Markets: No End in Sight

Markets, celebrated in folklores, ballads and history of societies, have been an integral institution in human culture and development. They never ceased to draw the interests of social scientists. The surprises they regularly sprang and the complexities they concealed baffled economists and divided ideologues. Marketing has today developed into an organized subject matter in the broader discipline of managerial sciences.

Marketing is essentially a transaction that involves an exchange that is intended to address specific human needs. Viewed on a broader perspective, marketing covers ideas, people and places. It may be driven by multifarious motives, profit being only one of them. In a business context however, marketing is today defined as a challenge to satisfy consumer's wants 'at a profit', but the phrase 'in a socially responsible manner' is also desired to be added. A system-based definition views marketing as the creation and delivery of an entire 'standard of living' to consumers. It is not just the transaction but also the method, the

manner and the ambience in which it takes place. In business, marketing is a comprehensive concept which combines a multitude of activities like selling, merchandising, advertising, product development and distribution (Stanton 1983).

1.1.1 From Subsistence to the Exchange Economy

The primitive agrarian society is marked by a subsistence system where production is done purely to satisfy the producer's family or community consumption needs and not for exchange. Any surplus incidentally generated may be sold to someone who has an incidental shortfall. Thus, primitive marketing is extremely small in scope and scale and is a direct exchange between the seller-producer and the consumer-buyer. Economic development is associated with a tendency to specialize so that the producers intentionally produce more than what they need personally and other classes of individuals begin to specialize in producing other commodities, some of them migrating to urban areas. A continuous rise in demand for food and agricultural products takes place in urban areas. In this stage too, trading is direct and is confined to a limited volume; this proves to be a constraint to development as food becomes a limiting factor to industrialization (Lewis 1954).

As the division of labour progresses, a group of individuals gradually specialize themselves to link the producer with the consumer. This way the producer, relieved of the marketing function, is free to devote all effort at production, and the consumer procures the essential provisions with minimal effort. Essentially, the barrier created by the physical distance between the producer and the consumer is increasingly diminished by the creation of a class of traders who make food available at the time and space of consumer convenience. These specialized marketing agents are the middlemen operating in the space between the producer and the consumer, and their functioning requires the availability of a moderate capital base. The transactions lead to a flow of incomes for the traders.

In most countries, the market gradually evolves into a complex system that appears in layers of submarkets and as chains involving wholesalers, other intermediaries and retailers. These agents serve various purposes and operate in different modes, working for profit, commissions or fees. The marketing system not only generates temporal and spatial transformation of the consumable goods, but value addition to the product (selection, processing, packaging, advertising and branding) also begins to blend in the chains. Although these wholesaler-retailer-based market chains are common in many sectors including industrial goods, it is most evident in the agriculture sector. The functioning of agricultural marketing creates many political contentions especially through its implications for the flow of goods to consumers. With the development of marketing, the state too, in the interest of the citizens, becomes actively involved in regulating the flow of essential

goods to urban consumers and imposes a number of rules, restrictions and charges on the transaction and movement of goods. In rare cases, the state becomes a trader too. Cooperatives of farmers are another route promoted by states.

1.1.2 The Unresolved Middleman

The middlemen in the marketing chain are often the most maligned class of people worldwide. 'Let's eliminate the middleman' has been a slogan echoed by consumers, business people and legislators in the western world, but in practice, the elimination has been far from easy though they are blamed for exploiting and even cheating the producers and claiming a large chunk of the profit generated in the transaction. In reality, although the middlemen generally hail from areas proximate to the production centres, they have better knowledge of the market than the producers do. They take full advantage of this privilege, so that asymmetric information becomes a dominant feature of the relation between the producer and the middleman-buyer. Admittedly, they do disseminate the information among rural producer to an extent and are therefore important conduits of knowledge flow in the traditional marketing system. The enormous gap that is often observed between the price that the urban customer pays and the price that a farmer receives is often attributed to the large number of middlemen that build up in the chain and to their outdated and sometimes mendacious practices.

It must be admitted that this is a controversial subject. The margin that middlemen seek to retain can also be explained by the multifarious useful functions they perform. They bridge the gap between the atomistic and often ignorant producer and the distant consumer, know the government rules and regulations and help in physical and informational exchanges. They are also known to provide timely finance and even inputs to the needy producer. They operate in underdeveloped territories with poor accessibility and abysmal communication facilities where the organized sector hesitates to infiltrate and are willing to undertake the risk of operating in an environment enveloped in considerable uncertainty. The informal and personalized nature of their ties with producers helps to make the relation sustainable. Their rudimentary accountancy practices fail in capturing these services. With numerous trading agents operating, conditions are close to perfect competition when producers have a choice of selling to the highest bidder. Thus, whether the margin appropriated by the trader is unjustified or not is not easy to conclude.

It is however often agreed that the middlemen tend to operate in near-primitive levels of organization. They are very slow to modernize their operations, and trust and word of mouth remain to be the main plank of their relations with their business associates. Also unknown to the producers or consumers, the space between them becomes congested and increasing number of middlemen join the chain whether necessary or not and add to the margins. Moreover, they often collude and form local oligopsonists to act against the interest of the farmers who, contrary to what is expected from a market, are left with little choice. This is further facilitated by

corruption within the state regulatory system that leads to a nexus between traders and officials which in effect sets up barriers against new entries into the market and keeps the producer prices depressed.

Two of the most dominant arguments in favour of the traditional marketing channel consisting of a plethora of middlemen are (1) it is conducive to employment generation especially in a country where large sections of people are unskilled and (2) traders have a competence to operate in the difficult and informal ambience of rural economies that can hardly be matched by the more sophisticated organized sector. The flip side of the system includes their primitive methods and informal ways of operation and the fact that under this system farmers receive prices much lower than what the consumers are made to pay and the spread between the two prices is large. When international marketing opportunities are opened up and rural development becomes a serious policy affair, the system may be even less in tune with what the situation demands.

1.1.3 Agricultural Markets and Competitions

Agricultural markets have been held to be the proximate examples of the concept of perfect competition that drives many economic theories. Perfect competition is characterized by innumerable sellers selling comparable goods (no brand identification), and there is no barrier to entry into and exit from the market, conditions that would no doubt rarely be satisfied in entirety in real world. Supervised auctions are often the way to price determination in agricultural markets, but there is no consensus that the traditional market with a large number of agents adds to the competitiveness of the market or displays the efficiency that a perfectly competitive market is expected to produce. An alternative theory upholding a concept of 'contestable market' on the contrary relaxes the assumption of the innumerable operators but arrives at similar results as from perfect competition. With a limited number of operators and a threat of competition looming large, the market is expected to operate in a way it will do theoretically when there is perfect competition.

Economies around the world embarked on a path of liberalizing markets, some of them from the 1980s and others in the 1990s. The states changed the rules of the game by relaxing the regulatory frameworks and proactively encouraged the emergence of alternative market models in preference to one that was based on either state monopolies or the chain of middlemen operating under state regulations. This could result in a reversion to direct producer-consumer interface in the market, but other possibilities could shorten the chains without compromising on specialization through vertical integration. Large corporate bodies endowed with capital and marketing skills may have the option of participating in the channels for profit. The variety of organizations and supply chain relationships is an integral part of the evolution, raising possibilities of revolutionary benefits to society as well as of

social and economic injustice far profound in nature than known so far. Tolerance, understanding and balanced assessment of nonstandard and unfamiliar business practices would be essential in the next stage of marketing reforms.

1.1.4 Vertical Integration

Integration shows the relationship among the firms in a market.¹ Horizontal integration occurs when an agency gains control of another one performing the same functions leading to added competency, higher market concentration, increased synergy but reduced competition. Vertical integration, on the other hand, refers to a single agency performing more than one activity in the sequence of the marketing process so the different market functions coalesce and the number of functionaries diminishes. Specifically, this definition points to the aspect of ownership within the supply chain and can be associated with vertical expansion of firms. Companies reduce costs and improve efficiency such as by decreasing transportation expenses, avoiding subtle transaction costs and reducing turnaround time, when it expands its business into areas that are at different points on the same production path. When a manufacturer or a food processor owns its supplier and/or distributor, it is a case of vertical integration.

In a broader perspective, however, the linking together of two or more functions in the marketing process within a single firm or a conglomeration of collaborating firms is also an instance of vertical integration so that close and seamless coordination between sequential activities is enabled. Integration of closely allied activities such as procurement of products from farmers and their storage and processing functions could also exploit latent economies of 'scope' (Mansfield and Yohe 2010). Such functions can move one step closer to consumption (forward integration) or to producer through the ownership or amalgamation of sources of supply (backward integration) in the chain. Mergers are one dominant method to achieve the coordination, but often, the motivation comes from other sources such as to pre-empt mergers among downstream competitors (Colangelo 1995). On the other hand, there are other considerations such as reputational forces that may come in the way of mergers when firms facing the choice resort to other forms of vertical coordination like joint ventures, alliances and other organizational arrangements to conserve 'equity' (Garvey 1995). When marketing firms including large retail chain operators contract with farmers to buy agricultural products of a certain category, it helps to strengthen the vertical coordination within the supply chain.

¹ Vertical integration is the degree to which a firm owns its upstream suppliers and its downstream buyers. Contrary to horizontal integration, which is a consolidation of many firms that handle the same part of the production process, vertical integration is typified by one firm engaged in different parts of production (e.g. growing raw materials, manufacturing, transporting, marketing and/or retailing).

1.2 Context

Reforms as such are not new to agriculture in developing countries and have been known in India since the Royal Commission on Agriculture was set up in 1928. Regulations were introduced in developing countries and to an extent in developed countries too in the years succeeding the World War II, for one or more of various reasons like protection of producers from unfair practices, conservation of food security for one and all and employment generation. In many developing countries, the motivation came from the desire to reinforce centralized political power and eliminate external food dependency in a complex geopolitical configuration. Domestic self-sufficiency and socialistic philosophy inspired public policy in development of the South Asian countries, in which sectoral policies, especially agricultural incentives, were awarded primacy over macroeconomic balances. Macroeconomic concerns began to receive attention only in the 1980s, but nevertheless, reforms in agricultural markets remained either absent or at best slow except to an extent in Sri Lanka and Bangladesh (Ahmed 1996).

In India, reforms in agriculture took off in the 1990s, accelerating with the signing of the WTO treaty in 1995, but more focused consideration was visible only in the first decade of the twenty-first century especially when legislation on marketing was suggested. However, the pace of reforms continued to be slow and vacillating because of contrasting positions taken by the central and the different state governments. While the share of agriculture in the national GDP has dwindled by this time, giving way to other sectors to develop, a staggeringly large proportion of the people, most of whom are poor and unskilled, were employed in agriculture and in the trading of farm goods. A very large proportion of the farms are of miniscule dimensions due to land fragmentation taking place in the wake of the population expansion which occurred in the past decades. The small size of the farm comes in the way of modern and commercial ventures in agriculture although there are contrary views on this matter also.

The reforms in marketing of agricultural commodities would expectedly curtail the number of intermediaries that operate between the producer and the consumer and shorten the market chain. Why would such a curtailment be desirable? Since each intermediary operates for a margin, the mass or the 'spread' that divides the prices received upstream from those paid at the consumer end expands in magnitude and compresses the two sets of prices in either direction. With the surgical intervention of economic policy leading to a reduction of market intermediaries, the ideal result would mean gains to both farmers who receive higher prices than before and consumers who pay lower prices for the same commodity as these margins contract with reforms.

1.2.1 Apprehensions: Real or Misplaced?

In reality, however, things could be quite contrary. Firstly, the reduction in the number of operators and the presence of marketing entities with far greater market power in terms of finance, experience, legal prowess and political clout could result in excessive bargaining strength accruing on the curtailed intermediation. Such intermediaries would now be likely to include large international companies. When farmers are poor, individualistic and lacking in knowledge and support, the imbalance of power can be immense and the effects far more diabolical than what could be found in the traditional system.

The extent of vertical integration in channels could mean newer forms of coercions and exploitations that would tend to remain invisible to observers outside the channel. Secondly, the response of prices at both ends can be poor when the limited intermediation ends up replacing alternative channels (such as local traders and local retailers) by virtue of market power. The effect on prices would still be influenced by the incentive and ability of agricultural supplies to respond to demand. Above all, displacement of large sections of trading intermediaries will be the source of a serious political and economic crisis although it is anticipated that the food industry will create substantial and superior quality employment opportunity.

In a globalized market, the large buyers operate across the country and often even across different countries. They have a greater choice available to them for buying supplies from elsewhere and can turn the system against the economic interest of the farmer who is constrained by local geographical and agronomic conditions. Indeed worldwide, large food chains are probably as much maligned as the wholesalers and commission agents. Exploitation, high margins and suppression of producer prices to low levels are common misgivings directed at the modern supermarkets (Ghosh 2012) even in developed countries.

On the consumer end, the product turns up in the shelves in a vastly value-added (stored, transported, sorted and graded, cleaned, packed, processed) form and in an artificially designed setting (conveniently located with parking space, air-conditioned with 'frills' and comforts and displayed attractively in varied assortment to offer choice and fulfillment of consumer needs) so that price comparison with the traditional vendors is not always possible, nor relevant. Even the nutritional worth of the food sold is also not always comparable and has not escaped to critics' attention.

On the other hand, since the market is intrinsically free and flexible under the reformed system, theoretically at least, the threat of competition from other potential players is sustained, and this can serve as a check on the existing players and compel competitive behaviour on part of the large intermediary. The price effect (both on farmers and consumers) can come not only by the reduction of the channel length but by the scale effect created by the large volumes of transactions, fiscal advantages like reduced tax incidences due to vertical integration diminished product wastage and the efficiency of the modern agents who rely

on mechanized and organized methods, information and scientific managerial practices.

Moreover, value-added services in terms of quality, labelling, packaging and processing of products, locational and delivery services offered to customers, and the aesthetic and comfort appeals of retail outlets in keeping with consumer tastes and the possibility of reaching overseas markets help to boost demand for farmers' products. Above all, the new markets that emerge may be engineered subtly through state policy so that the channel performs in a way that is consistent with what is needed. Regulation and reintermediation (as by NGO) may help to make this happen.

1.2.2 Potentials in India

India has been a country characterized by a severely regulated and controlled market, excessive emphasis on food grains and a large agricultural sector operated by mostly poor, uninformed and uneducated farmers, a very large proportion of whom operate smallholdings. In recent times, evidence has emerged that food habits of urban consumers are shifting from cereals to high-value products that include fruits and vegetables and other commodities that are now deemed as commercially lucrative. Production patterns also demand a shift to newer crops as excessive thrust on cereal production is leading to ecological backlash and piling stocks. The new products stand out in that they are easily perishable and require special arrangements for further processing, preservation and transportation. All this calls for investment. A new marketing order seems to be the demand.

Under the traditional system, considerable wastage takes place subsequent to harvest and in the marketing process, especially in transport, at the retail level and due to improper storage. Estimates suggest that postharvest losses could be as high as 30 % for both fruits and vegetables (Pulamte 2008; CHIPHET 2010). Despite the potential for value addition, only a small proportion of India's production of fruits and vegetables are processed, and this is considerably lower than the achievements in other countries like China, Japan and Brazil.² Substantial resources would be required to reduce spoilage of horticultural product and improve the extent of food processing. The reforms in agriculture have included a path-breaking amendment to the old APMC Act which was originally initiated during colonial times but revised repeatedly thereafter. The amendments suggested allow more resourceful operators to step into the market in addressing the exigencies. It may however be noted that the capability of the reformed system to reduce wastage is also gravely under doubt with evidences of huge wastages of food under the modern system. 'As much as 30 % of UK vegetables crops are not harvested due to them failing to meet exacting standards based on physical appearance', says a recent report (Fox and Fimeche

²These figures are unconfirmed by us.

2013). Reducing food wastage is now a key global concern, and the new marketing order could only be a way forward but not an answer to the problem.

While the centre has invited the states to follow the Model Act that it circulated, agriculture being a state subject, the success of the reforms in India still depends on what the states do, the agrarian conditions, social reality, political compulsions and the efficiency of implementation of the state governments being critical parameters of such actions. Reforms in marketing agricultural produce are an important component in the overall economic reforms in India. Several private companies and multinational majors with considerable experience in western and other developing countries are keen to enter India's traditionally largest sector with new and innovative models that promise to be efficient.

1.2.3 Alternative Marketing Models

Historically, the private sector had very little to do with India's agriculture except for its engagements with a few commercial crops like jute and tea. This separation is attributable both to the regulatory restraints under India's laws and to the inhibitive atmosphere that envelopes rural India. Reforms offer the possibility of allowing and inviting the sector to participate in agri-marketing. As a supplement or an alternative to regulated markets, private markets (market places) can be a way of making rural marketing more developed. In this way, the private companies are invited to join the government and the traders to bring with them their expertise and resources.

Contract farming is one emerging and promising model that is said to mitigate farmers' uncertainty about sales and prices, helps in upgrading technology and tailoring products for consumers' wants. Despite the perceptible advantages and the interest shown by private companies, its acceptance is resisted politically in many states due to various historical apprehensions. Private industries are keen on entering the retailing business to access the growing urban market. The pricing process that drives the private sector-run marketing process is challenging and even blurs the distinction among the models. Thus, price fixing is a formidable task for the retail organizations who often resort to contracts or quasi-contracts (Singh and Singla 2011).

Encompassing a large array of activities related to storage, transportation and processing of products and arousing commercial interest among related sectors like the real estate that also builds malls, organized retail accounts for hardly 5 % of India's retail market. The typical Indian retail outlets are very small and unorganized, a vast majority of them being run by family members. They lack the scale for reaping advantages in transport and have no control protocol on quality and no training on safe and hygienic storage, packaging or logistics. The retail sector has experienced limited growth over time and suffered high rate of spoilage of food harvest. Organized retailing was absent in most rural and small towns of India till recently.

The reforms not only raise prospects of growth in India's rural economy, but the rise of the retail industry in India is projected as an engine of growth for the country and the world at large in coming years (UNIDO 2009). Organized retailing in India has attracted foreign investors. Yet the entry of highly developed retail chain multinational companies into India's food marketing is one of the most contentious issues of the time. Until 2011, Indian central government denied foreign direct investment (FDI) in multi-brand retail, forbidding foreign groups from any ownership in supermarkets, convenience stores or any retail outlets. Even single-brand retail was limited to 51 % ownership and a bureaucratic process. In November 2011, India's central government announced retail reforms for both multi-brand stores and single-brand stores. In January 2012, India approved reforms for single-brand stores welcoming anyone in the world to innovate in Indian retail market with 100 % ownership. Although there has been a demand for raising FDI limits³ in multi-brand retail, actions are put on hold by political disagreements in a multiparty coalition-based government in India's democracy and compromises are unavoidable. 'Allowing FDI in multi-brand retail will require the free movement of agricultural produce', and the Department of Agriculture and Cooperation has been advised to 'urge the states to expedite the reforms in Agricultural Produce Marketing (APMC) Act'.

Organizations evolved spontaneously from local agents as traders, producers and self-help groups, and seller associations can also provide alternatives by coming together with common objectives and their carefully crafted rules of conduct. One such element that needs mention is the cooperative formed by market agents. Cooperatives have proved to be immensely successful in certain commodities and specific areas in India (e.g. dairy in Gujarat). Since profit is not the motive for this kind of association, price spreads between producers and consumers may be far less than when external entities are commercially involved. Participation of producers could be enhanced by the inherent reliability of the system as compared to that of commercial and powerful companies that provokes mistrust. Specialization of skill by training and deployment is possible in this organization along with incentive for infrastructural development and trade facilitation endeavours. However, for the success of cooperatives, leadership is an essential and scarce resource necessary along with state support. The option of strengthening cooperatives is emphasized by

³ Foreign direct investment (FDI) in retailing has been allowed only in single-brand chains restricting the growth of the sector. FDI in retail has recently been a major issue of political confrontation among the opposing parties in the central government and faced strong resistances from opposing state governments. In November, the issue was put to vote in the Parliament, and despite the contentions, the central government found majority support in favour of FDI in retail. It is now up to the state governments to accept the motion through legislation. FDI in multi-brand retail is allowed up to 51 % under government rules but subject to specified condition (Economic Survey 2012–2013). At least 50 % of the total FDI should be invested in 'back-end infrastructure', and at least 30 % of the value of procurement of manufacture and processed products should be purchased from Indian small industries, although the government will have the first right of procurement of agricultural products. The retail outlet may be set up only in large cities.

the critics of private sector-based reforms. Producer company is another extension of the idea of cooperative that brings it closer to legal companies.⁴

Reforms also raise the possibility of producers selling directly to consumers in sites and conditions created by government provision, of producers selling and negotiating as concerted groups in a competitive pricing process. Selling to the market through specialized private marketing agencies or to corporate processors sometimes intermediated by non-government organization is gaining popularity. Contract farming or contract marketing, seen as an innovative way of linking farmers with market, can follow variant model that can be centralized, government mediated, multipartite or intermediary while middleman are also involved and the models that are actually implemented may be suitably chosen and engineered.⁵ The thrust of a policy requires to be in encouraging the existent systems and promoting new ones to evolve and develop in directions dictated by the needs of the market.

1.3 Organization

The report is organized in the following way. Chapters 2 and 3 give a review of the literature that has grown up on the subject of reforming agricultural markets, discussing both the theoretical insights provided by different researchers on the possibilities created and the experiences in terms of history of agricultural marketing and the evidences found on reforming agriculture in a number of countries in the developed and developing worlds. In Chap. 4, we develop the conceptual framework that guides us in the analysis along with the focus, approach, data and methodology followed. We revisit the history, status and outlook on agricultural marketing in the country through legislation and other pathways in Chap. 5.

Initiating our report on the empirical analysis, we provide a background of the samples outlining the status of reforms in Chap. 6 and describing the socio-economic environments, the agriculture along with particulars about the specific crops under focus and the marketing regimes of the study areas in Chap. 7. In Chaps. 8, 9, 10 and 11, the results of the analysis are discussed as categorized by four different broad forms of emerging markets, namely, corporate marketing intermediation, contracts between producers and processors, marketing through organized retail chains and direct marketing by farmers to users. Interesting signs of transitions and possibility are noted even in states where the state governments have failed or refused to legislate reforms and where emerging markets are on the

⁴ An amendment to the Companies Act 1956 in 2003 gives producers the flexibility to organize themselves as producer companies through a separate chapter based on Alagh Committee Report.

⁵ The e-Safal is a variant of contract farming practice in areas of Karim Nagar district in Andhra Pradesh; this is an attempt to integrate the production decision, farm management, extension and marketing through vertical linkage involving a number of partners (Galab et al. 2013).

borderline of the traditional once. We have reported these evidences collectively separately in Chaps. 12 and 13. Chapter 14 integrates the results obtained on the different channels studied in Chaps. 8, 9, 10, 11, 12 and 13 to understand the impact with a meta-analysis of evidences, while Chap. 15 makes some conclusions on the performances of the emerging marketing channels in India and the course of reforms.

Chapter 2

Evolution and Reconstitution of Markets

Market liberalization in agriculture raises academic debates and political confrontations of the scale that few issues do. The very emergence of a full-fledged international trade organization (ITO) as the arbiter of free trade had once been largely held in check by apprehensions surrounding its implications for the domestic food economies. Laissez-faire, the 'invisible hand' and the Ricardian concepts of a free market are cherished but largely notional economic ideas for agricultural markets.

On the contrary, many of the imperfections of real-life markets can be combated by the state or the community which finds no place in the standard concept of a free market (Claude 1989). Even Adam Smith in his *Wealth of Nations* writes: 'The third and last duty of a sovereign is that of erecting and maintaining those public institutions', and Wicksell expresses his esteem for 'consultation between him (individual) and all other individuals or their delegates'. That a market with only a handful of operators behaving 'virtuously' as opposed to innumerable sellers can also deliver welfare gains that are comparable with perfect competition is conceptually a wider notion of an ideal situation¹ (Baumol 1982). The concept of 'co-production' has today brought community action to the centre stage of market (Ostrom 1996) economics. How free the agricultural markets should ideally be is undoubtedly a disturbing question that is hard to resolve.

The subject of agricultural markets has been addressed by economists, management scientists, sociologists and policymakers in different ways. That their analyses and assessments can be susceptible to oversimplification needs to be emphasized, given the complexity of the institutions, vagueness of definitions, differential behavioural responses, heterogeneous spatial expanses and the sheer

¹ William J. Baumol (1982) in a theory of 'contestable' rather than 'competitive' market writes: 'In the limit, when entry and exit are completely free, efficient incumbent monopolists and oligopolies may in fact be able to prevent entry. But they can do so only by behaving virtuously that is by offering consumers the benefits which competition would otherwise bring. Public policy must properly take into account ... in a decisive but diverse manner, the prospects of potential competition'.

dynamics of the issues. All of these are compounded by intangible factors such as transaction costs, unequal market power and the subjectiveness of human expectations and perceptions. This chapter reviews the literature to provide a background to the subject of marketing agro-products.

2.1 Markets and Marketing

The definition of market as an ‘operationalised atomistic realm of impersonal economic exchange of homogeneous goods’ (Harris-White 1996) is associated with the theory of price in microeconomics. So is the notion of the market as a ‘supreme medium for the expression of individual choice’ (Hodgson 1988) presupposing that transactions are voluntary and made on equal basis by fully informed individuals. Marketing today is a much more sophisticated, integrated as well as a differentiated collection of a broader spectrum of activities than conceptualized earlier, and so a redefinition has become an imperative as well as a challenge.

Today, textbook definitions of marketing essentially as ‘exchanges intended to satisfy human needs’ and, in the business context, as ‘satisfying consumer’s wants at a profit and in a socially responsible manner’ (Stanton 1983) transcend the conventional commercial objectivization. Marketing today is also a comprehensive concept with multiple and strategically coordinated activities in which the manner of marketing is as much important as the product marketed. Social responsibility, ethics and regulatory commitments increasingly become embedded in the marketing process.

It is ironic that marketing evolved from a point where selling was unimportant to the producer who was herself the consumer, and if any marketing was at all done, the strategies were simple. The role of exchange and a case for marketing arises as the self-sufficient society changes to an economy built around the division of labour, industrialization and urbanization. Vertical integration along with the formation of various alliances and conglomerations in the supply chain is the next step in this evolution when innovations in managerial practices aided by recent advances in information and technology hold out a new transition process for the future of marketing.

2.1.1 *The Agro-marketing Business and Market Chains*

In the evolution of markets, in the beginning, exchange is local with a direct interface, but as the division of labour progresses and distances between producers and consumers grow, specialized functionaries begin to emerge, helping farmers sell the increased output. The primitive ‘Do it yourself’ principle is replaced by ‘buy it’ as marketing becomes a specialized function that itself is transacted. Marketing identifies products that consumers would demand, persuades them to purchase, figures out how to sell them in the short term and the long term and also

adds value to the products. Sensitivity to the macroeconomic environment, demography (age distribution, gender, etc.), social and cultural factors, political and legal forces, technology and competition from other sources and allied products lies at the core of this function. With further sophistication of ‘analytics’, finer elements and micro-factors also get integrated in the marketing process and projection of the future becomes critical for devising long term marketing strategies.² Other facilitating organizations that provide transportation, warehousing, financing, insurance and other supportive services evolve and even coalesce with marketing.

A market channel includes producers, final customers and all the middlemen involved. The sequence of transactions and commodity movements between the initial producer and ultimate consumer is known as the marketing chain. Marketing science as a discipline makes subtle distinctions among the intermediaries. A middleman who takes title to the merchandise is known as a ‘merchandiser’, while an ‘agent’ only catalyses the transfer of ownership. ‘Wholesale traders’ are people who buy for resale or for business use but do not sell to ultimate consumers though in normal usage, the term covers both agents and brokers, working for profit or for commission who do and do not take title of the goods. In a restrictive sense, the wholesaler must necessarily accept the title to the goods.

The most widely known middleman in agriculture is the ‘commission agent’ who undertakes to sell part or all of a producer’s output in particular territories. This agent has continuing relation with the principals and usually represents several non-competing products. In the central market, the commission merchants meet their trains and trucks to take charge of the shipments; arrange the necessary storage, grading and other services prior to the sale; find buyers at the best possible price; make the sales; and arrange for the transfer of shipments. After taking account of the commissions, freight charges and other marketing expenses, they remit the balance to the local suppliers. It is not unexpected that this important agent will be most affected by marketing reforms.

Other intermediaries include the auctioneers who display the products and help to assemble buyers and suppliers, the brokers whose prime responsibility is to bring buyers and sellers together and provide marketing information without having to handle goods or decide prices and further down in the chain and the retailers directly conducting sale of goods or services to the ultimate consumers who buy for personal and nonbusiness use. Producers across the world complain of exploitative behaviour of middlemen and the low prices they deliver on products. They are known to be slow in adopting modern methods, and their managerial practices are informal and outdated. The businesses are underfinanced and manned with poorly qualified people. It is found to be easier to go into these trades, especially retailing business, than most other professions. Not surprisingly, mortality is higher among retail establishment than in many other competitions.

² An advertisement by a multinational company highlighting how slight variations in temperature or rainfall affect purchases of food products and switching between products underlines the growing sophistication of techniques in marketing.

2.1.2 Evolution of the Marketing Channel and Persistence of Dualism in Traditional Economies

Till the 1960s marketing in underdeveloped economies in literature largely remained mysterious black boxes from which supply of goods entered into the international market. Local food markets did not arouse research interest in the way that international trading did. Yet a much larger volume and variety of goods were handled in internal trade within Africa, Asia and Latin America. That the marketplace was a fundamental focal point of economic life in a peasant society and was 'as much a part of the socio-economic routine as farming' was however appreciated and emphasized in early studies in which location and periodicity of markets received special attention (Yang 1944; McBryde 1947; Berry 1967).³

The marketplace was initially seen as 'an authorised public gathering of buyers and sellers of commodities meeting at an appointed place at regular intervals' (Hodder 1965) with trading taking place on a simultaneous person-to-person basis. These transactions were ideally atomistic (a large number of independent buyers and sellers with no monopoly association), open (across many buyers and sellers who wish to attend the market), free (prices are fixed by supply and demand forces only) and rational (profit maximization) making up an ideal condition (Tax 1953) akin to perfect competition, something that is rarely met in real life. The channels involved were typically short.

Since a single intermediary could rarely afford the large amount of capital required for the entire marketing process, the number of functionaries increased over time, and the trader became a mere link in a long chain congested with other intermediaries (Bromley 1971). Thus, with the development of the internal market systems, the trading intermediaries grew in number and importance. Today, such long marketing chains operating in these 'formally free' markets are frequently condemned as inefficient, harmful to producer and consumer and responsible for unfair distribution of economic power (Weber 1978). On the contrary, by allowing the substitution of labour for capital, the long chains help to ease unemployment problem in developing countries.

Market systems fundamentally restructure with the emergence of new communication modes and changes in social structure. The length of a channel, defined as the configuration of institutions, agencies and establishments through which products move, is often used to describe the channel structure concisely. Shorter channels signify some degree of vertical integration. The presence of large wholesalers or multinational companies and a thirst for profit can be associated with vertical integration. Centrally or cooperatively administered vertical distribution systems also bypass traditional intermediaries with the objective of delivering food and income security.

³ Pioneering works such as C. K. Yang's (1944) description of markets in northern China and F. W. McBryde (1947) study of Guatemalan market may be mentioned. Interest picked up in the 1960s with publication of B. J. L. Berry's (1967) *Market Center and Retail Distribution*.

The evolution of markets at central locations and modelling of the evolution interested many economists and sociologists, location⁴ of marketplaces being an important aspect for understanding markets. In urban centres, these central places are generally at short distances from dwellers' homes, but residents living away have to travel. Markets are sometimes also located at communication nodes with maximum accessibility (such as a river junction and bridges, bus stations) away from the populated areas. Travelling vendors were found to gain from the practice of locating periodic markets in 'rings' in Korea by a study (Stine 1962) building up a simple evolutionary model of trading in which the itinerant finally settled down as population reached a certain bulk. Thus, the distance between the producer and the consumer and the convenience of commutation were always important aspects in the evolutionary trajectory of markets.

It is suggested by the literature that small traders dominate trading in early stages, but as the scale expands over time, permanent shops outcompete even the simple stalls in the marketplace. The new classes of proprietors enjoy greater security and can afford better facility for storage and attractive display of goods. They can offer customers extra comfort, better services, higher quality and value of goods than the predecessors they partially displace. The higher capital investment required gets reflected in higher prices creating a dualistic set-up with the coexistence of superior quality providers selling at high price and the traditional marketplaces offering cheapness.

Channel lengths attracted considerable attention in the literature on market evolution. Evidences in Brazil showed that market chains elongated as small intermediaries proliferated, but as the demand for agricultural products grew and bulk transport facilities developed, they subsequently shrank as the small-scale rural intermediaries were undercut by urban capital-rich wholesalers (Forman and Riegelhaupt 1970). This was also manifest as land reforms broke up estates to smallholdings in post-revolution Bolivia and bulk sales to city-based miners gave way to market chains connecting peasant producers with urban consumers via a new class of rural enterprising middlemen (Clark 1968). The diverse results are hard to interpret and consolidate owing to differences in methodologies and coverage (Jaffe and Yi 2007), but an inverted U-shaped relation between channel length and development seems plausible.

2.1.3 Rise of Marketing Policy and its Failings

Marketing of agricultural products gradually became an important component of public policy in a developing economy. Marketing gains significance not only in the context of food security imperatives and the poverty of the peasant-seller but also as

⁴Periodicity also attracted interest in literature. Early literature described daily markets, periodic markets and special markets like annual fairs.

a creator of the small businessman and an entrepreneur. ‘The essential aspect of an “undeveloped” economy and the factor, the absence of which keeps it “underdeveloped”, is the inability to organize economic efforts and energies, to bring together resources, wants, and capacities, and so to convert a self-limiting static system into creative, self-generating organic growth’ (Drucker 1958), and this is where marketing comes in.

Marketing can only convert latent demand into effective demand, but it cannot by itself create purchasing power. Embedded in the integrated context of economic growth, the political feasibility of changes in agro-marketing policy encompasses not just producers and traders but also urban consumers, rural net buyers, industries and the whole economy.

As primitive practices gave way to elaborate networks, the state administrative machinery rose to the occasion attempting to provide better organization of the system for the determination of fair market prices through regulations. A cadre of personnel was dedicated by the state for the purpose. Neither the state regulations binding on farmers, traders and distribution outlets nor the establishment of a ‘board’ or a ‘corporation’ under state control sought directly to change food prices in any particular direction. However, a parallel or enmeshed price policy with the overt aim of ‘administering’ prices (e.g. the fixation of minimum support or guaranteed prices) was also not uncommon. In more rare cases the government even subsumed entire channels, replacing numerous trading agents with its own channel. The new institutions created public sector employment deemed more secure in tenure and earning prospect.

Not surprisingly, state regulations could create vested interests and collusions between state officials and the powerful parties. Elongated market chains widened the spread between what the producer receives and what the consumer pays. Besides, often failing to disseminate market intelligence fairly and by curbing the horizontal width of the channel, the regulations only came in the way of market-based price determination, keeping farmer prices depressed and depriving farmers of information and options. A distinct bias towards the more vocal urban consumers supplemented the deprivation of the producers from emerging opportunities. Agriculture remained starved of investment in modern technology that potential integration with market could possibly bring. The causal association between the persistence of rural poverty and the state of market functioning provides a strong rationale for marketing reforms in agriculture. It also suggests that agriculture in developing countries can even create a driving force to the global economy (UNIDO 2009).

2.2 Stepping on to Reforms

The reforms in agricultural market launched in recent decades are aimed to remove state-imposed restrictions; to curb state power in the market; to allow new traders to enter with their innovative organizational structures, functional skills and modern technology; and to promote free trade to exploit comparative advantages in the

global markets. Reforms by reshaping the marketing channels are expected to enable the inflow of investment into agriculture so that the production frontier is expanded and to enhance the efficiency of marketing so that a higher share of the payment made by the consumer reaches the actual producer.

Researchers in the past (Harris-White 1996) have however cautioned about the chances of oversimplification. Marketing is embedded in other institutions such as class, caste and gender. It is also integrated in other agrarian processes creating inseparable interactions between production and other functions like credit delivery, labour hiring, land tenure and other exercises of property use rights. The impacts of exchange relations can be profound, manifest not only in rural poverty and inequality but also in the sectoral terms of trade, the investment in industry (Mitra 1975), in the persistence (or the easing out) of small-scale farming in agriculture and even in sociopolitical interactions of people when marketplaces become venues of information exchange. Since market structures and exchange relations differ widely, the effects of reforms can be both favourable and adverse on development.

Being nested within other markets in social processes that once gave rise to interlocking and exploitations in rural economy, the question that stares at reformers of agro-markets is serious. Can reforms resolve the complex issue of product marketing? Possibilities of deprivation, coercion, exploitation, exclusion and short-run commercial motives eroding long-run productive potentials make marketing reforms a deeply political issue. Assessment of market performance is also not easy when the performance is not amenable to clear definition and concise measurement (Harris-White 1996), and the presence of idiosyncratic costs associated with transactions makes the assessment even more complex. Some major aspects that tie reforms with market structure in a contextual perspective are discussed in the following subsections. These aspects relate to both history (the experiences with multi-market interfaces), motivations and developments (transaction costs and vertical coordination) and confounding challenges (as with managing channel lengths and dealing with pricing mechanisms).

2.2.1 Multi-market Interactions of Product Marketing with Social Relations

When markets are seen as institutions⁵ for resource allocation, realized situations are visualized as deviations from perfect competition calling for corrective policies. On the other hand, judged by its cultural richness and inherent complexities (like the presence of transaction costs (TC), expectations, beliefs, risks and power relations), market appears as ‘not institution’, demanding a policy to be deeply endogenous to cultural context. Marketing is not just ‘one layer of transaction between producer and consumer’; rather, it is ‘a system of transaction and transfers

⁵ Institutions are expected to have behavioural regularity and, possibly, also a common purpose.

of property rights over commodities' in which power relation and contractual forms may vary (Harris-White 1996).

Agricultural markets in the social and cultural contexts present several sets of convolutions difficult to unravel. Firstly, the product market was perceived as being nested within several other derived markets, land, labour and money markets being the most discussed ones. Some of these markets are incomplete in a developing country, giving rise to the use of family labour, the practice of informal moneylending and sharecropping arrangements.

The linkages among markets and multi-market participation of agents (the well-known landlord-moneylender and trader-moneylender identities in Marxist literature) and resultant interlocking make it possible for a party to dictate terms in one market by dint of its power in another one and for the weaker to lose freedom of choice in multiple markets. All this can result in exploitation of peasants, perpetuation of the scale constraint for farms, indebtedness and loss of asset and livelihood. The 'command' economic legislations (such as banning and institutionalizing moneylending, fixing interest rates, abolishing or setting ceiling on land ownership, suppressing lease markets, regulating product markets and creating parastatal agencies or state monopolies for marketing products) have been popular policy responses to the maladies, but the power relations might remain latent under repression and reappear in reincarnated forms when controls are lifted.

Secondly, agro-marketing has multiple components, a large part of the social capital (merchant capital as in 'old' political economy) being diverted to 'unproductive' but 'necessary' (Marx 1974) functions of buying and selling commodities adding to surplus appropriation. However, traders do not exclusively indulge in these functions but combine them with productive activities like transport, storage and processing and the distinction is not easy. Market reforms however aim to reduce the proportion of unproductive marketing functions. Third, market relations are not only deeply associated with class (or even caste, communal affiliations) relations within the rural hierarchy but interact with other sectors progressively or regressively. Movements of relative terms of trade associated with sectoral structures and the power of capitalist farmers versus that of urban and industrial classes decide investment that flows into industry.

2.2.2 *Transaction Cost*

That market exchange is not costless was explicit in Coase's (1937) argument⁶ on why firms exist. To understand markets as institutions, it is important to appreciate the significance of transaction costs (TC) involved in the organization of firms and

⁶Economic theory in the past suffered from a failure to clearly state its assumptions and faced a choice between assumptions that were manageable and those that were realistic. As neoclassical economics conflicted with reality-based evidences, the key role played by institutions in explaining economic behaviours gained recognition, paving the way to a larger framework titled New Institutional Economics. This also shifted focus in microeconomics to transaction costs.

contracts. Defined as ‘costs of arranging a contract ex-ante’ and ‘monitoring a contract ex-post’ or more generally ‘the costs of the running of economic system’ (Hubbard 1997) and that ‘incurred in information collection, negotiation, monitoring and enforcement’, TC has become an important aspect of production economics and can hardly be ignored in the context of agricultural supply (Williamson 1971).

In the real world TC are difficult to measure, and the quantification of the impact of the institutions is difficult. Costs of search, screening and coordination are usually high, and agents operate under bounded rationality. Few markets are free from information asymmetries. Economic inequality, opportunistic behaviour, lack of education, inappropriate property rights and the inadequacy of administrative machineries make the case harder for small farmers. The TC is hypothesized to increase with distance, market concentration and non-transparency of property rights and decrease with the better weighing technology, relationship-based contacting and non-specificity of investment. That suitable institutions can minimize TC is tautological but such institutions labour under cognitive incompetence, bounded rationality and their own roots tied in a ‘canopy of historically evolved norms and habits’ that filter available choices.

Nevertheless, empirical studies attempted to understand the influence of TC on the supply response and marketing behaviour (Omamo 1998a, b; Goetz 1992). A survey of potato growers in Peru showed that smallholders who are more likely to sell in markets outside the local area had lower TC (Maltsoglou and Tanyeri-Abur 2005). The nature of TC can influence the decision of a household to participate at all in market or opt for self-sufficiency (Key et al. 2000) and determine the width of the price band between the buyer and the seller. Although these findings and intuitive understanding suggest a strong implicit relation between TC and agricultural marketing, till date, empirical studies on TC have been scarce.

2.2.3 Explaining Channel Lengths

The effect of development on channel lengths through the modelling of market evolution (see Sharma and Dominguez 1992, for a review) has been extensively studied, but the empirical literature has shown instances of both lengthening and shortening effects of development (Wadinambiaratchi 1965; Olsen and Granzin 1990; Livesay and Porter 1969).⁷ Explanations offered are incomplete and seemingly inconclusive. However, an inverted U-shaped relation is more apparent in the non-monotonic relationship between channel length and development. Changes in the size of market, specialization and efficiency of intermediaries as well as social, historical and political factors impinge on the evolution of channels. Transaction

⁷ Evidences of shortening channels in industrialized or industrializing nations in Europe, Australia, the USA and Japan and increasing channel length accompanying enlargement of trading volumes are reported in Africa, Jamaica, India and Mexico.

cost analysis has generally been used as a conceptual framework in this literature (Williamson 1971, 1981).

Channels have been of importance in public policy, but the approach has been ambiguous. The development of state-controlled channels bypassing the traditional channels seeks to correct market imperfection and address the government's social agenda (Dahringer 1983) such as food security, but the suppression of individual entrepreneurship remains an issue. Not surprisingly, states also intervene to preserve labour-intensive distributive institutions translating to long supply chains, and legislations do support small retailers and traders and restrict proliferation of supermarkets. Recent policy conflicts over allowing corporate sector and foreign investment to step into marketing amply demonstrate the political significance attached to and a confusion over the degree of concentration, centralization, formalization and participation in the channels.

2.2.4 Vertical Coordination

As highlighted, it is not easy to view agricultural product marketing in isolation from the production process itself and from 'derived markets' (associated with information, risk, finance, transport, storage and even technology) and other functions that arise along the chain. A basic trait of a channel, vertical coordination refers to the means by which products move through the supply chain to consumers (Mighell and Jones 1963). While coercive interlocking of rural open markets received attention in the context of class relations, comparisons between the open market and the vertically integrated state marketing channels are confounded by conflicts between the state commitments on essential commodities and producer welfare on the one hand and the concern for employment and suppressive effect on individual entrepreneurship on the other (Dholakia and Kurana 1983; Riley and Statz 1981).

Even outside the confines of the welfare-oriented state institutions, closer vertical coordination is a trend that is observed in both developed and developing countries today probably driven by factors like changes in consumer preferences, technological developments, removal of global trade barriers, innovative risk management procedures and advances in electronic communication. This has added a new direction to the study on channel evolution. Buyers and sellers are reportedly entering into long-term contractual relationships and strategic alliances that in effect restructure channels of distribution and *internalize* transactions (Arndt 1979). As in the interlocked markets, the progress of vertical integration in open markets also blurs the margins that distinguish the central commodity market and the 'derived' markets.

Coase (1937) questioned the significance of the price mechanism around which the neoclassical economic theory was built. While exploring why a 'firm' emerges in a specialized exchange economy where a normal human tendency would be 'to control' rather than 'be controlled' and 'be one's own master' could be a mantra, a plausible explanation was found in TC. By forming an organization and allowing an

authority to direct resources, transaction costs appearing as cost of discovering what relevant prices are when transactions are decided over longer time spans, as in contracts, can be saved to an extent. Vertical coordination in a channel is also an organizational aspect that seeks to reign in TC.

Vertical integration occurs when certain channel members feel they can have greater control on the channel functions by circumventing other channel members. This may however not always be the best option. In the international market, global firms seek closer linkages with final customers in order to introduce successful brands in other countries. On the contrary, channel disintegration is favoured in highly price-competitive environments which make it desirable to contract with local retail outlets than to own company stores (Coughlan 1985) and to harness more number of specialized skills blended with indigenous experiences to serve wider geographical networks. The much discussed 'make-or-buy' choice can be linked, albeit loosely, to the options of vertical integration. Such decisions hinge on the transaction costs involved in the product movement through the supply chains, but largely, the decisions are flexible and respond to developmental processes and public fiscal policy. The effect of culture-based shopping behaviour, the readiness to commute, the affinity for the familiar (ties, loyalties and norms of behaviour among channel members), the role of government policy and the distributional challenges posed by urbanization cannot be overemphasized in understanding the scope and merit of vertical coordination. However, even when units down the chain are not linked by common ownership, a maze of delicate relationships is known to define the character of vertical coordination.

Economies of scope and scale encourage vertical integration which also reduces the costs of searching, coordinating and monitoring. Production and marketing contracts, franchising, strategic alliances, joint ventures and full vertical integration have been replacing the traditional spot markets in countries like the USA and Canada. Genetically modified corn, soya bean and canola have provided impetus to contracts and enhanced the proximity among producers, processors and consumers as achieving specific quality characteristics and their monitoring become more important. Supply chain management and contract negotiations are essential elements of the vertical coordination, but with the growing place provided to product differentiation to suit individual consumer tastes and the growing irrelevance of the spot market, price determination as conceptualized in the neoclassical framework is increasingly challenged by vertical integration of markets.

2.2.5 A Rethinking on Prices

The growing vertical integration however imposes a ravaging onslaught on the idea of the market-clearing price which is associated with the traditional spot market, where many simultaneous transactions typically take place in a regulated manner. The neoclassical market-clearing process conceptualizes a presumed (Walrasian) 'auctioneer' that matches the supply and demand in a market of perfect competition, and the spot market is found to follow this pattern.

In regulated agricultural markets, formally supervised auctions are the central mechanism for price determination. This price is however neither viable nor is it necessarily considered a fair outcome in the changing situation. Perfect competition is a notional idea seldom found in real life in which information is scarce and asymmetric, supervision is lax, rent-seeking behaviour (or corruption) can corrode regulations and commodities transacted are increasingly less uniform as production technologies vary. In fact, it is feared that the price determined in the open market is likely to become more and more 'irrelevant' (Young and Hobbs 2002) as price agreements are made in advance and products become differentiated and fine-tuned to demand.

2.2.6 Diversification and Product Wastage

The unavoidable need for cash by peasants was recognized even in the context of subsistence farming. The inverse farm size-productivity relation, once apparent up to a threshold size, called for a redefinition of commercialization and admission of a notion of forced commercialization. Commercialization can hardly be divorced from the pattern of cropping and the choice of crops.

Crop diversification among subsistence and marketable crops even among pauperized operators in peasant societies demonstrated the immediacy of consumption needs and reproductive capital (Bhaduri 1983; Bharadwaj 1985), raising the significance of cash transactions at all levels. With the encroachment of the market economy aided by the progress of technology, a broader space was created for market-sourced inputs, creating a stronger case for diversification as well as for diversion of land to commercial crops deemed useful for exchange. A shift in food habits towards non-grain products observed in many developing countries adds to this changing dimension by making diversification commercially attractive. The growing appeal for consumer goods among peasants driven by demonstration effects from urban neighbours and the flow of information strengthened by advertisement campaigns of producing companies enhances the significance of agricultural diversification for policymaking towards the development of agriculture and a faster growth of the economy at large.

Diversification as a policy instrument is however a double-edged sword. Diversification towards cash crops, viewed also to be 'high valued' (Gulati et al. 2011), is today shown to be a step in the direction of free market and higher income in developing countries, while at the same time the proponents of food sufficiency see this as a prescription for food insecurity. Critics of free trade argue against this approach (Anderson and Strutt 1996) for its long-term implications for sustainability and food autonomy. A growing body of evidence gathered from throughout sub-Saharan Africa argues for the pursuit of a food security strategy that is based on diversification of small farmers to cash crops that are suited for semiarid conditions such as cotton, sunflower and groundnut. Contrarily, it is also argued that for those who are net purchasers of grains more often, the opportunity

cost of cash crop production is not selling food crops but the cost of acquiring grains foregone by the diversification (Jayne et al. 2010; Negassa and Jayne 1997) especially in times of crisis.

Diversification away from cereals is however an empirical phenomenon in the developing world. The winning products in this shift in production pattern, often described as 'high-value products' (HVP), include fruits and vegetables besides animal-based products. Fruits and vegetables are horticultural products that are distinct from grains in being highly perishable and sensitive to weather and human handling.

Harvesting practices and on-farm and in-transit postharvest handling of products are highly inadequate in traditional systems that often developed in response to needs for food security equated commonly with grain security. Storage facility, refrigeration, well-equipped state-of-the-art transportation and timely processing possibility can help in preventing product wastage to which fruits and vegetables are highly vulnerable. Thus, technology and managerial practices are critical elements in the marketing of these crops. It is felt that marketing reforms would be essential to meeting these requirements by allowing the inflow of resources and skill for the development of horticulture. It may also be kept in view the rise of the private sector with quality-conscious supermarkets that follow these reforms is also associated with larger product wastage owing to the high incidence of rejection (Fox and Fimeche 2013).

2.2.6.1 Market Complexities

Although the free market as a construct of neoclassical economics is much cherished, markets in reality are complex with broad coverage and dynamic evolution. Since the primitive times, there is continuous restructuring of marketing in terms of location, periodicity and structure, and the current times present one critical stage in the evolution.

Marketing in developing countries remains multifaceted and dualistic in development. State policy also can never be divorced from agricultural marketing due to its close interaction with food security and livelihood and because there are serious conflicts of interest among consumers, producers and traders. Interestingly, implications of marketing structure also divide producers among different sections, rural consumers from urban consumers and small entrepreneurship from organized powerful entities.

Channel length and the structure of market change non-linearly with development, but their impacts on employment and welfare remain important considerations of the political economy. Transaction costs determine business strategies, but while vertical integration is a response to these costs, the relations signifying the integration are far from uniform and straightforward. Diversification and commercialization too drive the dynamics of marketing as newer products demand different handling protocols. However, whether the new channels created by restructuring at this stage will deliver returns to farmers, intensify unemployment and reduce product wastage, the answer is ambiguous.

Chapter 3

International Perspectives and Lessons Gained

Political resistances and short-term debacles driven by various urgencies have slowed down reforms in many developing countries. Misgivings are aroused even in developed countries on the present directions taken in marketing. In the following subsections, we present some lessons and reasons for caution based on experiences around the world.

3.1 What Experiences in Developed Countries Convey

The roots of reforms in agro-markets signifying a rebound from their state subservient status can be found in the west. In particular, the USA is a forerunner that has gained considerable experience in liberalized food marketing. The marketing system is however far from uniform in the western world, and the experiences in different western countries demonstrate that implications of alternative systems still beg resolution. For instance, grain has been a central component in the development of agriculture in the USA and Canada, but there is little consensus on whether the reliance on a few large multinational giant firms is in the best interest of the US farmers and also whether the Canadian marketing system should ideally allow space for greater private participation (see [Notes](#) for an overview of the marketing systems in the two countries).

3.1.1 *The Relevance of Transparency and the Demise of Spot Prices*

The free trade tenet is advocated by subscribers of neoclassical economics for the objectivity of its price signal and the transparency of transactions. Even in the modern and much modified milieu, distortion of the price signal is seen as the

biggest weakness of state interference in markets. Yet a comparison between the US and Canadian cases did not succeed in defending any such assertion.

McCalla and Schmitz (1979) emphasize that ‘beyond the superficial’, what actually transpires is much more complex than what meets the eye. The system appears much more transparent in the more state-controlled Canadian system where costs of marketing and salaries of personnel are required to be published officially while in the USA, access to complete and reliable information on grain marketing cannot be placed on public domain with full assurance. Although a recent legislation requires private companies to report sales above a certain magnitude, how this commitment can be enforced still remains a challenging question especially when various evasion possibilities are open to multinational companies operating across the globe.

Experiences of developed countries also suggest that the rise of contract marketing has made price information not only less available but more intriguingly, also less relevant. Increasing product differentiation and the complexity of measuring and verifying product quality make reported prices less illuminating on what to produce and even when to exit the farm sector. Price, as understood from the neoclassical economic literature, is the outcome of demand and supply forces working in the market for homogenized commodity and is best discovered through suitable forms of auction. With product specificity and the presence of small groups of buyers and sellers, the issue needs a degree of reconceptualization, and pricing process is required to be tailored to the context. When the contract takes place, a contract price is determined by mutual bargaining which means relative strengths of the negotiating parties and the information base each has access to at the time are the key forces acting on price determination. The fall of the spot prices that have served for years as a signal to the producer could be a symptom of impending difficulty for policy makers in coming times.

3.1.2 Entry Barriers Again and Producer Defence

While prior contracts with buying companies help producers to hedge price risk and access both technology and a wider market, the reach of the system at the upstream end is widely shown to be confined only to limited sections of farmers. Contracting restrains producers outside the contract from accessing the supply chains (Hobbs and Young 2000). Even if joining the chain were an option, because, severe contractual obligations weigh down on the participating producer and relevant information on the actual functioning of the channel is scarce to outsiders, the decision to join and the task of choosing the supply chain are not simple for the non-participating producer either. The market power structure that evolves from such choices defies full comprehension.

Stringent requirements of sophisticated production skills and tacit actions favouring bulk sellers rather than small farmers are known to constrict the entry into the chains of producers except the most resourceful and the privileged ones.

In effect, the oligopsonistic forces inherent in the contractual system become the alternative to the 'survival of the fittest norm' that traditionally describes competition. With powerful trading companies finding easy membership, the market committees of emerging channels too become less representative.

The possibility that large contractors will use their market power to turn contract conditions against producers has motivated producers to form associations to bargain collectively in a way similar to labour unions. Producer organizations in Europe, the Agricultural Fair Practices Act (AFPA) in the USA (along with supplementing laws passed by the federal states), Farmers Legal group in Minnesota, legal protection of producer rights extended by Canadian government and National Farmers' Union and other initiatives to develop standardized practices in the UK are some of the examples in which market fairness is sought to be maintained by this means.

This trajectory despite its usefulness has its own threats for development. Evidences of unions becoming too demanding and aggressive for the viability of the sector and the welfare of the workers they serve and more specifically of the workers operating outside their pale are ample in industry. The government's role in modulating and balancing the practices assumes importance in different ways in this regard. In developing countries, the task of uniting farmers into collectives is not an easy task given that farming has traditionally evolved as independent and generally family-based activity quite unlike the regimented cadres of factory-based industries. Organizing legal support for this large mass of farm operators, even if united, is even more daunting. The presence of a large number of small farmers with their low levels of awareness, the deviation of the new system from the familiar and long-standing one and the profound complexity of informational asymmetries between the two parties make the reconstitution of developing agriculture into its new incarnation a historic step.

3.1.3 Loss of Independence

The transformation of the US agriculture from a body of traditionally independent farmers to a vertically integrated system with the farmer as a mere component in the channel has yielded valuable experiences to other countries. For instance, producers of peanut and tobacco traditionally functioned as independent decision makers protected by federal programmes. In the case of poultry, another major activity in the US agriculture, chicken was historically reared on most farms that were diversified and supported by thousands of small competing family-owned hatcheries, feed mills and processors.

As production contracts gradually gained ground, federal programmes faced deep trouble. Fixing guaranteed prices to peanut farmers in practice since the 1930s radically changed in 1996 when the legislated price floor was cut by 10 %. The situation was different in the case of tobacco where the decline that is in process since the 1950s intensified by the political and legal pressures of the 1990s.

In poultry, the dispersed system of chicken farming and hatcheries radically transformed into horizontally and vertically integrated agribusiness farms and production contracts. However, the transition has yielded reasonable income levels. Tobacco farmers, faced with depressed demand and deeply ethical constraints, found support in alternative avenues as a fallout of the developments. Farmers in less productive regions actually emerged successful because they got access to better technology and marketing support. Yet, in spite of the dividends, discontent arises from the fact that farmers are treated like 'less than' employees rather than entrepreneurs. They have forfeited their traditional freedom of taking the decisions to adopt a technology.

3.1.4 Implications for the Urban Consumer

Supporters of the fast-growing modern food retail sector (UNIDO 2009; Shepherd 1965) argue that this sector has so far been unduly suppressed preventing benefits like economies of scale, globalized procurement and thereby expanded product choices from reaching the consumers. This argument is however easily critiqued for its consumer-centric emphasis. A patent disregard of the political implications for urban unemployment due to the displacement of existing suppliers is another charge. The capability of the modern retail system to cater to the demands for fresh food is questionable. Evidences show that supermarkets prove more successful in selling processed foods and staples but fall short of informal vendors in the quality standards of fresh food (Reardon and Minten 2011). In the downstream end too, the reach of the channel across different consumer classes is likely to be limited. In the face of growing concerns over deteriorating food habits, obesity and loss of nutrition whether the urban consumer really gains is unanswered when the product purchased is seen in a broader perspective.

3.1.5 Agro-ecological Prophecy

A clash between peasant agriculture and the agribusiness model relying largely on contracts between producers and buyers is intensely critiqued by agro-ecologists. Input application in farming in modern chains is largely external and driven by recipes provided by external sources as against the closed peasant system in which input use, based on principles of biology and individual experience, incorporates flexibility, adaptation and resilience. Farmers' purposeful responses to various factors as reflected in their day to day decisions are seen to be the key to sustainability of agriculture. Extension in agriculture lies at the crossroads given the apparent contradictions between sustainability and profitability.

The agro-ecological approach would rest on an extension system that is led by the farmers themselves rather than private entities or even the state. Exchange of ideas, adaptation and documentation of best practices are deemed as ideal principles

for sustainable agriculture. When farmers lose their power of independent decision making, any mistake on part of the provider can mean disaster or bankruptcy with little leeway for redemption. Even as public extension, as a means of delivering proven laboratory techniques and socially oriented formulas to the field, loses relevance, it is observed that the contracts incorporate hardly any provision for training and extension. The sponsors generally favour commercial crops forcing farmers to be dependent on market for their food security. With intensive use of chemicals to attain high yield rates, their land is liable to become unsuitable for food cultivation over time making the process nearly irreversible.

A recent study conducted by the Institute of Mechanical Engineers suggests that as much as 50 % of food products around the world never reach human stomach (Fox and Fimeche 2013). One third of UK vegetable crops are not harvested due to them failing to meet the exacting standards based on their physical appearance. Consumers also throw away half of the purchased food in Europe and the USA. Poor engineering and agricultural practices as well as inadequacy of storage facility even in the organized sector are reflected in the wastage. The sales strategies tacitly encouraging consumers to overbuy through supermarket schemes (such as buy 1 get 1 free) are symptomatic of these difficulties. Producing food imposes pressure on resources like land, water and energy, and with the need for feeding three billion people by the end of the century looming large, the loss of food through wastage needs to be contained by sustainable ways of operation from farm to market and from market to consumers. How far the private sector-driven, contractual and recipe-based farming system fits with the emerging global concerns is not resolved.

3.2 Experiences in Developing Countries and Transitional Economies

In the years following 1980 and more so in the 1990s, a number of developing countries were in a process of reforming their agricultures to eliminate price distortions (that most often went against the producers' interest). The motive forces of the reforms were many, but external impetus possibly dominated the drive while internal resistance slowed down the pace. In the case of some of the least developed countries, independence from food aid was an added objective, in which international agencies provided fuel. Huge debts and external borrowings helped to bring others in the net while the internal burden of market failure, food insecurity and uneconomic surpluses also contributed to the imperative to allow private enterprise and to open up the borders in some countries.

The prereform scenario in developing countries was shaped by the urge to mitigate the problems resulting from poor functioning of agricultural markets inherited from colonial times. In order to stabilize farmers' incomes, ensure food security and protect smallholders from uncompetitive marketing practices (Dehn 2000; Timmer et al. 1983; Myrdal 1956), regulations and state controls were routinely resorted to in

these economies. The recent spate of reforms therefore has not been easy in welfare nations and aroused apprehensions. Land fragmentation and preponderance of small farms raised the spectre of inequality as well as incomplete participation in reforms creating political unacceptability of reforms. Limitation of the land market manifested in inadequate land rights, failure of institutional finance to meet farm requirements, persisting insecurity about food supply especially arising from droughts, urban bias in development and possibilities of unemployment of small traders naturally create resistances against reforms. Administrative weaknesses, corruption and lack of capital and skill were additional deterrents.

Actual implementation of reforms could be influenced by an assortment of complex sociopolitical factors such as forms of governments, ideologies of ruling governments and opposition pressure if political opposition is possible in the system. In democracies, the nearness to election and rural and urban representations in electorates also determine the pace of systems. Other factors include the current openness of the economy, requirement for external loans, persuasion from lenders, economic crises and other compulsion for reforms (Giuliano and Scalise 2009).

3.2.1 African Experiences

In Africa, reforms that started in the early 1980s proceeded along with structural adjustment and democratization. Donor agencies had a significant role in pushing for reforms given an agenda set by the World Bank's 'Berg report'¹ in 1981. The food markets in these countries were dominated by large state or parastatal agencies.

Reforms were targeted at withdrawal of state involvement in pricing and marketing and relaxation of regulations on marketing. The Ethiopian government curtailed the operation of its state marketing board as part of aid conditionality in 1990. Aid conditionality was also instrumental in commencing reforms in maize market in Kenya in the 1980s. In Zambia, the newly elected government in 1991 withdrew direct government involvement in grain trade and encouraged private enterprise. Reforms started in 1981 in Mali, a semi-desert country, but it was the democratization in 1991 that speeded up liberalization of the cereal market. Multilateral agencies advocated food market reforms in Benin and Malawi in sub-Saharan Africa as a central component of structural adjustment. Although shortening of channel is a central rationale for reforms, in reality intermediaries could not be eliminated in most cases.

Studies show mixed results from reforms. While evidences of increased private involvement, greater market integration and production gains are seen in literature, uncertain state commitment, inadequate private sector response and unimpressive

¹ Report named after its author, Elliot Berg, and issued in 1981 by the World Bank that helped move African countries away from state-run economies and towards free market systems.

growth impact are the overriding impressions. Market intermediation was taken up by private traders in most cases, but their lack of capital and poor education levels have been serious limitations. On the contrary, service delivery to small farmers severely suffered in areas vacated by the government when private enterprise failed to fill up the gap created as in Zambia (Mwanaumo 1999).

The experience of Mali highlights some degree of success in marketing millets, the importance of infrastructure for storage and transport and the possibility of an interaction between the sectoral reforms and macroeconomic reforms (Dembele and Savadogo 1996). In most cases, foreign capital did not flow in as expected while the number of NGOs grew. Though diversification was promoted, new crops actually proved uneconomic (maize in Zambia) in many cases. In Benin and Malawi, private traders responded but only as petty brokers with poor capital base, low specialization and insufficient access to credit (Gabre-Mdhin 2001). Contract farming, known for mitigating price risk, by and large excluded small farmers because of the high quality standards required by buyers, though pockets of success are noted in South Africa and Zimbabwe where small farmers integrated closely with the market and adopted organic methods (Singh 2012) for gaining advantage in the international market.

However, the records varied. For example, Uganda and Mozambique are countries where governments showed commitment to reforms. Certain countries openly resisted reforms. Zimbabwe reimposed controls on maize after initial experimentation. Veiled reforms with de facto state control were the case with fertilizer market in Zambia and Ethiopia and coffee in Malawi. A reversal was implicit in Ethiopia's² course of reforms. Failure was attributed by many to inadequate implementation of reforms (Jayne et al. 2002). In respect of cash crops cocoa, coffee, cotton and sugarcane, the pace of reforms varied among commodities and countries (Akiyama et al. 2003). Econometric analysis suggested that the share of producer prices of coffee was increased by reforms which imparted cointegration between world prices and grower prices (Krivonos 2004).

3.2.2 *Centralized Economies*

Modern economic theory based on presumptions of well-defined property rights throws little light on the implications of reforms for both the dynamics of the economy and the institutional trajectory of centralized economies. The move towards market economy was undoubtedly a shock to the erstwhile socialist countries which were stagnant and deceptively stable systems to start with.

²The Agricultural Marketing Corporation (AMC) later renamed the Ethiopian Grain Trading Enterprise (EGTE) formed in 1974 with World Bank aid, seen as a means of forcing small farmers to sell food at prices consistently below free market levels, was downsized, but influential ruling party members were permitted to form monopolies subsequently in 1995. Private traders now account for 95 % of the cereals marketed.

Agriculture in most of the countries in former Soviet Union (CIS), East Europe (CEE) and China was conducted in collectivized farms of large scale although private titles were not unknown in some of the constituent countries. Failure of agriculture was also an important if not a central reason triggering reforms in these economies.

The CIS and CEE countries, breaking out of the centralized control of communist regimes in a bipolar world in 1990–1991, had much to learn from experiences of developing countries. They differed from developing countries however mostly in the scale of cultivation, nature of land titles, ideological biases against markets and administrative difficulties of the revolutionary regime change. The large farms associated conventionally with economies of scale had laboured under the weight of transaction cost of monitoring and enforcement and the problems of moral hazard, shirking and free riding. Land privatization became a major component of the agenda. Nevertheless, large-scale collective or corporate farms continue to be important in most of the transition economies, with unresolved debates over land transfer persisting in many countries including Russia.

The agricultural transition was aimed at improving efficiency and productivity of farm production through the replacement of the institutional and organizational rigidities of the former command economy by market-oriented institutions. Downsizing of scale and greater individual accountability were the cornerstones of the change. Despite the weight attached to land relations, transitions are intrinsically multidimensional. As a result, indices had to be developed by multilateral agencies like the World Bank to capture the progress of reforms in dimensions such as price and market liberalization, privatization of agro-processing, development of financial markets and creation of market-oriented institutional framework for agriculture. These countries however shared common institutions with developing countries like state enterprises dealing in food procurement and distribution and the associated compulsions imposed on agriculture so that sharing of experiences retained its relevance.

Although privatization of the agricultural environment has proceeded in the European countries with an impressive success of the food industry achieved in Hungary despite lags in Bulgaria, Romania and ex-Yugoslavian countries, the complexities prevailing in the former Soviet Bloc countries such as corruption and bureaucracy led to a technological decline in the food industry and discouraged the inflow of foreign capital (Csaki 2000). Emerging evidences suggest that different policy environments also influenced land reform decisions (Lerman 2000b) in the formerly socialist countries. The CEE countries had marked differences with CIS countries in having smaller agricultural sectors, higher food standards but greater expectations about their level of living, creating demands on the reforms. All this makes assessments dissimilar and incomparable.

In China, food market reforms took place in a gradual way starting with de-collectivization in 1978 when the centralized system gave way to a more efficiency-based approach to marketing (see [Notes](#)). The new system remained flexible and sensitive to demand situations but with 'retrenchment' in reforms taking place whenever it was felt necessary. The motivation for liberalization

arose when the system of procuring grains at depressed prices entirely for rationing in urban areas failed to encourage production to meet the growing needs of the urban populace. Empirical investigations in wheat market suggest that the efficiency of Chinese market improved over time (Wu and McErlean 2003). China has achieved a fair measure of success with the reduction of government control on agricultural markets and the vitalization of price mechanism, but vibrant wholesale food markets and governmental minimalist price intervention in select foodgrains remained important cornerstones in the transition.

Cuba's experience was different. In Cuba, productivity in agriculture is perceived to have improved in early years of the revolution due to rural investments, but concentration in sugarcane cultivation built up a dangerous export dependency. The temporary attainment of food security which was different from food sovereignty (Rosset et al. 2011) created difficulties when the supporting socialist block collapsed followed by the US trade embargo in 1989. However, the country adopted a less external input-based and more diversified system although accepting the breaking up of state farms that were deemed incapable of this adjustment. The emerging extension system also developed more autonomous peasant agriculture where inputs were chosen by farmers' own judgment and not by prescriptions provided by corporates or government agencies.

Myanmar, in Asia, was an inward-looking country. Harsh controls on an agriculture crowded with landless labour and more severe controls on rice marketing were a means of social control. Liberalization in 1987–1988 led to a relaxation of state control, removal of levies and entry of private intermediaries in the markets for cash crops pulses, oilseeds and beans. Export possibilities to India and the lack of political significance of these specific exportable crops especially pulses proved to be advantages for reforms. Impressive expansion of acreage, increase in productivity and trade followed. Input payments and also price contracts made in advance enabled by the reforms facilitated the success (Okomoto 2004). The effects of further political changes in the country remain to be seen.³

3.2.3 *Challenges Awaiting India's Public Policy Making*

The urgency for India's economic reforms arose from the poor functioning of the -state-controlled or 'regulated' markets and a financial crisis that necessitated borrowing from international agencies and a restructuring macroeconomy in 1991. Reforms in agriculture were a part of the process but were more difficult to implement than those in other sectors like trade and industry. Opening up agricultural markets is

³ Myanmar (earlier Burma) emerged from colonial rule in 1948 but came under military rule in 1962. All aspects of society became nationalized since then as civil strifes, protests for democracy, economic mismanagement and crises and natural disasters acme to be reported through the course of time. Elections began to be held since 1990 but were highly questionable until 2012 when the country finally emerged as a presidential republic moving towards democracy.

perhaps an even more daunting task. However, the historical Act of 2003 opened the gates for new channels to form in agri-marketing, but the path is yet long and fraught with debacles.

Amendment of the Agricultural Produce Marketing Act in India brings the relatively backward and poverty-ridden yet politically the most sensitive sector agriculture in close encounter with the new world of capitalism. Allowing varied channels of marketing agricultural goods to emerge could mean ravaging the production systems in place and even obliterating the marketing channels that had evolved over centuries. While excessive suspicions verging on paranoia can be misplaced when evidences of benefits are not sparse in areas where the ground has already been tested, there is enough reason for caution when one critically examines the fine prints.

Inflated intermediary margins in market chains enlarge the ratio of the earnings of non-production workers to those of production workers in agriculture (Goldberg and Pavcnik 2007; Bardhan et al. 2009). Market reforms as a policy in the wake of trade liberalization were motivated by a desire for efficiency. It is also important to appreciate that a new phase of capitalism has dawned bringing with it new complexities, as sweeping changes take place in managerial aspects of product delivery, aided by modern information technology. Curtailing avoidable margins perceived partly as entrepreneurs' 'reputational' rents and partly as returns to managerial skills is also an issue that arouses concern.

Allowing greater freedom to potential traders, be they individuals or large organized conglomerates, to enter the business of agro-trade in ways that are flexible would allow the development of a market that is 'contestable', if not competitive, where the threat of competition would prevent runaway profiteering at the cost of producer or consumer welfare. Unproductive marketing costs and margins can be reduced by means of superior technology, improved managerial practices and elimination of redundant intermediaries. The changes could pave the way to greater investment in agriculture, higher production in terms of quality and quantity of output, better consumer satisfaction and higher prices reaching the producer.

Although freedom of markets is a central concern of the reforms, it is also an appropriate time to acknowledge the transitions in capitalism, the erosion of neoclassical beliefs and the demise of price purely as the specific concept that had been nurtured over the centuries and studied in economics. While even that notion of price was a victim of oversimplification in the presence of uncertainty and transaction costs (Coase 1937) giving rise to organized firms, the overwhelming desire to overcome unavoidable costs in the wake of the information revolution would generate new innovations (such as greater vertical integration, electronic transactions, prior contracts over price, production and quality, markets for risk and derivatives and a deluge of retail networks, franchises, telemarketing, e-selling and virtual selling), leading the pricing process to attain a new platform. As with firms, vertically integrated segments of marketing channels, can appear as collusions or function as 'command economy microcosms' making use of coercion-based mechanisms to minimize transaction costs and leave footprints in the power relations among channel members but in lesser public scrutiny.

The public policy needs to be prepared for challenges and complexities that would be novel. That reforms in agricultural market would lead to unpredictable dynamics, the emergence of organizational variety and nonstandard and unfamiliar business practices (Williamson 1985) is hard to refute. Public policy will also have to perceive the gradual shifts and act in concordance. With contracts stipulating rigid farm practices, the place of public extension has to be reinvented. In the same way when patents are awarded to innovations, the role of public research and development has to be redefined and aligned with the situation.

Yet any diminution or vacation of the public space could be disastrous when short-term profit-motivated instructions conflict with sustainability concerns or where intellectual property rights of rich companies deprive small producers of their rights to basic livelihood. Longer term and more profound questions on the merit of industrializing agriculture into mechanical assembly lines from independent decision making entrepreneurial units and its effects on ecology and human resources are not less discomfiting. The catastrophic possibility of the powerful entities deserting producers in distress or leading the way to food insecurity needs contingency provisions.

The decline of spot pricing and the challenge to our notion of prices would be a hard onslaught on policy making. The transparency of market information and even the relevance of the same would be a possible grey area to be prepared for. Food prices have guided the policy makers in making welfare plans and assessing fair practices and efficiency. With the close relations within the channel and the quality differentials difficult to measure, such reporting of market prices would be more difficult to access and quantify. Market intelligence reports can become less representative while information acquisition, processing and dissemination will require to be technologically more enabled. Asymmetries of information would be highly likely when one of the parties has access to the global market information. The traditional traders competing with one another and bearing personalized ties with sellers were a dominant source of price information for the producer, and their elimination can mean a severe damage to the information system. Whether the public information system or technology can fill up the gaps can be reviewed.

Rural markets are yet unequal, dotted with innumerable small and unorganized farms. Unfair terms in contracts are more likely to be imposed by the powerful buying organizations, and lack of transparency can make it difficult for the administrative process to monitor. Superior legal, managerial and financial resources with the traders increase the vulnerability of the producers to unjust contracts and the susceptibility of state officials to fall prey to unethical manipulations.

Official requirements of making contract terms public must be mandatory in practice but not easy to implement in spirit. Besides, rising incidences of disputes between contractors are also an additional challenge requiring restructuring of the judicial machinery to rise to the occasion. Some states in the USA require mediation prior to presentation of the case in court and specification of the arbitration procedures in the contract itself. Obligations to follow prescribed methods of cultivation, feeding animals, documentation and farm audits demand an altogether different set of skills of

the producer as compared to traditional spot market where transaction was fairly straightforward. Resolutions of conflicts are also no easier in the new situation.

Organizing producers to gain bargaining strength and remedial power is a mechanism commonly considered essential for the success of the emerging system, but complications of excessive demands, unreasonable expectations and unmanageable volumes of arbitration cases are not unknown in developed countries. When producers are at a bargaining disadvantage, the economic outcomes could be efficiency only at the cost of welfare loss that the government has to manage. In the developed countries, competition and antitrust regulations play pivotal role in these matters, but this is by no means easy especially in Indian context. In the absence of clear price information and measuring protocols for quality, regulation could be a far more ominous challenge for developing countries.

The experiment with new marketing channels involving contracts in the western countries serves as eye opener for the developing countries that have embarked on the same path. Earlier, the advent of capitalism in a rural semifeudal agro-system in developing countries could not purge the system of class relations and nested agronomic processes that lead to interlocking in the markets. Those issues remain although they were mitigated by state intervention in the form of direct participation in markets, regulation of private trade-led markets and creation of markets where such markets failed to emerge.

The dismantling of the state activism and permission of the new capitalism to enter into agro-markets will unleash the embedded agro-markets in a new reincarnation manifested in vertical integration, contracts, consortiums and alliances. Together, the giant system would dominate the agriculture of today and tomorrow and decide the fate of small farmer welfare and food security of the nation. However, it is also pragmatic to note that the new capitalism may have less to do with competition than with collaborative and oligopolistic behaviour in a 'competition-obsessed business culture' striving to search for 'returns to equity' where large and powerful players can collude, deter entry, curb competitive innovations and influence not just markets but also policy (Meyer and Kirby 2012a). Gaining mileage from the potentials and containing the negatives would be the way forward in India to deal with the transition.

Notes

Grain Marketing Systems in the USA and Canada and Role of State Control

The USA is a large grain-producing country in which the domestic market has the dominant place although exports are also voluminous. The expansion of commercial grain farming was historically associated with settlements in Midwest, the Great Plains and the West and the development of railway networks. The country

became one of the largest exporters of wheat since the latter half of the nineteenth century accounting for 44 % of world wheat trade back in the 1890s. This dominance was sustained barring a period in the 1930s.

Similarly, human settlement led to the evolution of the grain economy and its commercialization in Canadian Prairies aided by the growth of railroads. Major differences between the two countries arise from the fact that (a) despite the smaller volumes, exports are more important in Canada than in the USA, and (b) production and consumption centres are dispersed, shipping being done by a variety of transport modes like trains, trucks and barges in the USA whereas the two sets of centres are more concentrated in Canada, railways being the key means of transportation. However, what essentially distinguishes the marketing systems in the two neighbouring countries is the way the state interferes in the markets and the extent of privatization.

Historically, both countries had witnessed extensive development of farmers' cooperatives in the 1920 but with little success that in any case ended with the Depression. The paths taken by them diverged thereafter. In Canada, nearly 80 % of the primary elevators are owned by cooperatives, and the government deeply regulates the transactions in the primary stage including the rates charged for handling and storage. In the USA, the role of cooperative is much less extensive, and the government does not interfere in fixing the rates. In the USA, the terminal markets evolved at inland ports under the dominant role of the private sector, while in Canada, these markets are much more concentrated geographically and are in control of the government or cooperatives. The transformation industry is in private hands in both countries, but processing is more important in the USA where livestock and the feed industry enjoy special importance. In Canada, railroads both public and private and some ferrying by waterways characterize transportation while trucks and river barge movements have provided alternatives to railways. Technological innovation and lower level of regulation have given more choices and flexibility for market responses in the USA while Canada fell behind.

In Canada, the Grain Board which was established during World War I and became a target for agrarian protest against falling prices (Treleavan 1975) subsequently continued to regulate sales across interprovincial and international borders of grains meant for human consumption. It fixes prices using 'pooled pricing'⁴ and a 'delivery quota'⁵ with welfare maximizing objectives. This system helps to ensure uniform prices. In fact, the state guarantees minimum prices to producers regardless of the particular time of sale in order to manage the flow of grains in the market. This method at times forces producers to hold large inventories.

⁴The pooled pricing system involves an initial payment to producers for delivery at the primary elevator and final payment based on the proceeds from crop year sales minus Board and initial payment.

⁵This system controls the quantity, kind and quality of grains of each producer at any time and limits the quantity of grains that the producer will be able to deliver at the primary elevator.

The Board however has no internal facilities and obtains services on contracts from various cooperative and private companies that include also private grain companies based in the USA. Thus, the central control is backed by support from private enterprise in Canada. In the case of the USA, grain is sold through the open market so that prices vary across producers and fluctuate even with time. Private traders are active at all stages of marketing. There are evidences of growing concentration⁶ downstream, five of the largest multinational export firms handling 90 % of the US grain exports and 70 % of world trade.

Transitions in Communist China

Initially, a supplementary system of ‘negotiated purchase sanctions’ at prices higher than the quota prices was agreed with the farmers. However, trading with non-government agents was permitted only in 1983, but this remained contingent on the fulfillment of the purchase plans of the state grain market agencies (SGMAs). Significantly, in 1985 the national quota was reduced to give leeway to free market prices. Urban rations were reduced in 1992–1994 on account of budgetary burdens. Ration prices were increased but urban residents were compensated with cash transfers. Retailers involved in rationed sales gradually transformed themselves to commercial trader. The SGMAs were partly commercialized, and devolution of power was made to regional governments in the conduct of the food market.

⁶Estimates provided by McCalla and Schmitz (1979) for the USA mention 8,000 country elevators, 250 inland terminals and 80 port elevators.

Chapter 4

Objectives, Data and Methodology

Since the circulation of the Model Act by the Centre, a number of alternate marketing channels have tended to emerge in various states. Obviously, the emergence of new channels is linked with the state's response to the central initiative, but even in recalcitrant states, innovative market channels compatible with the prevailing policy environment and perhaps deserving of emulation are forming.

We perceive that the success of the reforms will be reflected not only in the emergence and popularity of new marketing channels but in a visible reduction in the lengths of the chains leading to price advantages being delivered to farmers and consumers. We also anticipate the emerging channels to be more effective in reducing postharvest wastage of products. Ideally, the advantages should also touch non-pecuniary dimensions attracting producers to join the chains because of more convenient dealings and fair producer prices and offering consumers more appealing product choices than traditional chains do. All these rewards would be meaningless to the Indian society and agriculture if the channel fails to draw participation of the small and poorer farmers.

We aim to present experiences gained from across the country based on investigations¹ conducted under the present study. Primary, field-based and sample data was collected and discussion-oriented surveys conducted in 11 states. The information gained from analysis of the data is assembled in this book.

¹The investigations are done by ten Agro-Economic Research Centres (AERC) that will be referred as Centres. Coordination, which combines the task of designing the study and analysis of results in a comparative framework, is done by the author at the Institute of Economic Growth (IEG), Delhi, who was entrusted with the responsibility of the countrywide assessment by the Ministry of Agriculture, Government of India.

4.1 Conceptual Framework

Only a small share of what the consumer pays for products reaches the actual producers (Bardhan et al. 2009), while unproductive marketing costs and margins account for a large share. The long chain of intermediaries who serve to pass on the products from the producer to the final user and the inefficient ways of operation of these unorganized traders are responsible for the large difference or the ‘spread’ between the farmer’s price and the user’s price. In this process, both the producer and the consumer lose. However, it remains to be seen if the spread can be reduced by shortening the chain or by including a powerful player in the chain. While it is possible that by employing modern methods, the new players can enhance efficiency, the possibility that the margins shared by numerous traders will be appropriated by these entities and more intriguingly part of this appropriation may take the form of ‘reputational rent’ cannot be ruled out either.

4.1.1 *The Invisibility of Unproductive Trading Functions*

It has long been recognized that diversion of social or the ‘merchant’ capital (Harris-White 1996) to ‘unproductive’ but ‘necessary’ functions of buying and selling commodities (Marx 1974) is unavoidable. Since such functions are usually inextricably combined with productive activities like transport, storage, cleaning and processing in various degrees, it is not easy to disentangle the components that deserve to be qualified as productive and necessary from the other functions. It is also likely that much of the unproductive functions can be avoided today with superior managerial practices that have developed in tandem with the progress of technology.

Reforms would ideally minimize or eliminate the avoidable part of price dispersion between the producer and the user that may arguably constitute a collectivized measure of unproductive marketing cost. This is far from easy to evaluate and confirm in practice. The informal, nested and sometimes non-pecuniary dimensions of the functioning of trading intermediaries in the market chains make the subject of traders’ productivity extremely complex to unravel.

Traders in agricultural markets are known to discharge several additional and associated functions that remain embedded in their usual and more visible functions of buying and selling. Traditionally, markets for such services even if amenable to conceptualization are generally missing in developing countries where producers are typically poor and operate in undeveloped regions. Therefore, factoring these services into the margins of traders is not easy. The trader’s role as financier, insurer (as in preharvest contracts or forward contracts), informer (agent of market intelligence) and input supplier is only implicit in their margins given their outdated accountancy practices.

In the past, these multi-market interfaces of traders leading to complicated interlocking were widely discussed in the literature in context of farmers' exploitation (Bhaduri 1983; Bharadwaj 1985). In a vast rural setting where undeveloped infrastructure, poor communication, pervasive ignorance and extensive poverty traditionally left organized industries disinterested, the traders generally formed the crucial conduit of market intelligence (Mulky 2008). Despite their own constraints and limitations, the more mobile traders are known to be more aware about the market situation than farmers are. The flow of knowledge through the medium facilitates the determination of prices at the producer's end.

On the contrary, in the traditional supply chains, the traders individually specialize only in small ambits of activities within the chain such as in striking negotiations (as by a broker), supervising in auction (commission agents), stocking at various points (merchants) and distributing in retail (vendor in shops or with pushcarts) to consumers. This system encourages the entry of more and more players who claim their shares in the user price and often unjustifiably widen the price *spread*. It is felt that even with growth taking place in the larger economy and the changing pattern of food habits among the growing middle class, this wide dispersion of prices will come in the way of agriculture's response to the demand stimulus and the elimination of poverty among farmers, providing a compelling rationale for opening up the system to new marketing methods and players.

The relative success of the emerging channels stimulated by the launch of reforms and cutting down of channel lengths now offers a potent way to understand the implicit significance of the traders' presence. This is possible by comparing the performance of markets between a common traditional channel and an emerging channel with a shortened length, functioning simultaneously in the same region for the same product. While the price spread or the gross cost of marketing a product which comprises of both actually incurred costs and traders' margins may be encountered in both markets, the relative extent of this spread can be assessed by comparing the gross marketing cost incurred for every rupee received by the producer from selling the product. Similar standardization can be made with respect to what the final user pays for the same product if consumer welfare is considered as a priority.

The gross marketing cost may however include inextricably both productive and unproductive components, but to the extent that this relative cost of marketing can be reduced by shortening the channel length or bypassing the commission agent, the productive value of the traders forgone in the channel can be challenged. Although the livelihood concerns of trader are a serious issue facing market liberalization, this possibility suggests a lesson that more productive avenues of channelling manpower in the Indian economy should be explored.

4.1.2 Reaching Out to Small Farmers

However, hypothetically even if the market can be made more efficient by reducing channel length and possibly implanting more resourceful and organized players in the chain, the beneficial effect to agriculture can hardly be deemed meaningful in

India's context if it is not inclusive of the small farmers. The small farmers including the marginal farmers who operate small units of holdings comprise a very large, over 80 %, of the producers in India's agriculture and 53 % of the operated land. If these farmers, for any reason, are not drawn into these more efficient channels, the emergence of these channels will have little impact on agricultural development and only serve to enhance rural inequality or trigger an exodus from farming.

There are strong reasons to expect a positive association to prevail between participation and holding size. Empirical studies in other countries have not refuted this possibility either (see Chap. 3, Sect. 3.1). Two obvious links between holding size and participation create a case for exploration in the Indian context.

First, small size, discouraging mechanization and big investment, makes a farm mostly not viable in terms of income potential so that little surplus is generated for financing superior methods of cultivation. Yet it is widely known that emerging channels are selective in procurement and buyers especially private companies tend to impose high-quality standards on the sellers. In this situation, the small farmer who can scarcely invest and adopt better technology is less likely to achieve the required standards. The farmer will also enjoy less protection and preparedness to tolerate rejections that are expected in these channels.

On the other hand, small farm households are increasingly drawn towards nonfarm ways of earning including participation in public works programmes as provided by the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) to supplement farm incomes and could very well be able to invest additionally on farming as required by the channel. Also, it is simplistic to assume that financial command is the only way to higher quality, as natural advantages and indigenous skills are also possible contributory factors that the emerging market channels have no reason not to exploit. In this study, we will find that corporate buyers of apples tend to be selectively biased towards remote and higher-altitude farms rather than larger farms.

Secondly, it is believed that modern chains prefer the participation of larger producers because, for the buyer, the transaction cost of searching, screening and negotiating with a very large number of small producers can prove to be a heavy burden. The modern supply chains are powered by the forces of trust, reliability and official certification, all of which find the larger farmers to be in a privileged position to command. Such scale-linked disadvantages need not be a deterrent as they can be overcome by the small farmers' coming together with common purposes and standards and their negotiating over bulk produce with buyers in a more organized fashion.

4.1.3 Efficiency, Productivity and Sustainability

The foregoing discourses suggested that new channels catalysed by reforms could help in bringing the producer and the consumer closer in the supply chain, thereby

diminishing the elements of unproductive marketing costs and narrowing the 'spread' between the producer and user prices. This gain in market efficiency is likely to benefit the farmers by increasing producer's prices and by raising demand due to cheaper availability of products at the retail end. Moreover, there is a need to improve productivity from land, achieve higher-quality production and above all improve farm incomes to reduce poverty and develop rural India in a sustainable way.

Agriculture in India is at crossroads. While the green revolution-generated prosperity based on foodgrain production has reached a road end owing to ecologically adverse side effects and the attainment of national-level self-sufficiency in food, changes in food habits, increased sensitivity to knowledge surrounding nutritional intakes, transformation of social fabric in terms of family structure and gender roles and the prospect of exports in a more globalized food market have created a rationale for diversification from grains. The prospect of promoting new marketing channels suitable for diversified products would be expected to infuse investment into the agricultural sector. The resulting upgradation of technology would improve farm productivity. Together, higher producer prices and productivity coming from reforms would ideally enhance income from farming and ensure that practices are sustainable.

4.2 Challenges of Designing the Samples

Our first task was to identify a couple of emerging channels, i.e. channels that deviated in some innovative way from the regular channels that have existed commonly in agricultural marketing. This was easier said than done, as it was soon realized. Firstly, defining the boundaries of a traditional channel was itself a challenge for the coordinator when the investigating centres reported on the large range of actual chains that already operated in the different states. Secondly, it was more difficult to locate an emerging channel even by any specific definition reflecting their paucity. It is not surprising that the task has been far more difficult in cases where the state government has vacillated with reforms and especially where the APMC Act has not been amended to allow the flexibility required for their emergence.

4.2.1 *Definitional Aspects*

The definition of what constituted the traditional channel and what made up the emerging channel could only be made in context of the situations prevailing in the states. Nevertheless, broad demarcations needed to be made to distinguish between the channels in the nationwide study.

The AERC Assam (Kakaty and Borah 2011) has defined the traditional channel as 'one where a large number of intermediaries are involved and the share to the

producer is comparatively low. As a result the supply chain in the traditional marketing system becomes long and completely dominated by traders who operate at high margins without much value addition'. Even under this umbrella definition, the channel can take varied forms with differing channel lengths. Emerging channels, i.e. channels that differ from the traditional ones, are even less uniform and present even more varied models. More importantly, continual evolution of new marketing models to suit the indigenous conditions comes in the way of making sharp boundaries of definition. Acceptance of 'nonstandard' business practices and 'organizational variety' (Williamson 1985) would be the more relevant spirit behind the definition of an emerging channel.

We have specified certain queries to be made when identifying emerging channels. Do they come with shortened chains than in the traditional ones operating most commonly in the area? Do they necessarily involve private corporate entities such as large marketing companies? Do marketing services begin at the field level, relieving farmers of marketing cost? Are the prices decided by prior contracts or by open bargaining? Assessing chains by these parameters is also not by any mean simple. Shortening the chain would reduce the number of middlemen and eliminate them in the extreme case (direct farmer-consumer marketing) but at the cost of efficiency (see Chap. 2, Sect. 2.1) that comes from specialization and skill. Replacing innumerable traders with a single large and specialized marketing firm need not diminish farmers' marketing cost and can depress producer prices on account of unequal bargaining power. Prices decided mutually in advance may deviate substantially from what could be potentially realizable by spot negotiation but contracts for price determination are not entirely novel, and preharvest contracts with traders are a common practice for horticultural products in India.

Unavoidably, the definitions had to be made broader. Admittedly, there is room for questioning whether all channels studied as 'emerging' are indeed emerging in terms of idea or history. Indeed, the channels under study are far from homogeneous with varying structures and lengths, and they do not necessarily bypass all the traditional intermediaries. However, these channels are not only shorter in length than the traditional ones that operate bringing the producer and the consumer one step closer, but sometimes they also create space for more resourceful and organized players to enter the channels. In all cases studied in this report, the first and most important link in the chain, namely, either the commission agent or the preharvest contractor, is bypassed.

In each case, a sample of farmers selling in a traditional channel, familiar, long-standing and usual in the same region is also selected as a control to facilitate assessment of the emerging channel against a contrasting case. Thus, the two channels differ in their history of existence and the lengths of the channels. The views and opinions of farmers and other agents like the traders, market committee members, buying companies in the channels and the customers in the consuming centres are also sought in an objective manner.

Reforms in agricultural marketing are yet nascent. Our decision about the regions to be sampled in states was constrained by the actual presence of the alternate routes of marketing that can be designated as emerging channels. In most cases, new

channels, if any are scarce, have just begun to evolve and are hard to locate, leaving little freedom for preselecting the regions. Admittedly, the presence of emerging channels dictated the choice of the region.

The regions selected for the presence of the new channels thus varied widely not only in character of the channels studied but with respect to socio-economic environments. This makes comparison among different cases difficult. On the positive side, due to these limitations, the whole project ends up providing an entire landscape of how different market channels with varying attributes emerge and function in different conditions prevailing in these regions. What appears as a fertile ground for one market channel may not be compatible for another.

Noncereal food items like fruits and vegetables and nontraditional edible oils are popular choices of private enterprise-driven marketing channels. These items are increasingly accommodated in the plates of the growing urban middle-class milieu and are becoming common in the shelves of plush supermarkets. Many of these crops are gaining significance for their health benefits as learned from ongoing and recent research on nutrition. Cultivating such crops for the emerging market is viewed as the most potent way towards generating higher incomes for farmers in India. The emerging channels are also considered especially suitable for promoting crops that are known to be perishable. Modern technology for increasing the durability and shelf life of such products is crucial for their commercial success. For this reason, this study has confined the choice of crops to those emerging in significance in India with particular preference for horticultural crops, namely, fruits and vegetables.

4.3 Sampling of Farmers

At the outset, it was intended that each AERC or the Centre would select two horticultural crops preferably a fruit and a vegetable in each of the states designated to them for survey and for each crop; samples of 50 farmers would be drawn using stratified random sampling. To make assessments on the findings from the sample on the emerging channel, a control sample of farmers operating in the traditional channel would therefore also be selected from the same area for comparison. The desired sample size was based on adequacy considerations for statistical meaningfulness as well as on availability of resources. The samples were planned to be stratified by the size classes of farms. However, in actual practice, the targets were in most cases not met as discussed in the following sections. Wherever an emerging channel is operating, a list of participating farmers is obtainable from the concerned authority which could be a market committee, a company or a self-help group with the names of enrolled members, and random draws could be made suitably stratified by farm size from this frame. Sample details pertaining to locations, crops and sample sizes are provided in [Table A.2](#) in the appendix. The distribution of each sample size into three different size classes is given in [Table A.1](#).

4.4 Sample Details on Traditional Marketing Channels

The traditional channel is the most common and long-lasting chain of intermediaries operating in the same area and for the same crop as the emerging channel. Barring a few exceptions, a sample of farmers from the traditional channel of similar size is drawn from the same district and block. The sample sizes for the emerging channel are however relatively less in the cases of Maharashtra and Madhya Pradesh due to paucity of participants.² In West Bengal, no sample was drawn from of the traditional channel in respect of the study crop of Arum as the specific channel studied as the emerging channel seemed to be the only channel for this market. As a compromise, a study of a sample of traditional channel farmers for a different crop, mustard, is provided, but the two cases are obviously not comparable in many ways.

In a few cases, the blocks from which the samples were drawn differed between the two channels. In the case of the emerging channel, often the site was specific to the establishment of a certain facility such as a collection centre, cold storage or processing unit associated with the functioning of the channel, and when all or most farmers in the area found it profitable to join the channel, the other sample necessarily had to be drawn from another region. Thus, Khandauli Block in Agra district is considered for studying the traditional market channel for potato in Uttar Pradesh, and for aonla it is Mongroora Block in Pratapgarh. The corresponding blocks are different though proximate for the emerging channels.

The sample farmers were canvassed with structured questionnaires to elicit information on production, prices and costs as well as for their perception and other qualitative information. Between the surveys, the questionnaires were largely uniform but were also nuanced or differentiated to be sensitive to the differences in the systems of transaction between channels. The reference period for sample is the year 2009–2010.

Along with the farmer survey, information on prices, margins and marketing costs was collected from various agents in the link through separate surveys in each channel. Their perspectives on market functioning and difficulties encountered were addressed as well. However, some of this information could not be collected when the only intermediary was a single agent who was a processor, as the costs incurred and the margins made would be greatly convoluted between purely marketing functions and value-added services and would not be comparable with the traditional channel trader, especially when the processor is of a large multinational character.

Identifying the emerging channels was probably the most challenging task. It was not easy to locate actually functioning marketing channels that incorporate the new features. In states that have, till now, not amended the APMC Acts, there is expectedly no real case for the emergence of new channels. Interestingly, with

²In fact no emerging market could be traced by AERC, Jablapur in Chhattisgarh state where the sample survey was also designated to be undertaken by them.

changes taking place in the larger economy and the neighbouring states, the situation is not really static, even in these states. Amending the legislation, continuing with the old APMC Act or even in the absence of an Act altogether, all states have been shown signs of dynamism, a move towards greater market efficiency and towards relieving producers of the troubles of marketing and negotiating with their traditional buyers. Thus, under the severe limitations too, even in slow reforming (or non-reforming) states, we could identify areas of organic changes that represent indigenous adaptation rather than exogenous implants. We feel that even these developments are worth studying to assess potentials of limited changes.

The study covers 11 states, namely, Punjab, Haryana, Uttar Pradesh and Himachal Pradesh in the north, West Bengal, Assam, Bihar and Jharkhand in the east, Maharashtra and Madhya Pradesh in the west central region and Andhra Pradesh in the south. Of these states, Bihar, West Bengal and Uttar Pradesh have been slower than others in legislating changes. Broadly, the emerging channels identified for sampling and reported are categorized into the following five groups:

1. Sales to users (SU) – Direct marketing to buyers who may include final users (consumers or processors) or also a downstream trader as specified
2. Sales to corporate market intermediaries (SCMI) – Marketing companies intermediating between producer and user or other traders for profit
3. Sales to processors via contract (SPC) – Selling via prior contract to processors who sell to consumers the products in processed form
4. Sales to organized retailers (SOR) – Commodities procured directly by owners of organized retail chains who in turn sell to final consumer
5. Sales via local trader groups (SLT) – Local trader groups (special) buying from producers to further dispose products to traders in the traditional chain

The emerging channels under study are mentioned in Tables 4.1 and 4.2 for two separate groups of states, namely, those who amended the APMC Act and those who did not.

Since the selection of regions largely followed that of the channels, the regions differ in their socio-economic and agronomics features associating the emergence of specific channels with regional characteristics. In one case in Madhya Pradesh, no horticultural crop could be identified in the emerging channels, and the crop soya bean, another crop of emerging significance, was chosen for study. So they study only one crop, i.e. soya bean, which is an important oilseed in today's context. Sehore district is the area of study, and the much celebrated ITC e-Choupal is the emerging channel studied. The limitation compelled them to confine the study to soya bean in Madhya Pradesh only.

Scale bias is observed in the participation where small producers find it difficult to enter the chain or large farmers are disinterested in some forms of marketing. Sometimes the actual number quoted in the list is so small as to limit the sample size. In many cases, certain farm size classes could not be represented in the sample. Stratification was also difficult in view of the varying average farm sizes among the areas and the farm-size sensitivity of certain channels. In certain cases such as

Table 4.1 Emerging market channel under study in sample states with reforms in APMC Acts

States	Andhra Pradesh	Jharkhand	Maharashtra	Himachal	Madhya Pradesh	Assam	Haryana	Punjab
Channel 1	SU	SOR	SCMI	SCMI	SCMI	SU groups	SOR	SU
Crop	Banana	Cauliflower	Onion	Apple	Soya bean	Orange	Muskmelon	Kinnow
Name	Rythu Bazaar	Reliance Fresh	DFPCL-Saarthie	Adani Group	ITC e-Choupal	Self-help group	Reliance Fresh	Farmers' Evening Markets
Channel 2	SU		SCMI	SOR	-	SPC	SOR	SPC
Crop	Brinjal		Pomegranate	Tomato		Potato	Tomato	Potato
Name	Rythu Bazaar		DFPCL-Saarthie	Mother Dairy (parastatal)		Kishalaya Snack Products via an NGO	Reliance Fresh	PepsiCo.

SU sales to users, *SCMI* sales to corporate market intermediaries, *SOR* sales to organized retailers, *SPC* sales to processors under contract, *SLT* sales through local traders

Table 4.2 Emerging market channel under study in sample states with no reforms in APMC Acts

States	Bihar	West Bengal	Uttar Pradesh
Channel 1	SLT	SLT (contract)	SPC
Crop	Mango	Arum	Potato
Name	Traders	Traders	PepsiCo India
Channel 2		–	SPC
Crop		–	Aonla
Name		–	Satkar Fruit Products

SU sales to users, *SCMI* sales to corporate market intermediaries, *SOR* sales to organized retailers, *SPC* sales to processors under contract, *SLT* sales through local traders

Maharashtra, the sample size is unavoidably small due to unavailability of emerging channels in the presence of a very large traditional system of marketing (Table A.33). Large farmers find no representation in Andhra Pradesh and West Bengal's emerging channels, and small farmers are nearly missing in Punjab sample (see Table A.33).

4.4.1 Problems of Sample Designing

The limitations of the primary survey exercises include paucity of emerging channels, inability to locate horticultural crops in all cases and difficulty of stratification in view of the varying average farm sizes among the areas and because of farm-size sensitivity of certain channels. Another serious problem arises from the blurred distinction between the two types of channels by any specification. The emerging channels thus do not necessarily circumvent the traditional chain of unorganized traders in all cases, but in all the emerging channels that we could study, the first link, generally the commission agent or the preharvest contracting trader, is bypassed as a mark of commonality. In many cases, the presence of an organized corporate entity serves to reduce the channel length considerably or even replace all the individual traders. The functioning of the emerging channels is studied carefully to bring out the implications for the channel length.

4.4.2 Tracing the Channel Length and Limitations

The channels generally span large spatial dimensions, covering rural and urban areas and sometimes several states and even other countries. Thus, following a chain is not an easy task. We have not attempted to follow every chain but rather in a limited manner sample key intermediaries at each point in common chains of the region leading to proximate urban market centres as terminal points, both to obtain estimates of prices, costs and margins and to understand the views and perceptions of agents about the market functioning.

In some cases where the product reaches a large processor, we have truncated the channel and made no attempt to factor in the costs of processing which is beyond the scope of this study or to estimate the consumer price which relates to a different finished product. Instead we assume the price paid by the user in the traditional channel as the notional terminal price in assessing efficiency. In other words, the costs and the margins incurred by the processor are not taken into consideration explicitly. The margin obtained this way would however admittedly include a component of the implicit gain exploited by the processor buying at a rate lower than what the consumer pays in the open market. In reality, the processor is likely to be appropriating higher costs and margins than can be measured in this study. Thus, the user price or the terminal price is not necessarily the consumer price. This price in such cases is identified at a relatively upstream link in the chain.

Where the product is disposed through malls, to circumvent the intricacy of comparing the interfaces in the mall and at the retail shops, the purchase price paid by malls is taken as the terminal price, and no further exploration of costs and margins within the mall is attempted. Arguably, the terminal price may imply an underestimation in the case of the emerging channel. By these means, we try to maintain interchannel product compatibility when assessing the final prices.

The channel length is gauged in terms of the presence of traditional individual intermediaries. Thus, in direct marketing where the producer sells to consumers without intermediation, the length is deemed to be the shortest with no organized entity being accommodated in the chain. Other such channels are found to accommodate a number of traders (this includes direct sales to downstream traders). In between the extremes, there are a two cases, one with only a single organized intermediary and subsequently longer one where the organized intermediary operates with the number of trader.

4.5 Methodology

The evaluation of market channels is made both by means of quantitative and qualitative assessments. We have identified three attributes of focus, namely, (a) channel performance judged by efficiency gain from the emerging channel, price determination, transaction costs and economic gains made by producers and users; (b) the ability of the emerging channels to draw participation from land poor and resource poor less privileged farmers; and (c) development effects on agriculture in terms of productivity gain or loss, returns from farming and implications for sustainable farming practices. The actual analysis however is heavily sensitive to the information that could be gleaned in the field surveys. The analysis is made by evaluating the sample averages of participating households and comparing the same with corresponding averages from traditional channel participants. Variations around the average however are not taken into account.

4.5.1 *Channel Performance*

Channel performance is generally quantified by indicators that take account of the (i) extent of marketing costs including the intermediary margins relative to what is actually received by the farmer or paid by the user and (ii) price magnification or the inflation of product price from what the farmer gets to what the final user pays. In the literature on markets, the measurement of market efficiency has been an important exercise and needs some discussion. Because measurement has its limitations, apart from the quantified assessments, qualitative considerations are made with equal emphasis in the course of the discussions.

4.5.2 *Inefficiency of Market and Measurement Issues*

Essentially, in physical and social sciences, efficiency measures hinge on output-to-input ratios. Defining the output and the input is however far from simple in marketing function. Efficiency is therefore a profound concept in context of marketing and the input being intangible and amorphous, it is difficult to capture quantitatively.

The Shepherd formula discussed later on often provides a basic building block to the measurement of marketing efficiency. With liberalization and the opening up of markets from state controls, a search for a comprehensive measure for market efficiency became more intense as quantification of market efficiency became a practical prerequisite for the assessment of economic liberalization. Econometric measures based on cointegration analysis of price data gained popularity over the ratio-based measures, although at the high cost of treating complex markets in operation in an unrealistically simplistic fashion.

While a comprehensive measure of marketing efficiency is analytically useful, any measure of efficiency would also depend on the objectives (output) to be fulfilled and from whose perspective the objective is viewed. Firstly, the theoretic assumptions behind commonly used measures are till now largely unexamined. Secondly, more interesting and relevant questions that merit probing remain unanswered in the enquiry on markets when such single measures are employed only. It has even been claimed that 'efficiency' is impossible to evaluate with empirical precision (Harris-White 1996). Thirdly, advances in measurement have not escaped distortion imposed by 'methodological corruption' on account of shortcomings like vagueness of definition, aggregation problems, scant attention to the presence of by-products, lack of historical evidences and above all 'ideological deployment' of methods to justify a 'minimalist' role of the state. Econometrics-based common methods have 'reduced' evaluation exercises to using only prices for analysis and 'integration' to proxy for efficiency and competition. Scant attention is paid to the character of adjustment of sellers of output to effective demand. The nested nature of agro-markets combined with the vertical integration in channels complicated and compounded by the difficulties of measurement and undermines its meaningfulness of these quantitative measures.

The relation between the production and the marketing cost is more widely believed to provide an important clue to market efficiency although this is equally likely to miss out pertinent and often finer points.³ In this approach, marketing margins and ‘spreads’ between producer and consumer prices are commonly associated with inefficiency. To avoid ‘erroneous generalizations’, it is also essential to examine the quality of marketing services (Jasdanwalla 1977) that may account for the spread. Provision of services from the new marketing channels being far different in quantity and quality from the traditional marketing channels makes this measurement challenging and open for debate.

Conceptually, a simple ratio of market output to market input is proposed as a measure of market efficiency where efficient marketing would be consistent with the movement of goods from producers to the consumers at the lowest possible cost (Kohls and Uhl 1980; Clark 1968). A simple measure under this conceptualization would be the ratio of the value added to the total marketing cost. A more popular method is the celebrated Shepherd formula which is ratio of the total value of goods marketed to the marketing cost which obviates the problem of measuring the true value added from marketing. Nevertheless, the inclusion of only marketing cost in the denominator as input generates unsatisfactory results when the marketing chains involved are long, resulting in intermediaries’ margins that do not always flow towards necessary services (see Sect. 3.1). In effect, Shepherd’s formula (Shepherd 1965) assumes that marketing cost includes fair margins of intermediaries. A modified measure of marketing efficiency (MME) is suggested by Acharya and Agrawal (2004), which takes into account both marketing costs and margins per unit of product marketed and the farmer and consumer prices to compare channels (Eq. 4.1):

$$MME = \frac{FP}{(MC + MM)} \quad (4.1)$$

where FP is the price received by farmers, MC is the total marketing cost in the channel per unit of output and MM is the net marketing margins per unit of output.

4.5.3 Quantified Indicator

What prevents us from using the MME directly in this study relates to our broad objectives and theoretical understanding of the present issue.

For one, we hesitate from describing the ratio of the farmer price to marketing costs ($MC + MM$) as inefficiency. The purpose of inculcating efficiency in the

³For example, in the Indian case, it was suggested that finer aspects such as shifts to the ‘tender’ system of sale from the more time-consuming ‘open auction’ sale, structural surfacing of link roads, promotion of the trucking industry for transportation and extension of grading and warehousing facilities merit consideration as components of efficiency gain rather than a complete overhauling of the system.

system is to minimize or eliminate unnecessary costs. As we already discussed at length in Sect. 4.1, part of these costs may actually be necessary and productive, while part of this is avoidable, but the formula makes no difference nor is it easy to formulate the difference especially if such cost is associated with superior services. Given the ignorance surrounding this measure, no upper limit or lower limit can be imposed on this measure as is, for example, possible by measurement methods such as the data envelopment analysis (DEA) developed by Charnes, Cooper and Rhodes (1978). In the extreme case, when the entire amount of marketing cost is avoidable which is not so improbable in today's market as in some forms of direct marketing, the efficiency is not defined at all. Secondly, the presence of farmer price in the numerator puts unwarranted emphasis on producer interests. For example, when we propose that the user price is the sum of farmer price actually received (net of marketing cost incurred by farmers) and all marketing cost and margins involved in the chain, the same reduces to Eq. 4.2 as follows:

$$MME = \frac{UP}{(MC + MM)} - 1 \quad (4.2)$$

where UP is the user price. In this case, the efficiency can be enhanced by simply increasing the farmer price and passing it on to the consumer price without changing the margins or marketing costs. When such a price increase originates from a rise in input prices, the effect on MME can hardly be treated as an efficiency gain in marketing so that the burden on the consumer is grossly underemphasized. When part of the denominator, i.e. the marketing costs and margins, can be potentially reduced through better practices, such a passing on of farmer price to the consumer is highly undesirable. The inherent presumption in the formulation not only undervalues the consumer interest, in favour of the producer interest, more importantly, it overlooks the longer-term impact of the price rise on demand and consumer welfare through price elasticity.

The market efficiency indicator (Shepherd formula) developed and further improved in literature despite its weakness can be used to measure market performance in a comparative sense, but even this has been rendered difficult due to complexities created by processing and other sources of non-comparability. Given that prices differ across individual transactions between the producer and the buyer and between the parties at various links in the marketing chains, the definitions of the producer price and especially the terminal price have to be made with care even while some degree of abstraction is unavoidable. In particular, the terminal price is specified under severe limitations imposed by the differences between the supply chains.

In our quantitative assessment of market performance, we have taken into account three aspects, namely, the prices actually received by the producers or the net adjusted farmer price (NAFP), the returns made by the producers from farming of land (RTNLAND) and the costs and margins incurred in the process of marketing relative to what the producer receives (RGMCF). The estimates assessed are averages for sample farms in the channels and are explained below.

4.5.4 Net Adjusted Farmer Price

The net farmer price or the price actually received by the farmer for a unit of product marketed differs from the recorded farmer's price (FP) in the channel when marketing is a costly process. We make adjustment for possible rejection and wastage of products to obtain adjusted farmer price (AFP). The rejected product may possibly find an outlet elsewhere outside the channel possibly at a lower price and a part of it can remain unsold. The net adjusted farmer price (NAFP) is the AFP less the marketing cost that is incurred by the producer:

NAFP net adjusted farmer price (Rs/'00Kg)

$$NAFP = AFP - FMCOST \quad (4.3)$$

FMCOST farmer marketing cost (Rs/'00Kg)

$$AFP = \frac{(PCH * QSOLDCH) + (PELS * QSOLDELS)}{QMARKCH} \quad (4.4)$$

where

PCH price fetched in specified channel (Rs/'00Kg)
PELS price fetched elsewhere for rejected product (Rs/'00Kg)
QSOLDCH quantity sold in specified channel ('00Kg)
QSOLDELS quantity sold elsewhere if rejected in specified channel ('00Kg)
QMARKCH quantity marketed in the specified channel ('00Kg)

and

$$QMARKCH = QSOLDCH + QSOLDELS + QUSOLD + QWASTE \quad (4.5)$$

where

QUSOLD quantity marketed in specified channel but unsold ('00Kg)
QWASTE quantity marketed in specified channel but wasted due to rotting or any reason (Rs/'00Kg) but not due to rejection
PTERM price at terminal point ('00Kg)

The marketed quantity (*QMARKCH*) channel is the amount intended for selling in the specified channel, but parts of it may have to be sold in other channels or remain unsold both owing to rejection or were unavailable for selling because of spoilage during the marketing process. Marketing scale of the farm is measured by the amount marketed in the channel valued at recorded official prices, regardless of

whether the amount could not be sold in the channel or if it had rotted. Price magnification is the ratio of the user price to net farmer price:

$$MSCALE = (PCH * QMARKCH) \quad (4.6)$$

$$PMAG = \left(\frac{PTERM}{NAFP} \right) \quad (4.7)$$

4.5.5 Gross Marketing Cost

Drawing from Shepherd's conceptualization, we define a measure of relative gross marketing cost (RGMC) which is the gross marketing costs (GMC) relative to NAFP where GMC is the sum of marketing costs incurred by various agents including the producer and the margins made by market functionaries involved in trading (but not including farmer's margin or profit from production). The GMC per unit of marketed product is then standardized by the NAFP to obtain an estimate of the RGMCF (Eq. 4.9). Intuitively, the RGMCF measures the marketing costs and margins in value terms incurred in generating one rupee of price actually received by the farmer marketing the product. In respect of the user, the same will be expressed in regard to terminal price (RGMCU), where the amount paid by the consumer or other users is treated as farmer's benefit. It may be observed that we do not treat GMC or RGMC per se as estimates of inefficiency because part of the marketing costs and margins may be attributed to productive and necessary functions:

$$GMC = FMCOST + \sum_l IMCOST + \sum_l IMM \quad (4.8)$$

$$RGMCF = \left(\frac{GMC}{NAFP} \right) \quad (4.9)$$

$$RGMCU = \left(\frac{GMC}{PTERM} \right) \quad (4.10)$$

where *FMCOST* is the marketing cost incurred by the farmer, *IMCOST* and *IMM* are the marketing cost incurred and the margin reaped by an intermediary at a link (l).

The inefficiency of the market representing the unproductive (or avoidable) elements of the marketing costs is assessed only by comparing the gross marketing costs and margins incurred for every rupee reaching the producer in the emerging shortened channel with a traditional channel prevailing in the region to get an estimate of the savings effected. Thus, savings in marketing cost in the emerging channel is measured by the reduction in the marketing cost per farmer rupee over that in the parallel operating channel of the traditional type. This is expressed in

absolute value such as *paisa* of cost reduced per every rupee received by the farmer (SMF) or in relative terms as a percentage with the traditional channel as base (RSMF) in Eqs. 4.11 and 4.12. Similarly taking consumer's rupee as the reference the savings may be analogously measured as SMU and RSMU (Eqs. 4.13 and 4.14).

$$SMF = RGMCF_E - RGMF_T \quad (4.11)$$

$$SMU = RGMCU_E - RGMCU_T \quad (4.12)$$

$$RSMF = \frac{SMF}{FGMF_T} * 100 \quad (4.13)$$

$$RSMU = \frac{SMU}{RGMU_T} * 100 \quad (4.14)$$

where subscripts E and T are for the emerging and traditional channels, respectively.

4.5.6 Qualitative Insights

It is already highlighted on the basis of the literature on the subject that the quantitative measurements suffer from serious limitations and can at best offer imperfect indication of inefficiency. To factor in the complexity of the subject, we also present qualitative assessments based on perceptions of stakeholders, interactions with functionaries and on-site exploration to capture the latent transaction cost involved in the channels and the complications of the systems. The qualitative assessments merit consideration as much as quantitative estimates.

The transaction cost aspects are addressed by soliciting information and perception on certain attributes from the producers. Broadly, this query relates to the following experiences:

1. Infrastructure and amenities accessible in the market that facilitate transaction and provide convenience to sellers
2. Confidence placed on the buyer and any deviation of the received price from the producer's own expectation
3. Access to price information including the contribution of the channel itself in enlightening the seller
4. Difficulty of recovering dues and practices of recording the transaction
5. Conflicts with the buyers
6. Dependence on the buyer for support other than marketing (such as timely credit, input know-how)

Similar qualitative insights are also gathered from other market agents including key intermediaries and consumers for an unbiased outlook.

Alongside, the channel is also evaluated by the dependency shown by producers through their disposal patterns, their tendency to diversify among channels and the scale of marketing of the product offered in the specified channel. The producer price is adjudged not only by the official prices recorded but by the actual price received by the producers with adjustments made for rejections and wastages.

The incidence of product loss in marketing due to rotting and other forms of wastages is also treated as a constraint possibly imposed by the channel.

How price is determined is an important aspect of the emerging channel and an early message on future implications. We examine how far demand and supply forces directly play a part in this process. We seek to understand the process by which the price is determined or decided. Such processes may include open auctions, mutual bilateral negotiation, advance agreement and adjustment to a reference price. Price can also be dictated if the buyer is powerful enough and producers have no options creating a monopsonistic situation.

We also ask what would be the sources of information based on which the farmer and the buyer negotiate and how satisfied they are with the prices received and with the merchant service. The assessments bring out the mutual interactions to shape the knowledge set, the role of public intelligence and auctioning if any. Perceptions of farmer and other agents about one another, market infrastructure, services, conflicts and suggestions are solicited. The difficulties and constraints learned from the exercise give an idea, though unquantified, of the transaction cost facing the farmers.

4.5.7 Inclusiveness

This measure is intimately related to the definition of what is commonly called class. Classes are classically defined in terms of forces and relations of distribution, such distributions being related to assets, information, activities and access to state facilities. Viewed differently, classes within the market are proposed in terms of access to the means of distribution, transport, location, capital, credit and information and the status in terms of surplus appropriation, all of which are key expressions of power. As in the case of market efficiency, this subject is also highly contestable.

In this study, inclusiveness of participation is assessed primarily by the representation of small farmers in the sample. Small farmers, as is usual, in official parlance are specified as farmers who cultivate up to 2 ha of land. The size classes in this study are however specified in a different way, more in consistency with the actually observed situation on the field than with official specification⁴ as follows:

1. Small – Cultivating up to 2 ha
2. Medium – Cultivating 2–4 ha
3. Large – Cultivating more than 4 ha

As discussed in Sect. 3.1, the farm size is only an incomplete indicator of the class dimension of the producer especially in the current context when nonfarm

⁴ Official categorization of farm size classes is as follows: marginal (cultivating up to 1 ha), small (cultivating 1–2 ha), medium (cultivating 2–10 ha) and large (cultivating over 10 ha).

incomes are important supplements. We therefore also view the class delineation in a broader purview. Ownership of key assets, privileges and social class are also treated as indicators of inclusiveness such as (i) backward caste or minority status, (ii) physical mobility, (iii) ownership of farm asset and (iv) disadvantage of communication. For simplicity, certain specified privileges are considered only.

- (a) *Social disadvantages*: Backward castes include both scheduled caste (SC), scheduled tribe (ST) and minority community which is specified to include all communities other than those who constitute the numerically dominant community in the region (Hindus by religion in most cases, also Sikhs in two states Punjab and Haryana). The total share of all the above marginalized sections is considered, but a regional dimension in their distribution may be noted. In some areas, ST population is dominant, whereas in others there is hardly any presence of the tribal population, and the communities like Muslims and Christians are distributed in uneven ways in the country.
- (b) *Mobility disadvantages*: Physical mobility a major privileged for any economic agent is measured by the ownership of a motor cycle as it offers a potent and feasible means of physical communication on rural roads. However, it may be noted that some of the deprived households can have four wheelers although the nature and quality of latter vehicles (cars, trucks, simple trawlers and tractors can be varied) is difficult to qualify from the data.
- (c) *Communication disadvantages*: Communication in terms of information flow, also important for transaction and production planning, is facilitated by the use of mobile phones, and the lack of one is treated as a distinct disadvantage. Possession of a mobile phone vastly improves linkage, giving access to potential buyers and to other market information. It also helps to overcome constraints on rural physical connectivity to an extent.
- (d) *Farming disadvantages*: Ownership of farm assets is important for productivity, but these can be varied and may not be equally useful in all cases. We have considered only one basic equipment found to be relevant in all the cases considered, important in all the cases survey which is the pump-set used for irrigation.

While the above are common attributes used as specification on non-inclusiveness, other aspects of socio-economic profiles of the sample farm households such as farm classes, housing, education, ownership of different economic assets and agricultural attributes are also discussed.

4.5.8 Development and Farm Practices

The benefits of the new channels on agriculture are reflected not only by the higher prices fetched by the producers and their earning potentials but also by the productivity performance and longer-term aspects bearing on sustainability of development. Farm practices are assessed by comparing the two channels in terms of usage of modern methods specifically the use of chemical and organic inputs on farms. Modern channels such as contract farming are often associated with ecologically

undermining practices such as excess use of chemicals and dwindling of organic amendments. On the contrary, greater knowledge and access to resources may lead to water-saving techniques and improved storage technology on farm. There is also curiosity on whether these channels rely intensely on family labour or are moved towards more professionalism through labour hiring.

4.5.9 Returns from Land

Returns made from farming of land are the crucial indicator for the poverty eliminating potentials of reforms. Obtained as the revenue made from sales less the out-of-pocket (paid) cost of production and the marketing cost incurred by the producer. *RTNLAND* (Eq. 4.15) is expressed as

RTNLAND returns from land (Rs '00000/ha)

$$RTNLAND = (NAFP - FPCOST) * FYLD \quad (4.15)$$

where

FPCOST farmer production cost (Rs/'00Kg)

FYLD farm yield of crop ('00Kg/ha)

4.5.10 Difficulties and Limitations

That markets for agricultural goods, viewed as institutions are complex, reforms are only recent initiatives and the measures that the literature provides on measuring market performances are inadequate and full of weaknesses are some of the constraints of the analysis listed in this chapter. That all these along with our own limitations on time, resources and managerial capacity for coordinating a large study will reflect on the study cannot be denied.

Severe limitations also affect the study design and the sample as already highlighted. Definitional problems are colossal especially when it comes to specifying the market as traditional or emerging given the wide variation of market structures across the regions and within any region, the porosity of the boundaries and the subtlety with which it is changing in recent times. Most notably, the pace of reforms has been different across regions due to state resolutions. The meaning of reforms (or lack of them) can also be profoundly different in actual practice.

Sample sizes can hardly be uniform given the paucity of cases of emerging markets in certain areas and the need for doing justice to a study in areas where the market has evolved to an appreciable extent. The sizes are determined by

availability of data within the limits set by our methodology. Admittedly, sample sizes fall short of what we desired in certain cases. Products studied also vary. The emerging markets too vary in their structure, organization, objective, ownership and operation. We can only defend these limitations by the practical and theoretical difficulties encountered and also by the positive aspect of the rich variety of information that they leave us with.

Finally, the study depends crucially on the availability of field information and thereby on the diligence, rigour and innovations of the investigating centres that form the building block of the study. While the basic minimum deliverable targets linked with methodology and coverage were not only adhered to but supplemented by additional information perceived relevant at the level, information both as quantitative and qualitative data and the insights tend to inevitably differ among the regional submissions. To do justice to the knowledge gained, this study integrates much of the information gathered but cannot in the process provide a homogeneously informed view in all cases. Thus, certain valuable information such as on product disposal and the level of dependence on the channel can be presented only in some cases and not in others because faced with the non-uniformity we decided to present the additional information wherever available.

Chapter 5

India's Agricultural Markets: Regulation and Revitalization

Marketing of surplus grains was historically a traditional practice in India despite the dominance of subsistence farming in small farms. Sensing how farmers were disadvantaged in the unequal power relations that prevailed in rural markets, the *Royal Commission on Agriculture* advised regulated marketing way back in 1928. The Agricultural Produce (grading and marketing) Act passed in 1937 gave statutory powers to state governments to manage agricultural markets. The situation was however not greatly better when India became independent in 1947. State regulation of marketing continued to guide policy since then, and later on, interventions became even more important when the green revolution was launched.

Agriculture being a state subject, political compulsions of the states shape the marketing policies even though the central government provides regular guidance. After independence, most states passed legislations to build the infrastructure of markets for trading agro-products and to create the regulatory environment, making up what we will call in this study the traditional marketing system.

Marketing and agricultural policies however revolved around grains, considered to be central to the attainment of national food security. At present, 24 commodities are covered under minimum support price (MSP). Besides, commodities like onion potato, ginger, chillies and some fruits are included under Market Intervention Scheme (MIS) which is more flexible in terms of period of support, coverage of area and level of support prices, but the market for horticultural crops remains rather incomplete. This chapter will give a brief description of the transitions in Indian food marketing and will examine the progress and status of reforms in this aspect in the recent phase.

5.1 Rural Markets

India started out with a highly undeveloped agriculture. Formation of village markets for food was severely inhibited by scattered population living in villages now numbering over 6 lakhs (MOHA-GOI 2011) often labouring under poverty stricken

conditions. Markets operated in tiers (primary market or periodic 'haat', 'mandi', the wholesale market serving a limited radius, larger wholesale markets in cities and retail shops scattered all over villages, towns and cities). Large networks of traders also known by names like 'adtyas', 'arathdars', commission agents, wholesalers, preharvest contractors and retailers operated in long chains to connect the producers with the consumers. The market was also known to be 'inter-locked' where the same agents served as money-lenders, buyers of products and sometimes also landlords so that transactions in different markets did not remain independent.

Deeply reliant on these multi-faceted private agents, the farmer was left with little freedom in their choice of crops, inputs and the channels of disposal. Share-cropping developed to allow risk mitigation but the farmer generally faced unwritten, unregulated and unfair contracts that often compromised his independence in other markets. The typical farmers were poor, uneducated, uninformed and indebted. They transacted in individual capacity with no collective say and little legal support.

5.2 Early Transitions

Legislations such as the abolition of zamindari system, curbs and bans on unorganized moneylending, ceilings, inheritance laws and tenurial reforms that the Government of India introduced after independence were meant to free the farmers from the stronghold of rural power centres. Product marketing too was a subject of legislative reforms going through various trials and experiments ranging from complete nationalization of grain trade in early 1970s to private trading under regulation.

The early years of independence (mostly in the 1960s decade) saw frequent reorganization of states that resulted in a multiplicity of mutually inconsistent market-regulating rules drawn from legislations that had been enacted in the different parent states prior to independence. Overtime, the new states gradually consolidated the older laws by enacting new legislations and entered into one long era of agricultural marketing that lasted till the end of 1990s if not later. The Agricultural Produce Marketing (APMC) Act brought most of the wholesale and primary markets under state regulation. The key purpose of the Act was to protect the interests of the farmers against exploitation by more powerful traders and to narrow the price spread between the producer and consumer.

Under the Act, transactions were mandated to take place in 'mandis' or regulated markets (RM) that were democratically governed by elected boards and committees made up of representatives of all stakeholders including the government. Prices are determined fairly in open auctions. The committee provides for limited infrastructure and other facilities. Fees charged from the parties help to keep the markets operational. Subcommittees were catered for dispute settlement. The number of regulated markets stood at only 286 at the time of independence. The number was over 7,000 in 2001 and 7,521 in 2005.

5.3 Consumer Protection

The Essential Commodities Act 1955 (ECA) was enacted to protect the interest of the consumers by ensuring equity, controlling prices and supplies of essential goods and preventing unscrupulous activities of ‘hoarders’ and ‘black-marketeers’ (MOFPI-GOI 2013). The Act specified a list of ‘essential’ commodities that could be reviewed from time to time, imposed limits on the stocks that could be held privately (obviously, the government was excluded), required traders to have licences and permits and laid down restrictions on the movement of goods between states or even among districts at various times.

The ECA was further strengthened by other Acts (like the Prevention of Black Marketing and Maintenance of Supplies of Essential Commodities Act, 1980 and the Consumer Protection Act of 1986), but the implementation of the Act was delegated to the state and UT governments. When the paradigm driving the economic policy of the country changed, it was felt that ECA has become an undesirable hindrance on traders, also inhibiting investment flow in agriculture (Virmani and Rajeev 2001). In an increasingly globalizing market, the fragmentation created by ECA within the country was inconsistent.

In 1993, the central government began to treat the entire country as a single food zone, and the success of marketing reforms depended on the removal of the control regime created by the ECA in the states. Several states revised the limits of stocking, but rules and regulations varied from state to state. In February 2002, the Food Ministry in India¹ withdrew many of their regulatory measures on trading, and the list of ‘essential commodities’ covered was greatly pruned in 2002. The Foodstuff Order, 2002, 2003, allowed dealers to freely buy, stocks, sell and distribute any quantity of foodgrains, and the definition of a ‘dealer’ was amplified to include producers, manufacturers, importers and exporters.

5.4 Institutions for Agricultural Marketing and Recent Tendencies

Phenomenal growth in Indian agriculture since independence transformed the country from a deficit state to a self-sufficient and nearly exporting state.² The Five-Year Plans right from the First Plan laid stress on the development of physical markets, on-farm and off-farm storage structures and facilities for standardization and grading, packaging and transportation. Until the Third Plan, the policy emphasis however remained confined to cereals. Horticulture and other crops like oilseeds

¹ Now called Ministry of Consumer Affairs, Food and Public Distribution.

² India exported 5 million tonnes of wheat and 9 million tonnes of rice in 2012–2013 and has a large food stock in public storage.

and pulses and more recently livestock products gradually gained importance in policy thereafter.

The government intervened in the marketing through various means and institutions, some of which were meant to support its price intervention objectives. Agricultural Prices Commission (APC) later renamed Commission for Agricultural Costs and Prices (CACP), set up in 1966; the Food Corporation of India (FCI) dealing in cereals; Board like structures for other crops (like the Cotton Corporation of India (CCI), Jute Corporation of India (JCI), Tea, Coffee, Coir, Rubber, Sugar, Spices and Silk Boards); and the National Agricultural Cooperative Marketing Federation (NAFED), a central nodal cooperative agency of the government undertaking both price support operations of nonperishables (pulses, oilseeds) and market intervention in perishable horticultural products (potato, onion, grapes, kinnow, oranges, eggs, apples, chillies, black pepper, etc.), are the major public institutions that facilitate marketing in agriculture. Other cooperative organizations including National Cooperative Development Corporation (NCDC) and Tribal Cooperative Marketing Development Federation (TRIFED) may also be mentioned. The cooperative organizations have the broader objective of promoting these products, marketing of the products being one of the constituents. The National Consumers Cooperative Federation (NCCF) both procured and distributed commodities needed by middle-class consumers. Horticulture was promoted through the National Horticulture Board and the National Dairy Development Board (NDDB), and further, the State Trading Corporation (STC) and Agricultural and Processed Food Products Export Development Authority (APEEDA) promoted export of agricultural products especially horticultural products. The state governments too have their own institutions for supporting farmers. The National Horticulture Mission (NHM) is a major initiative to promote and organize the horticulture sector in recent times.

5.4.1 Market Intervention Scheme

A Market Intervention Scheme (MIS) is in operation for fruits and vegetables in some states with central budgetary allocation to offer remunerative prices while ensuring qualitative grade standards. Some states had their own arrangements too. The Himachal Pradesh Horticultural Produce Marketing and Processing Corporation Ltd. popularly known as *HPMC* was established in the year 1974 with the objective of marketing fresh fruits and processing surplus fruits. The Corporation has a vast range of processed products with two modern fruit processing plants. As changes in dietary preferences of the Indian population became apparent, horticulture gained increasing significance. Fruits and vegetables being highly perishable and also amenable to processing, investment in the sector was more important than in others, and the horticulture market was opened up for private competition. An institution for promoting suitable marketing channels to benefit both farmers and consumers was perceived to be of serious policy significance.

5.5 APMC Acts, Auctions and Evaluation of the Regulated Markets

After independence, most of the state governments enacted legislations (APMC Acts) to provide regulation of agricultural markets by building up, restoring and institutionalizing a network of physical markets where transactions take place in a fair and transparent manner. The State Agricultural Marketing Board (SMB) is the apex regulatory body created to execute market development expeditiously. The regulated markets (RM) and the market committees (MC) or in common parlance the APMCs were established in each state in notified areas by the respective state governments. Only the state governments were permitted to set up these markets in keeping with the tenet of a welfare state. The regulation of markets had several good intentions such as sales only through auction method, reliable weighing, standardized market charges, timely payment of cash to farmers without undue deduction, dispute settlement mechanism, reduction of physical losses of produce and provision of several amenities in market yards.

5.5.1 Regulated Markets

As centralized places for wholesale selling of agricultural produce in defined areas of operation (see Chap. 6), the regulated markets, supervised by autonomous bodies (APMC), have the noble objective of ensuring fair prices to farmers. Mumbai has the largest Indian regulated market. The markets incur expenses broadly on items like maintenance and improvement of markets, buildings, standards of weights and measures, salaries and pensions of personnel, interests of loans, collection and dissemination of market information and also propaganda for agricultural improvements. Licence and renewal fees collected from middlemen, market fees on produce brought for sale, and settlement of disputes constitute the revenues of the market. Updated information on inflow of various agricultural commodities, prices and month-wise demand and supply situation are recorded regularly in the market contributing to the statistical database of Indian agriculture.

The regulated market (RM) is defined by (a) a market committee designated to be representative of stakeholders and to be elected democratically, (b) a specified area of purview (as notified), (c) the defined methods of sales, (d) licensing and monitoring of the functionaries by stipulated authorities and (e) the levies and fees imposable for running the system. The producer (though not directly involved), commission agents, brokers, *adtyas*, wholesalers and retailers are different participants in the market along with paid personnel.

5.5.2 Pricing and Auctions

The first exchange of the agricultural produce that is marketed takes place in the local rural regulated market. Protecting the producer's interest is a primary consideration at this level. To ensure fairness, price is expected to be determined strictly by auction. In economic theory, an auction may refer to any mechanism or a set of trading rules for exchange so that the price is determined by the forces of demand and supply.³ Open auction is the mandated method in agriculture market regulation. Secret tenders or sealed bids are another means of auctioning applied widely in India in various other transactions, but this is generally not the practice in RMs. In this method, unlike in open auctions, the bidders can only submit one bid each and cannot see the bids of other participants and hence cannot adjust their own bids accordingly. The development of the Internet has led to a significant rise in the use of auctions as auctioneers can solicit bids via the Internet from a wide range of buyers in a much wider range of commodities than was previously practicable. Agricultural marketing too is profoundly affected by this development especially in the forward market operations.

There are various ways in which auction can take place in a traditional market. Sale by checking a sample of products is the most convenient and cost-effective way, but the acceptability of this method is determined by honesty and trust. *Hada* sale is another procedure but which is not legal. It is based on signals and gestures rather than shouting to ensure confidentiality. *Dara* sale is a process where the product is differentiated, but the price for each variety is fixed. The method is applied only to a few crops like onion and potato. However, open auction which is the hallmark of the regulated markets is the most transparent process in which the commission agent takes the bid on behalf of the producer to locate the highest bidder.

³ Auctions have not been very common a few centuries ago although their existence is recorded in Roman history even in 500 BC. Works of art were sold by the method, and the oldest auction house in the world is the Stockholm Auction House established in 1674. Sotheby's and the Christie's are other long-standing examples. English auction, an open auction, is the most common practice in which participants bid openly against one another, with each subsequent bid required to be higher than the previous bid (alternatively, it can also be reverse). An auctioneer may announce prices to which the bidders may call out their bids. Walrasian auction is another open auction. The *Walrasian tâtonnement* is an auction in which the auctioneer takes bids from both buyers and sellers in a market of multiple goods. The auctioneer progressively either raises or drops the current proposed price depending on the bids of both buyers and sellers, the auction concluding when supply and demand exactly balance. As a high price tends to dampen demand while a low price tends to increase demand, in theory there is a particular price somewhere in the middle where supply and demand will match.

5.5.3 *Postharvest Losses in Horticulture*

The regulated marketing system is often held responsible for the large amounts of postharvest losses (PHL). Though India is the second largest fruit producer in the world, availability in market is low due to PHL. For a vast agriculture where fruit-bearing trees are found dispersed, estimates of PHL in India are scarce and methodologies underdeveloped. Postharvest losses of major fruits at various stages of marketing are estimated by unconfirmed sources and methods at 15–50 % (FAO 1981; Roy 1989) and at 1.2 % of agriculture GDP by a systematic study (Murthy et al. 2009). Another study estimates the losses (CIPHET 2010) to be in the range of 6.3 (citrous) to 12.3 (apple).

The marketing practices for fruits and vegetables need to be different from those used for grain. Marketing rules in India, as described earlier, necessitate complex and time-consuming procedures with similar treatment slated for different classes of products. In practice, a form of contract farming described as preharvest contracting is common for fruits where the fruit trees are leased out in advance for an anticipated price. This method is deemed to mitigate PHL. By this method, the farmers seek to reduce their share of the risk and difficulty associated with marketing of these perishable products. Alternatively, farmers also resort to selling products directly in the local market or on roadside mobile stalls, thus bypassing the regulated marketing channel altogether.

5.5.4 *Limitations and Evaluations of Regulated Markets*

Despite the strengths and laudable intentions, the RMs suffered from several limitations. Being under government control, moral hazard and rent-seeking behaviour are inevitable threats. It is reported that a number of regulated markets could not function efficiently owing to collusion among traders and market officials when bidding takes place ensuring that prices are lower than they should ideally be. Moreover, traders and commission agents are known to form organized associations while farmers hardly act in collectives leading to unequal power distribution. The MCs for all practical purposes were dominated by trader's interest, and any breach of rules by any trader was seldom met by prompt MC action. Licensing of the traders and agents is meant to ensure compliance, but in reality it creates entry barriers for new aspirants. As a result, monopsonistic practices developed, defeating the purpose of the markets.

There are wide variations across the states in the compositions, constitutions and functioning of the SMBs, and in some states, these Boards had merely an advisory role. Worse, the responsibilities of the SMBs and the state directorate of marketing are not always clear. The states also varied widely in the number of RMs and the densities of the markets. Six large states accounted for over 50 % of the total number of RMs, and the area served by an average RM ranged from 115 sq km in

Punjab to 11,215 sq km in Meghalaya (Acharya and Agrawal 2004). Where the average area served by a market is high, farmers have to travel a long distance with their produce.

Poor infrastructure is a common refrain. Internal roads in the RMs were mostly in poor condition. Auctions, mostly conducted in open platforms, increased product damage. Cold storage and grading facilities existed only in a few RMs. Market yards being congested, farmers were subjected to long waits in inconvenient conditions. Worse, despite the limitations, the farmer was legally compelled to bring the produce to the RM since APMC Acts do not allow the traders to buy from farmers outside the specified market yard or sub-yard. Farmers also were prevented from selling directly in bulk. With traders invariably occupying a space between the producer and the consumer, the cost of marketing increases while processors, exporters and retailers were denied the right to access actual producers, to procure the products at convenient locations and ensure good quality products in keeping with demand.

Though most wholesale markets and some of the rural primary markets are brought under regulation, many of them are even today out of APMC Act purview. Some existing RMs are actually non-functional except for collecting fees at check posts while no transaction takes place in the premises. Many RMs have no elected market committee, nor a market yard. Sales often take place without any supervision while the staff remains overly occupied with the collection of market fees and construction work. The market fee collected by the APMC was barely used for development of modern facilities. Although expected to be democratic, in several states, elections of APMCs are not held regularly. Rather than being managed by farmer-dominated bodies as they were meant to be, market operations came to be administered by unconnected bureaucrats.

Evaluative studies on marketing have repeatedly revealed the economic dominance of the trader, poor infrastructure and facilities and a mere trickling down of economic benefits to the producers. Price spread and the share of the producer in the consumer rupee varied widely among regulated markets, but the share was found to decline as the channel lengthened. In an extreme instance, a 1972 study on oranges sold in a Calcutta market (Mahalanobis 1972) found that only 2 % of the consumer price reached the producer. On the contrary, in a direct producer to consumer channel, the same share has been as high as 95 % in Madurai (Elenchezian and Kombairaju 2003) and 80 % in Kashmir (Wani and Mathur 1999). *Arathdars* and commission agents are found to be influential in deciding producer prices, as in West Bengal for potato (Saha and Mukhopadhyay 1997), in Karnataka for horticultural products (Suresh and Devaraja 1999). Price volatility, some of which is avoidable, also affects farmers' incentive. A study on marketing of the low water-requiring fruit pomegranate in Solapur district of Maharashtra showed large fluctuations in both arrivals and prices. The two were also found to be negatively correlated (Pawar and Misal 2005).

The price spread is largely attributable to trader margins (Mahalanobis 1972), high cost of transport and packaging as in Gujarat (Khunt et al. 2003), transportation and handling charges as in West Bengal (Mahalanobis 1972) and Uttaranchal (Kumar and Arora 2003) and postharvest losses (Murthy et al. 2009).

In Uttar Pradesh (Kumar and Arora 1999), inadequacy of cold storage facilities, the highly perishable nature of products and low demand for vegetables prevailing when the supply is disposed of are major problems.

A study on tomato grown in Kolar district in Karnataka with open and bore well irrigation (Lokesh et al. 2005) shows that increasing productivity in the face of stagnant acreage necessitates assured raw material supply, irrigation and other equipment to maintain standards especially if processing units are to be set up in the region. Marginal farmers growing onion used mostly *kuchha* floor storage and could not afford higher quality bamboo mats which were costliest among alternative methods available in Jaunpur district of Uttar Pradesh (Kumar and Arora 1999). For marginal farmers, the highest losses were also incurred in storage on *kuchha* floor (19.7 %). Uneconomic marketable surpluses, poor holding capacity and urgency for cash force small-scale producers to select the option of depending on traditional traders (Sundaravaradarajan and Johan Mohan 2002). Hassle-free easy borrowing is often seen as an advantage of dealing with traders who also lend money.

An active and parallel presence of cooperative organizations and other institutional mechanisms sometimes proved useful to sellers in traditional markets. GROFED's purchases from member farmers in Deera market yard in Gujarat (Shah 1977) to reduce their dependence on traders, the participation of Co-operative Bank and BENFED in potato trading in West Bengal to counteract price influence coming from professional speculators (Saha and Mukhopadhyay 1997) and multipurpose cooperative societies' (LMPs)⁴ services to producers in tribal belts in Odisha are only a few of many such instances documented in the evaluation-based literature. In Tamil Nadu, cooperatives helped to weaken monopolies, reduce malpractices of middlemen and improve market efficiency (Gopalan and Gopalan 1991). In Maharashtra, 57 % of banana marketed was reported to be through local groups and 17 % through cooperatives, but as much as 26 % of the share still pass through traders (Mali et al. 2001).

In a literature review on horticultural crops in Himachal Pradesh, estimates of producer share of the consumer rupee paid for off-season vegetables varied, estimated at 56–63 % (Raghubanshi and Kansal 1978), less than 50 % (Thakur et al. 1994), 53 % and 20–33 % (Lal and Sharma 2004) between different studies, the differences being attributable to locations and the organization of markets. The producer share for tomato in Punjab and apple in Himachal showed varying trajectories over the years (Chahal et al. 1997; Singh et al. 2004), but most studies implied that benefits are reaped mostly by affluent producers.

Several different channels can provide a route for products to move from farm to plate directly or through a multitude of intermediaries which also include public institutions. Although agricultural marketing in India is handled by both private and

⁴LMPs were formed by the recommendation of Bawa committee in 1976. They were successful due to high education level of members while other cooperative societies in Odisha failed, due to government indifference and lack of professional training of staff.

Box 5.1 Need for Reforms for Apple Market

The world is not unaware of India's potential as a major apple market, with consumption growing on the back of population growth and affluence. This is readily borne out by India's imports. There is an estimated 4.7 million tonnes gap in production, and with production having been nearly constant in many years, the country makes huge imports mainly from the USA (Washington state), and the question that arises is: how can this growing market be converted into an opportunity for the Indian producers (Mittal.2011)? The imports have however been a great learning experience that (i) the Indian customer is ready to pay for good and consistent quality, (ii) that packaging is extremely important for transportation with minimal wastage, (iii) that apple can be priced as any branded commodity unlike the daily traded commodities of the mandi and, finally, (iv) the customer will buy good quality apples throughout the year and for that modern controlled atmosphere storage is necessary.

government agencies, major part of the agriculture produce is handled by private traders. According to estimates, two million wholesalers, five million private retailers, and over four million fair price shops mostly in the private sector dominated the market (Acharya 1997), and even in the case of cereals where the government intervention is intense, the share of private trade exceeds 70 % with 100 million tonnes of foodgrains involved in 2001.

A large volume of trade takes place completely in the private domain with or without government supervision, sometimes even outside the regulated markets notwithstanding all the legislation. Because private marketing system is state regulated, a protocol developed for regulated markets and for market intelligence only in the official domain (Tyagi et al. 2005) but due to the weaknesses of the regulated system, a considerable amount of transactions take place outside its orbit and also remain undocumented (Box 5.1).

5.6 The Case for Reforms

The volume of trade in horticultural crops has expanded manifold over time, with the demand for processing reaching new heights. With the launch of the reforms in the overall economy, the role of the government has formally diminished. A *second green revolution* being discussed today incorporates diversification, processing, food security as well as agro-climatic and regional dimensions of agriculture.

Provision of infrastructure is recognized to be important for an efficient market to function. Road connectivity is given high weightage in the country's development manifested in various public programmes. It is appreciated that for efficient

price discovery, modern methods of communication like Internet and mobile phones are very important. It is recognized that electricity supply in rural areas has to be strengthened as irrigation and even cold storages cannot work without regular power supply. Diversification, processing and price monitoring along with good infrastructure now receive more space in agricultural policy than before. A reliable statistical system is essential for achieving all these ends and for monitoring the progress. Cropping pattern and technology need to take account of regional strengths and weaknesses.

Processors in India were largely confined to unorganized and tiny firms including hullers and shellers, rice mills, flour mills and oilseed processing plants (*ghanis*). In particular, the need for investment for processing of fruits and vegetables has been felt since 1991. While the overwhelming emphasis (verging on obsession) on the part of government policy and academics remained confined to foodgrains, farmers do produce a large variety of crops. Marketing channels other than those specifically suited for foodgrains were becoming urgent needs. As food habits and consumer tastes are changing radically and culturally (Baviskar 2012) in the country, leading to shifts in demand pattern, it is necessary that production too responds to the revised signals and farmers gain from emerging market opportunities. The need for an established market for perishable products like fruits and vegetables could no longer be ignored.

Removal of structural supply barriers can improve elasticity of supply to incentives. In the case of fruits and vegetables, it has been realized that the market could be improved considerably by allowing the development of possible channels that enable quick and smooth transit from the producer to the consumer. The rigidities of the traditional system are highly inappropriate for the growth of the horticultural sector defying its market prospects. The presence of too many intermediaries with resource power too poor to develop infrastructure and technology widen the price spread between the producer and consumer. Considerable wastage of these perishable products is reported due to the longer distances travelled and lack of refrigeration and appropriate storage facilities.

Moreover, there is little motivation, technical knowhow and resources available with the farmers to grow products of quality that is comparable to world standards. Further, very little of these products are processed although it is known that much of India's agro-produce is amenable to further value addition. Estimates suggest that only 4 % of the fruits produced in India are processed.⁵ The solution was to allow the optimum market channels to evolve for the benefit of the farmer and the consumer. The inter-ministerial group (IMG) and industry associations (Chambers of Commerce) also argued that the measure will help to tame food inflation in a significant manner (Gulati and Ganguli 2011) by tying the producer and consumer in closer links.

⁵ According to another estimate, 2.25 % of fruits, in India are processed (GOI 2007). However, such estimates are not based on any rigorous methodology.

The following are the major compulsions felt to justify reforms by amending the APMC Act:

1. Uneven development of regulated markets in the country, their faulty supervision leading to vested interests and the unwieldy administration cost of developing the market by this path
2. Lack of adequate infrastructure leading to harassment, hardship and product wastage
3. Entry barriers created by licensing in the markets and lack of competitive environment
4. Large number of intermediaries and outdated technologies
5. Poor quality and variety of products incompatible with the demands of the urban consumers and export markets

5.7 Reforms Through Legislation in India

In the course of time following the structural changes of the early 1990s and India's entry into the World Trade Organization, the Government of India felt it was necessary to undertake market reforms formally through legislation. An Expert Committee on 'Strengthening and Developing Agricultural Marketing' under the chairmanship of Shri Shankarlal Guru was appointed by the government in December 2000. The committee⁶ reviewed the entire system of marketing of agricultural commodities and submitted its recommendations to the government in June 2001. The requirement of a vibrant and dynamic marketing structure and a system to meet the challenges emerging out of globalization in the post WTO period was echoed in the report.

An Inter-Ministerial Committee⁷ was set up to examine the report and the legislative changes required for the implementation of this report. The inter-ministerial task force interacting with stakeholders recommended the formulation of a Model APMC Act which would improve the efficiency of the marketing system and encourage private sector investment in agricultural marketing. The Model APMC Act was finalized in 2003 and circulated to states by the Government of India. All state governments were required to amend the state Agricultural Production Marketing Regulation Act and make changes which should be in tune with the Model Act.

The Model Act was meant to reform the market by allowing more competition and encouraging innovative marketing methods to evolve. The strategy also included central assistance for developing infrastructure, a system of warehouse receipts that supported grain storage with improved liquidity for farmers and the amendment of the Forward Market Act 1952 to allow futures trading in cereals.

⁶ Guru Committee.

⁷ Chairman: Shri R.C.A. Jain, Additional Secretary, Ministry of Agriculture.

After the model plan of legislation was circulated, most states embarked on amending (APMC) regulations to reform their markets. There was a parallel pressure to relax the ECA (see Sect. 5.4) which imposes restrictions of movements and storage of commodities. The MIS was to be made more flexible.

5.8 Hesitations and the Status of Market Reforms

The reforms in agricultural marketing raise many political questions. The extents of benefit they are expected to deliver are gravely doubted. That the impact can be adverse on producers and innumerable vendors and intermediaries in rural and urban India is a concern of critics who sensed a bias towards a small class of affluent urban consumers inherent in the policy. They argue that beneficiaries would be only the so-called growing middle class constituting the target group who will be able to access the ‘high-valued’ processed products at relatively cheaper prices.

The non-processed, fresh and traditional products that the common consumer in India is accustomed to (Shah 1977) and that are known for their nutrient value will be marginalized. A vast majority of the people even in urban areas is poor and will be hurt by high food prices because of the developments. Other cautioned that there are umpteen number of examples even in India where diversification in the name of better earnings for the poor farmers has led to irreversible damage to the environment (such as the intensive shrimp cultivation). Based on carefully scrutinized evidence from a number of developing economies, including India, ‘the inflation containment logic for FDI in food retail and entry of modern supermarket chains does not stand up to the scrutiny given empirical evidence across the globe’ (Singh 2012).

After the initial ‘go slow’ policy adopted by the Government of India, the debate over food retail chains resurfaced in the light of the utterances on legislation coming from the high-powered policy groups in 2012. The proposal for raising the limit for foreign direct investment (FDI) in multi-brand retail⁸ is supported by arguments that it will help to bring more investment in ‘back-end’ infrastructure in retailing, but there are apprehensions that the foreign companies would not be interested in these investments and in any case what they achieve would depend on how states go about amending the APMC Act. That part of the sourcing of materials could very well end up being in countries outside India is another suspicion.

In reality, the state of marketing reforms appears to be highly checkered in character and progress. Not all marketing channels are equally acceptable to all the state governments. Agriculture being a state subject in India and both agronomic

⁸ In 2012, FDI in retail was a major issue of political confrontation among the opposing parties in the central government and faced strong resistances from opposing state governments. In November, the issue was put to vote in the Parliament, and despite the contentions, the central government found majority support in favour of FDI in retail. It is now up to the state governments to accept the motion through legislation.

and socio-economic realities being varied across the country, it is the political sense of the state that determines the pace of reforms. The ruling elected governments have to take the grave political decision of amending the APMC Act. The states while operationalizing reforms by framing and notifying the APMC rules are cautioned by possible implications of the changes for the poorer farmers, the possibility of creating powerful external forces in rural markets and simply by apprehensions about unemployment among those serving as traders. Contract farming has in particular been viewed with special mistrust in many states and perhaps also as a reminder of older times when the rich and the powerful rural agents exploited the poor illiterate farmers through unfair contracts that tied them into obligations, although in the current models, such contracts need to be formal, regulated, transparent and judicially redressable. The fear of the unknown is disturbing. Yet there are other states that find the same model particularly appealing.

States like Madhya Pradesh, Haryana, Punjab and Mizoram have only partially framed the rules, and some states have imposed restrictions which are not provided in Model APMC Rules such as prescribing minimum investment requirement or minimum distance from the nearest APMC criteria for private markets. Some states have not amended the Act at all. For example, West Bengal, so far ruled by the Left Front, had considered some provisions 'anti-poor and anti-farmer' and viewed contract farming unfavourably. The state did show some interest in amending the Act, introduced administrative action to initiate reforms but is yet to amend the APMC Act. Even with electoral changes, little has changed. The new Trinamool government is also bitterly opposing some of the suggested reforms. Recently, there are preliminary signs of acceptance towards direct marketing as a channel. Retail outlets are also being opened by private companies in cities.

Bihar, repealing the old Act in 2006 in a step towards reforms, represented another extreme case because no new law became enacted till date. *Mandis* however still operate where private operators have limited transactions with farmers encumbered by poor infrastructure. Although Bihar is known for some important horticultural products like litchi and mangoes, the state, burdened by land fragmentation, poor agricultural development and backward technology, is battling with an ill-defined marketing system.

Only partial reforms to the Act have been implemented in the two leading agricultural states Punjab and Haryana. Direct purchase of perishable crops like fruits and vegetables by retail chains and other companies is allowed, but reforms in foodgrain marketing remain a contentious political issue, resisted by a strong lobby of commission agents and *artyas*, whose livelihoods are at threat. For the 'farmer-friendly' state Punjab, allowing farmers access to higher prices in private markets is suggested to be a way to higher farm incomes rather than subsidized inputs and free power supply. Punjab made some progress in 2008 when it reviewed the Act, but the political pressures were created by the possible elimination of middlemen. Punjab has however allowed private players direct access to farmers by amending the Act, but since these players are required to apply to the *Mandi* Board for setting

up direct purchase points, markets have remained confined to the domain of the Punjab Mandi Board.

Haryana's progress is even less impressive although some degree of advancement towards contract farming, direct selling and commodity markets is already achieved. Being the major foodgrain producers in the country, the vacillations of Punjab and Haryana have been a cause of concern for aspiring private entrants.⁹ The amendments are said to be subtly linked to compensatory central grants, but it is also admitted that ecological concern is a motive force for diversification from cereals in the two states where contract farming is promoted for the purpose.

Andhra Pradesh, Himachal Pradesh, Maharashtra and Jharkhand have successfully amended the Act and allowed contract farming, direct marketing and private and cooperative sector entry into marketing. Assam has amended the Act, but even with the regulated market system, agricultural marketing in the state was earlier more unorganized than most other states, and the new Act could hold a new promise especially for horticultural crops like orange. Karnataka is one of the leading states to have amended the Act. In Tamil Nadu, the existing Act already provides for the reforms. Thus, both Bihar and Tamil Nadu did not table the Bill purportedly because no such Bill was required.

5.8.1 Reforms in Traditional Marketing

As things stand, the regular state-run channels, far from being eliminated or phased out, were also proposed to be changed in tune with the rising contingencies and the pressure of competition. There is an attempt to make the MIS for marketing fruits and vegetables more flexible. E-trading based on the revolution in information technology, electronic computers and Internet has become useful for trading in financial instruments and also various other commodities. While the method is yet not as effective in the case of food items, progress on this front is already visible.

In food marketing, states like Delhi, Gujarat, Andhra Pradesh, Uttar Pradesh, Madhya Pradesh and Tamil Nadu have accepted e-trading in agricultural produce. Azadpur market in Delhi and the apple markets of Himachal Pradesh are placed electronically 'online'. Private initiatives like those of ITC (ITC e-Choupal) and derivative exchanges like MCX and NCDEX have made significant contribution to this progress. Besides, the electronic media has made information crucial for an efficient marketing system more easily accessible.

Government's AGMARKNET is a market intelligence disseminating initiative that holds the promise of transforming the regular marketing system into one that keeps up with time, delivers a fair market mechanism to the farmers and that is capable of competing with profit oriented private channels (Box 5.2) (Table 5.1).

⁹The Bharti Walmart tie-up was seen to be one firm apparently affected seriously by the delay.

Box 5.2 Competition Between Corporate Sector Marketing Giants and the Mandis

(Based on article Battlefield Harda, Forbes India, June 19, 2009)

Ram Bharos Bishnoi is a farmer in Harda. He started bringing his produce to the government *mandi* 33 years ago, but inefficiencies like faulty weighing measures and lack of storage for grains there encouraged him to shift to ITC Choupal Saagar 6 years ago.

Harda is a small town in Madhya Pradesh that has seen a small battle brew between tobacco giant ITC and the government. Earlier, farmers could only sell at the government *mandis*, and it could take up to 2 days to just get in the premises and hours to weigh the produce. The Madhya Pradesh government changed regulations and allowed ITC to procure farm produce in 2004. This cut out middlemen and gave better service and prices to farmers. Little wonder that big farmers like Bishnoi migrated to ITC. ITC cut into the government's share of the grain procurement mechanism from farmers with Choupal Saagar, its rural procurement hub and supermarket 6 years ago.

But the government is now hitting back as it embarks on a modernization process to woo back farmers it lost to the company. The *mandi* in Harda became an *adarsh mandi*, a standard for other *mandis* to emulate, a first step to transform more than 237 *mandis* in the mould of the Choupal Saagars. There are electronic weighing scales that cut down the time taken to measure grain. Newly constructed sheds protect grain-filled trolleys from the weather and pests. The modern technology centre records all transactions, and smart cards ensure that payments are smooth. Now, Bishnoi is back at the government *mandi*, with 26 quintals of soybean. This *mandi* modernization move has to an extent stemmed the exodus of wealthy farmers to the Choupal Saagars. The share of grain being sold from the area to ITC and other private players, including Cargill Inc. and Ruchi Soya Industries, dropped from 7.51 % in 2007 to 5.5 % for the year ended March 2008 as per *mandi* records.

5.8.2 Agricultural Marketing Information and the AGMARKNET

Opening of trade, both domestic and international, requires that agricultural development has to be market driven and responsive to the changed world trade environment. In this context, establishing a sound agricultural marketing information system in the country has been felt strongly. Market information is needed by farmers in planning production and by other marketing participants like traders, processors and exporters too for preparing business plans and logistics. It is essential that these agriculture marketing policies should also be based on reliable

Table 5.1 Status of reforms in states of India

Status	Reforms	States
Reforms enacted	Contract farming, direct marketing, private sector entry, cooperative sector entry	Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh, Goa, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Rajasthan, Sikkim, Tripura
Partial reforms	Direct marketing	NCT (Delhi)
Partial reforms	Contract farming	Haryana, Punjab, Chandigarh
Partial reforms	Private markets	Punjab, Chandigarh
No APMC Act existing		Bihar ^a , Kerala, Manipur
Existing APMC Act already provides for reforms		Tamil Nadu
Not enacted but administrative actions for reforms initiated		Mizoram, Meghalaya, Haryana, Jammu and Kashmir, Uttarakhand, West Bengal, Uttar Pradesh, NCT (Delhi)

Source: Author's compilation

^aAct repealed in 2006

and comprehensive database. This is a crucial way in which the state can provide support to a market that is opening up.

Almost all states and union territories have their own system of providing marketing information to the user, based on conventional methods but communications usually get delayed and lose their relevance. Information and Communications Technology (ICT) can help in reducing the gap between generation and dissemination of the information. The Directorate of Marketing and Inspection (DMI), Ministry of Agriculture, has formulated a central sector scheme – Agricultural Research and Marketing Information Network – for linking all (approximately 7,000) regulated markets spread all over the country and other relevant agencies by providing computing and Internet facility through government facility NICNET. The project AGMARKNET is entrusted to National Informatics Centre, Department of Information Technology, Government of India, for implementation on turnkey basis (AGMARKNET, <http://agmarknet.nic.in/>).

The AGMARKNET aims to establish a nationwide market information network for speedy collection and dissemination of data to enable its efficient and timely utilization. It covers all information from regulated markets. Online market information service will connect distant market and promote efficient marketing by developing a portal to facilitate dissemination of commodity-wise daily prices and product arrival information received from various markets. Earlier daily prices were compiled manually and written on blackboard for farmers view. There was hardly any way to store the data or to enlarge its outreach. It was difficult to generate trend reports using past data, to trace the directions taken by agriculture and assess its performance.

Development and application of software today helps to create database at local market level. Computers are introduced to most markets along with dedicated and skilled staff for computer operations, regular monitoring of reported data for accuracy and application of user-friendly software with necessary local language interface.

5.9 Conclusion

Marketing policy in India was initiated in colonial times following the recommendations of the Royal Commission on Agriculture. The APMC Acts legislated by the state governments in the Indian federation created the regulated markets that aimed to ensure fair price to the farmers through supervised auctions. Of late, many evaluative studies drew attention to the inadequacies of the system in general and in particular its inappropriateness for fruits and vegetables. These crops require a marketing system different from that of grains. However, marketing fruits and vegetables call for greater resources and efficiency to deliver remunerative prices to the producer and minimize losses due to spoilage. In the current economic order, there is a need for flexibility in marketing, improvement of infrastructure and integration of market across the country. Path-breaking measures are initiated in agricultural marketing to reform the system, but the progress is highly sensitive to political complexities.

Chapter 6

Contemporary Reforms and the Transitions in Sample States

Sample states can be distinguished by their states of reforms. The first set of states in Table 6.1 has amended APMC Acts in place. Their policy environment allows us to have a broader and more varied glimpse of the marketing regimes that can operate in agricultural products. What is common among the other states is that they have not yet fully amended the Act, but interestingly, this commonality does not make them completely comparable. Some of them have partially amended the Act or changed the marketing environment merely through ‘notification’ taking advantage of the flexibility inherent in the existing APMC Act. Even among the states that have not reformed through the APMC route, the situation is not static and there are signs of progress.

Bihar at present has no APMC Act in place. The market is described as ‘open’ and is essentially unregulated. In West Bengal on the contrary, the erstwhile Act operates and marketing is conducted strictly under the traditional set of rules and restrictions prevalent in the state. Similarly, Uttar Pradesh too is guided by the old Act, but unlike West Bengal, the state, after a brief overture with legislation, had reverted back, but in practice new and quite remarkable channels are emerging in the state. Haryana and Madhya Pradesh have only partially reformed marketing, but the changes that these reforms yielded are substantial. The transitions in the sample states with reforms in agricultural marketing are discussed in the following sections. Further details on the socio-economic conditions of the regions studied, the crops in focus and the market institutions dealt with can be found in [Appendix 2](#).

6.1 Transitions in Andhra Pradesh

6.1.1 *Regulated Marketing*

Though regulations moved in tandem with the countrywide policy since the early nineteenth century, the small farmers continued to depend on traders

Table 6.1 Status of APMC amendment in sample states

Status	States				
Amended	Andhra Pradesh	Maharashtra	Himachal Pradesh	Jharkhand	Assam
	Amended	Amended	Amended	Amended	Amended
Not amended	Bihar	Uttar Pradesh		West Bengal	
	Act repealed	Act amended but negated soon		Initiated but no firm decision taken	
Partially amended	Madhya Pradesh	Haryana		Punjab	
	Partial	Partial with notification		Partial with notification	

and commission agents for getting credit and for selling their products in an exploitative and interlocked market. After independence, Andhra Pradesh government enacted the legislation named Andhra Pradesh (Agricultural Produce and Livestock) Market Act, 1966, that brought together the laws that were in force from time to time in erstwhile Andhra and Telangana areas. The Act empowered regulated markets for commodities to be administered by elected marketing committees consisting of representatives of legal bodies, traders, commission agents and the farmers with the intention of eliminating exploitative practices.

A marketing committee (MC) was established in every notified area. Due representation was given to farmers, especially the small farmers, operating with crops and livestock. The so-called backward caste farmers, women farmers and licensed traders and members nominated by the government were included in the MC. According to Sect. 7 of the Act, 'no person in the area could set up any place for sale, storage, weighment, curing, processing etc.' of any 'notified' agricultural produce, making the regulated market (RM) a compulsory place for disposing agricultural products. The fees raised by the MC would make up a fund that was supposed to be allocated for the construction and development of market yards, creation of facilities for buyers and sellers and other ancillary activities. The MC also would organize training classes for the farmers. Both secret tender and open auctions were methods of price determination.

6.1.2 Problems of the Regular System

The nomination of MC members by the government on political considerations rather than growers' interest was a major disquiet reported by respondents of our surveys. Moreover, it is strongly felt that the members collude with the traders. The lack of access to institutional credit further intensifies the dependence of a larger majority of small farmers on commission agents who are also lenders.

6.1.3 Amendment

The central government in 2003 advised that the state government amends the existing APMC Act 1966. A Model Act was circulated that allows for variations in marketing channels. However, marketing (agricultural) has been displaying innovative features in the state even before agricultural liberalization started to take shape in India.

Cooperative marketing societies not only for credit but also for marketing were established before 1984. The NAFED, established in 1993, was active in the state of Andhra Pradesh promoting marketing of oilseeds and coarse cereals. A cooperative structure comprising of 6,000 primary marketing societies of which 3,500 are special commodity marketing societies existed at the state level. In 1998 the Government of India permitted resumption of futures trading that was suspended since 1966. The National Commodity and Derivatives Exchange (NCDEX) launched several projects in some states for enlightening the farmers with market information, and Andhra Pradesh was one such state. Even in the Market Rules issued in October 1969, there was a proposal to start private marketing and contract farming.

Nevertheless, after carefully studying the issue, the government came to the conclusion that there is a need to amend certain sections of the existing Andhra Pradesh APMC Act 1966 to make it compatible with the order of the day. Under the new Act, any person who desires to establish a private market should make an application for licence. New market reforms and relaxed regulations enabled the greater involvement of private sector in agricultural marketing and thereby promote contract farming (CF) and cooperative farming (COPF). Private sector involvement in both wholesale trading and distribution was allowed along with the development of specialized markets.

6.1.4 New Channels Emerging

The government of the state recognizes the importance of promoting market-oriented horticulture through CF. The Department of Horticulture provides incentive to the subsector and gives support to the contract growers on priority basis. For protecting the interest of both the farmers and the buyers in contracts, the government arranges for registering the sponsoring company, checking for unreliable and spurious contracts, regulating, grading and marketing using a manual of standards. Coca-Cola's contract with five mango-growing companies, registered as a society in Chittoor district in 2006 for the supply of mango pulp, is one of the most noteworthy success stories (Box 6.1) that created a popular drink called 'Maaza'.

Direct marketing (DM) is an especially successful emerging chain in Andhra Pradesh in which margins are altogether eliminated and the consumers get access to

Box 6.1 Select Successful Projects in Andhra Pradesh

M/s. Cadburys India in East and West Godavari districts for cocoa

M/s. SICAL, M/s. Godrej, M/s. Palmtech and Other for Oil palm

M/s. BHC, Kuppam region of Chittoor district for vegetables

M/s. Global Green in Mahaboobnagar and

M/s. Capricorn Food Ltd., in Chittoor for Gherkins

M/s. A.V. Thomas of Chennai for Marigold in Anantapur

M/s. Dabur for Indian Gooseberry

fresh products straight from the farms. Framer's markets were established in the year 1999 to facilitate direct marketing of products. These markets are located on government lands and are easily accessible by the existing transport facility. Transport and storage facilities with 'zero-energy' chambers for unsold produce add to sellers' convenience. Vegetables arrive at emerging outlets called Rythu Bazaar (RB) throughout the year from local producers and also from remote areas. The farmers are allowed to sell only vegetables grown by them, although identified self-help groups (SHGs) are allowed to sell vegetables which are not grown by the registered farmers.

6.2 Marketing Reforms in Madhya Pradesh

6.2.1 Traditional Regulations on Marketing

Until 1950 there was practically no regulated market in this state. The government of Madhya Bharat passed the Madhya Bharat Agricultural Produce Market Act in 1952 modelled on the lines of the Bombay Act. When the state was reorganized in 1956, more than one Act was operative simultaneously creating confusion. Madhya Pradesh Agricultural Markets Act 1960 resolved this multiplicity. Further, in accordance with the recommendation of the National Commission on Agriculture, the Madhya Pradesh *Krishi Upaj Mandi Adhiniyam* 1972 (APMC Act) was passed. The regulatory framework for agricultural marketing since then was built up by developing primary or 'regulated' markets (RM) and creating legal instruments to guide the regulation. In 1973, a three-tier Madhya Pradesh State Agricultural Marketing Board (MPSAMB) or Mandi Board was created.

The regulation provided for the construction of well-laid-out market yard was an essential requirement of a market. Presently, the state has 517 regulated markets of

which 244 are main wholesale markets or *Krishi Upaj Mandi* (KUM) with elaborate infrastructure. Besides, lower-level sub-*mandies* and *Haat Bazaar* in rural areas were also created. The *Mandi* Board has its office in Bhopal. The state has the distinction of eliminating certain middlemen while adopting the Citizen Charter to ensure right to information and installing democratically elected body in MCs. The MPSAMB manages the administration and overall development of market. Purchase from the producers by traders from outside the market yard was however prohibited. Only open auction or a tender-bid system was the allowed means of price determination.

Timely payment was ensured by imposing a penalty on the delay or even by possible cancellation of licence. The MCs were entrusted with the task of arranging correct weighing, storage of unsold products and construction of rest houses for farmers. Elections are held regularly with the active participation of farmer and traders. Along with private traders, cooperative agencies like the State Co-operative Federation (MARKFED), the Madhya Pradesh State Agro Industries Development Corporation, and the Food Corporation of India are some of the other agents who operated in the market. Thus, the regulated marketing system performed fairly well in the state.

6.2.2 Amendments

With the recommendation of the Government of India in 2003, the Madhya Pradesh KUM Adhiniyam 1972 began to provide for contract farming (CF). Purchase centre outside the market yard, single licence for entire state in which ITC soya Choupal is a special success story, leasing out of surplus market yard to processors, e-marketing, and consumer's market (CM), especially for fruits and vegetables, were other remarkable innovations. While an amendment made in 2003 allows for direct sales in farmer's market and regulated contract farming, several restrictions remain on market committees and traders to control the cost of marketing and ensure the autonomy of the farmers. However, several amendments are also pending till now so that the reforms are only partial.

Yet the achievements of partial reforms in Madhya Pradesh are not negligible. In particular, ITC's e-Choupal is a much renowned innovation in marketing. Besides, the amendment also addresses the determination and certification of the standard of the agricultural produce. Packaging, soil testing laboratories, soil collection centres in *mandies* tied with *kisan mitra*, farmer's road fund, funding research and infra-structural development including the e-marketing scheme EKVI are attributes of modern marketing in the state. The amendment also allows companies like ITC, Kargil and Unilever to buy grains outside the mandies.

With the recent controversy over the FDI in retail in 2011, the ruling government showed hesitation but cleared the bill, namely, Madhya Pradesh *Krishi Upaj Mandi Vidheyak* amending again the Madhya Pradesh *Mandi* Act 1972. This bill is likely

to pave the way for foreign investment in marketing in a big way. The manufacturer, processor and farmers will also be exempted from *mandi* fee.

ITC's e-Choupal initiative, selected in this study as the emerging channel, has become famous for its social and commercial functions and is a case study for many business schools not excluding Harvard University. The e-Choupal provides an opportunity to Indian farmers to access market information from around the world through the Internet, act as collective sellers of products and enjoy more market power. It also enables other companies dealing in separate products to reach the rural sellers and buyers through this forum. The long experience in Agri-Business that ITC acquired by dint of its traditional link to tobacco is exploited for profit and agricultural development when the tobacco business is being eased out on health grounds.

6.2.3 Conflicts, Resolution and Changes in State System

Resentment is observed among the regular market agents and traders who view the rise of the private enterprise as an encroachment on their own turf. Interestingly however, the state-regulated market too is found catching up with competition in the region. Computerized weighing machines and ATM-based banking facilities are now available in the regulated markets where the same infrastructure has improved.

6.3 Marketing Reforms in Maharashtra

6.3.1 Regulated Marketing

The Maharashtra Agricultural Produce Marketing (Regulation) Act, 1963, enacted by state of Maharashtra sought to create an informed, free and competitive ambience in which the producers and sellers would be able to strike the best possible deals. It mandates for competitive bidding of every lot sold in the presence of several buyers and sellers. Under the APMC Act, all notified agricultural commodities (about 286 in number), grown within a notified area under a regulated market or *mandi*, if sold wholesale, had to be sold through the designated *mandi* yard. By eliminating superfluous charges and minimizing various costs of handling products, higher net returns are ensured to farmers who are also protected from exploitation by middlemen. The regulated markets were suitably designed to ensure fair market charges and fees, correct weightment and settlement of disputes. Grading of agricultural products was also introduced. The main market functionaries in RMs were the commission agents, traders, brokers, processors, helpers and *hamals*, all of whom had to hold a licence from APMC to operate in the *mandi*.

The Agricultural Produce Market Committees (APMCs) are constituted for each regulated market and comprise of market functionaries including farmers and traders who are responsible for day-to-day management of market. Among others, the members of the APMC are elected by the members of agricultural credit societies, by other cooperative societies and by village *panchayats* within the area. The APMCs are in turn supervised by the Maharashtra State Agricultural Marketing Board (MSAMB). The APMC regulated the admission of agents to the market and could issue, renew, suspend and cancel licences.

The APMC generated income by levying licence fees, rentals and market fees. A part of the income is passed on to MSAMB to undertake infrastructure development such as schemes for construction of internal roads, asphaltting of existing roads, providing drinking water facilities and building of structures such as auction platforms, auction halls, warehouses, cold storage and export facility centres. The marketing board also provided training and extension to producers.

In Maharashtra there are 295 main market yards and 609 sub-market yards. Achievements included construction of roads and railroads to shorten distances and make villages, markets and towns easily accessible for one another. The establishment of a State Warehousing Corporation to increase the holding capacity of cultivators so as to avoid sale when there are gluts, the improvement of market intelligence where market committees arrange for the dissemination of information on current prices and the provision of crop loans as well as long-term loans by institutional credit agencies to farmers for agricultural operations are other associated developments. Market regulation supplements the price support operations of the government to ensure remunerative postharvest prices.

6.3.2 *Limitations*

The Act compelled farmers to sell in the market yards leading to a rise in transaction costs and restricting their options. The system was less suitable for horticultural products that are becoming important in many parts of the state. In view of the new opportunities associated, a need for a new system of marketing was felt to enlarge and broaden the system.

6.3.3 *Amendment of Maharashtra Agricultural Produce Marketing (Regulation) Act, 1963*

Maharashtra Agricultural Produce Marketing (Regulation) Act, 1963, framed in 1963 was amended in June 2006, and rules were framed in June 2007. While the APMC Act 1963 focused on regulation of marketing, the amended Act emphasized the concept of development. The title of the amended Act is 'Maharashtra

Agricultural Produce Marketing (Development and Regulation) (Amendment) Act, 2006'. Several added features¹ of the Act are paving the way to new regime.

The amendment allows more flexibility and removes the compulsion of farmers to bring produce to the RM yard. Large numbers of licences were issued for direct marketing (72 licences), private markets (7 approvals), farmer-consumer markets (33 locations), contract farming (1 lakh hectares), single licence system (9 private players) and special commodity markets (20 festivals organized). Public-private partnerships are encouraged. The state has also proposed the setting up of terminal markets for fruits and vegetables in the private or joint sector in Mumbai, Nashik and Nagpur for perishable fruits and vegetables. Modern markets in Hingoli and Aurangabad districts are also under preparation through public-private partnership.

Infrastructure in the APMC markets is also undergoing major changes. Computerization of 291 APMCs and 54 sub-markets is under way. Creation of rural godowns and onion storage structures and televised dissemination of arrival and price information of agricultural commodities are initiatives in this regard. Setting up of agri-export zones (AEZs) aims at strengthening the entire value chains in a comprehensive manner for an identified crop. A memorandum of understanding (MoU) between Reuters and MSAMB was signed in May 2007 to provide information about market arrivals, prices, weather forecast and market guidelines to farmers through mobile telephones. More than 10,000 farmers have subscribed to this facility.

6.3.4 Entry of the Private Sector

The supply chains in India formed under the Act of 1963 were becoming inefficient as a growing number of intermediaries were merely substituting for infrastructure.

¹The added features are (i) the establishment of *competitive markets* which include private markets, farmer-consumer markets and direct marketing; (ii) permission for *private markets* whereby any person, partnership firm, cooperative society, NGO or company can establish a private market with a licence from the Director of Agricultural Marketing (although no private market can be located within the market area of the Bombay Agricultural Produce Market Committee) to sell products by open auction in the private markets; (iii) recognition of *farmer-consumer market* created by any person, partnership firm, cooperative society, NGO or company in one or more than one market area¹ (excepting the market area of Bombay Agriculture Produce Market Committee) with a licence from the Director enabling farmers to sell more than 10 Kg of fruits and vegetables or other perishable agricultural produce and 50 Kg of foodgrains or other nonperishable agricultural produce to one single consumer; (iv) licence for *direct marketing to processors* in one or more than one market area to promote processing units, export and retail business; (v) declaration of *special commodity markets* by the government on the basis of arrivals, turnover and geographical area with modern infrastructure and storage facilities as per the requirement of the agricultural produce; and (vi) legitimization of *contract farming*: under advance contract¹ with proper dispute settlement arrangement where the farmer will not be deprived of his right to the title of his land under any circumstances and the agricultural produce will be directly delivered from the farm yards.

The new Act promoted a more integrated market structure where the farmer is enabled for backward and forward linkages in the chain. With the new provisions, corporate entry into agriculture markets has already begun in the state.

Corporate units like Reliance, Godrej, Deepak Fertilisers and Petrochemicals Ltd., ITC and Bhartiya Group have entered agricultural markets to capitalize on opportunities such as processing, marketing and export of agricultural products. These companies have linkages with small and large farmers to source produce. Contract farming is permitted as a method of procurement. ITC is linking farmers across the country on the online platform through e-Choupal, while Reliance Retail has an ambitious 'field to fork' retail plan to directly source produce from fields. Mahindra ShubhLabh came into existence to provide total farm solution to the problems of farmers. Other companies such as Hindustan Unilever Ltd., Nijjer and PepsiCo are involved in contracts where the produce is processed into value-added food products for domestic as well as export markets. Deepak Fertilisers and Petrochemicals Corporation Limited (DFPCL), a subject of this study, also entered agricultural marketing through its Agri-Business & Farm Solutions (ABFS). The ABFS division provides various services to farmers and is involved in agricultural marketing.

6.4 Marketing Reforms in Himachal Pradesh

6.4.1 Regulated Marketing

The Himachal Pradesh Agricultural Produce Markets Act, 1969, came into effect in 1970 to consolidate the varied regulations (provided by 'the Patiala Agricultural Produce Markets Act' of 1948 and 'Punjab Agricultural Produce Markets Act' of 1961) that created confusion and duality in the newly constituted state. The constitution of a Himachal Pradesh Marketing Board followed. A Chairman and Secretary of this apex body were appointed from the state government bureaucracy. For every notified area, a marketing committee (MC), comprising of members of producing communities and traders, was accountable to this Board.

6.4.2 Problems with the Regular Channel

The main complaint we encountered about this channel related to malpractices of buyers. For lack of alternatives, the orchardists of Himachal Pradesh are intensely dependent on traders from Delhi especially from Azadpur market and on established members who they claim charge illegally high commissions. Ignorance, illiteracy, poverty and lack of organization among small-producing farmers possibly strengthened the traders' power. Collusion with officials, wrong weighing,

false price reporting, overcharging and even unjustified charging of farmers are problems reported by most of the respondent farmers. Besides, deals are said to be struck through undercover negotiation when the law permits only sales through open auctions. Several other means of cheating and exploiting the farmers are reported. Market fees and agency charges are also considered high by farmers. They are high even in relation to prescribed ones as provided by law. The Mandi rules are also perceived to be favourable to traders. Marketing of fruits is a speculative exercise in which the farmer is at a losing end with low returns. A change in the system was required for its serious flaws and the injustice it inflicted on producers.

6.4.3 *New Era*

In Himachal Pradesh, reforms in agricultural marketing were needed more on account of the malpractices prevailing in the existent system than the length of the marketing chain. The old Act was repealed and marketing reforms based on the Model Act were introduced with the enactment of Himachal Pradesh Agricultural and Horticultural Produce Marketing (Development and Regulation) Act 2005. The aim was to enable the farming community to derive maximum value from new opportunity arising at home and globally.

The Act provides for setting up private markets, cooperative marketing, consumer market (direct market), contract marketing and creation of postharvest infrastructure. Farmers are encouraged to directly sell to bulk buyers, to processors and even to consumers. There was a provision for public-private partnership in the supply management. Himachal Pradesh today has one of the lowest *mandi* rates. The state has taken a lead role in reforming agricultural marketing in India.

Development of marketing infrastructure and associated facilities is a major objective of the privatization drive. The owner of a private market yard is required to provide minimum amenities like auction platforms, shops, godowns, canteen, toilets and drinking water for the comfort of the producer and the buyer. Other facilities of modern marketing like warehouses and cold storage, ripening chamber, electronic auctioning and electronic display of market information are also new attributes anticipated. Stalls for farmers and growers and for ancillary services like supply of seeds, fertilizers, and organic fertilizers are other features of private markets. Registration with the committee is required for every person who desires to set up places of purchase, sell, storage, processing, forwarding and contracting in agricultural products. Statutory exemption is given to sale of products by the producer directly to someone who buys for self-consumption up to a maximum level of transaction. The MC is required to maintain necessary records.

Many of the centrally sponsored schemes for developing agricultural marketing infrastructure are linked with the amendment of the Act. The assistance under this scheme (33.3 % subsidy on capital cost at the time of survey) was extended not only to the state Board but also to the private sector but only with a cap. When the Himachal Pradesh State Marketing Board availed of the assistance for several schemes, a few

private sector agencies also accepted the opportunity offered. The Adani Group set up controlled atmosphere stores. Other companies are also setting up cold stores. The involvement of NABARD in the whole development is also notable. Adani Fresh Limited, Container Corporation of India and Dev Bhumi Cold Chain Limited are private agencies active in the state.

Major differences are observed between traditional and emerging marketing channels in the state. While 6–8 % commission is charged by traders on producers, no such charges are levied in the emerging channels in which buyers are also known to extend marketing support such as provision of packing materials to growers. However, these buyers procure only from selected growers, an act which is not known in the other channel. Large buyers procure directly from farmers in the emerging channels and preserve the products in cold storage facilities, the Adani Group and the Indian Railways being two such bulk buyers.

6.5 Marketing Reforms in Assam

6.5.1 *Traditional Marketing*

The Assam Agricultural Produce Market Act 1972 came into effect in 1977 when the State Agricultural Board was set up. The regulated markets (RMs) were established in different places in the state with market yards and facilities of storage godowns, auction platforms, shops, bank and post office, parking place and drinking water supply. The MCs are responsible for actual implementation of the Act, with the Assam State Agricultural Marketing Board (ASAMB) headquartered in Guwahati supervising the MCs. The state government appointed a chief executive officer of the Board with general control over employees of both the ASAMB and the MCs. The MC levies market cess on all produce sold in the RM.

The ASAMB established 24 MCs, 20 primary market yards, 204 sub-market yards and 848 rural primary markets. Some developments have taken place in traditional marketing in the recent past. To facilitate information flow the regulated markets are covered under AGMARKNET (see Sect. 5.8 in Chap. 5). According to the records there is 1 organic market, 19 cold storages and a number of processing units in the state. Besides the ASAMB, the cooperative organizations, namely, the North Eastern Regional Agricultural Marketing Corporation Ltd. (NERAMAC) and the STATFED along with the FCI, are other major state or central government agencies involved in agro-marketing.

6.5.2 *Failures*

The marketing scenario in the north-eastern states differs from other states in India and is not a success story. As is well documented, these states suffer from various

geographical and sociopolitical difficulties along with economic backwardness. The markets tend to be more scattered and less organized in these areas, and the state government has a greater role to play in regulating and developing markets. The paucity of marketable surplus which reduces arrivals in each market and makes trading in the designated markets unviable is a major problem. Thus, even with Assam's comparative strength in producing horticultural products, the potential for trading with other states remains unrealized under the constrained circumstances. State marketing agencies like ASAMB and NERAMAC have proved to be inadequate for the purpose.

By not allowing traders to buy from outside the market premises, the regulation came at a cost. Besides these natural problems, complaints of malpractices do not spare the markets. Formation of association by market functionaries to bargain against producers is reported. Infrastructure is also highly inadequate, leading to delays, congestion and cheating even while the area served by each market yard is inordinately high, adding to the troubles of marketing.

Thus, it is not surprising that despite creation of limited facilities of principal market yards and sub-market yards, much of the transactions actually take place outside the precincts of the yards either at farm gate or at traders' premises. Shifting of markets from traditional sites to regulated sites has not been fully effective even till date after so many years. Stalls are observed to be running along the sides of national and state highways in a congested and chaotic manner, despite having yards presumably equipped with infrastructure not far off. In the scattered scenario of marketing, most players remained beyond the reach of AGMARKNET, which covers only the MC offices. Market regulation is thus found to be highly incomplete and an imperfect story, and the latest round of reforms could be a milestone in the state.

6.5.3 Amendment and Progress

The Assam APMC Act 1972 was amended in 2006 in accordance to the Model Act circulated in 2003. The Act relieves the markets of existing restrictions on storage, movements and transportation of products. The amended Act permits and encourages private marketing (PM), direct marketing (DM), consumer-farmer market (CFM) and contract farming (CF). All specified agricultural produce may be sold in principal market yard, sub-market yard, private market yard and other places. It will not be necessary to bring produce covered under CF to the market yards, and the produce may be sold to the sponsor right from the farmer's field.

Under the new law the Director issues registration for setting up yard for PM and CFM and have to give reason for any refusal of registration. Private purchase is possible for trading, export and other value addition. The CFM can be established by developing infrastructure by any person or group of persons other than an MC for purchase to be made by consumer from the producer, provided the purchase

does not exceed a certain volume. Similarly, the sponsor in CF will register with Deputy Commissioner of the district of farmer's residence. Public-private partnership (PPP) is also a concept implemented in the state after the amendment.

CF under PPP is spreading in a few districts of the state in commercial flowers, potato and ginger. The self-help groups are growing orchid and anthurium commercially under buy-back arrangement with flower exporters. About 1,500 ha of land covering 3,000 farmers growing horticultural crops is reported to be brought under CF. The ASAMB has decided to develop a single commodity market for banana in Darragiri and set up a terminal market in Kamrup district. Contract farming is also extended to high-value rice cultivation. To make AGMARKNET effective, the Board has adopted a special scheme 'Krishi Bipanan Tathya Setu' to link up producing area with wholesale market within and outside the state covered by AGMARKNET. However, marketing in Assam is still unorganized, and reforms are at a stage of infancy though there are signs of transitions apparent in the horizon today.

In the traditional market, a large number of intermediaries consolidate the produce at the village market and reconsolidate 2–3 times before it reaches the final consumer, but as noted earlier, the 1977 Act did not attain functional effectiveness of regulated marketing. Today, DM is emerging to enable farmers to directly sell to consumer or miller/processor without having to go through the middleman and help bulk buyers to economize on transportation cost. The buy-back arrangement of the CF has also gained momentum.

6.6 Marketing Reforms in Bihar

6.6.1 Traditional Marketing

Bihar is a state where agriculture has remained backward despite its potentials. In 1958 the state government initiated the marketing bill to revamp the traditional exploitative marketing system and enacted the Bihar Agricultural Produce Marketing Act (BAPM) in 1960. In the first phase all the wholesale markets were brought under regulation followed by the creation of 60 MCs. In 2006 there were 96 APMC regulated markets in the state.

6.6.2 Limitations of Regulated Marketing

The effect of regulation is reported to be ambiguous and rather imperceptible. The limitation of the state government resources is mostly responsible for slowing down the development. Not only the lack of infrastructure and the poor market intelligence but also the failures to enforce open auctioning were the main inadequacies reported. A few monopolistic traders manipulated to keep prices depressed and

volatile so that the prices generally bounced back shortly after harvest. The farmers lost more in the process. They could glean price information only from the rival traders and not from any extraneous or organized source. Although the small farmers were hurt more by the failure, larger farmers were also not spared. About two thirds of the large spread between producer and consumer prices is reported to be cornered as margins by intermediaries. Producers' faith in the regular marketing system was poor. A majority of the farmers and traders were, as a result, not attracted to the RMs for undertaking transactions.

Nevertheless, certain promising signs could not be missed also. Development financing was availed from institutional and multilateral sources starting with the World Bank assistance of \$14 million in 1972 for construction of market yards and urban wholesale markets. Evaluation of the system found signs of tendencies of prices getting smoother, decrease in market concentration and the potentials of pledge financing. Greater emphasis was however found to be laid on developing urban markets than rural and primary markets that left the small farmers at the mercy of local traders.

6.6.3 Reforms?

The state government repealed the APMC Act in September 2006, when the centre advised that the states will have to change their existing frameworks of agricultural marketing. The idea was to facilitate varying models of market to evolve both to offer a competitive environment to cooperative and private sectors with the RMs and to allow investment in marketing to accelerate.

Paradoxically, no new Act has since been reinstated, so that following the disbanding of the Bihar State Agricultural Marketing Board (BSAMB), agricultural marketing in the state is functioning without any formal institutional structure. While this 'open agricultural market' could be a sign of immense flexibility, there is little organized private involvement in marketing of crops today. With no APMC Act in place, trading is conducted in an unregulated and non-transparent manner, although the *mandi* is still used by traders as a venue. No alternative channel, worth mentioning, seems to be emerging.

There is hardly any evidence that farmers themselves are joining together as collective sellers. It is felt that there is little promise at present on that front, given that the society is rigidly divided by the caste system. The mutual lack of trust and cooperation resulting from social fragmentation prevents financial collaborations towards forming organizations. Only in the case of litchi, a fruit produced abundantly in the state, there has been some organized private effort at marketing. Marketing efforts to buy this fruit directly from farmers and ship it to Delhi market are however till now a failure, due to the shortage of cold storage, the poor transportation system and the short shelf life of the product.

A greater problem arises in infrastructure creation and institutional financing. The BSAMB has 1,324 acres of land and 95 markets. A major market development

scheme with 5 modern terminal markets, conversion of 54 market yards to Agri-Business centres of middle tier and creation of 1,500 rural *haats* with developed facilities at the grass-roots levels fed by on-farm processing centres had earlier been proposed and were also considered seriously for institutional financing from sources like ADB. Fund was sought from the central government under the National Horticulture Mission. All these grand plans are currently in suspense due to the lack of policy, the existing infrastructure languishing in poor maintenance and the market intelligence kept suspended in abysmal shape in the absence of a fully functioning marketing body.

6.7 Marketing Reforms in Jharkhand

Jharkhand was once a part of the state of Bihar. After the bifurcation of the parent state only in the year 2000, the new state Jharkhand adopted Bihar's APMC Act in its pure form. The state had 25 regulated agricultural markets distributed in 7 districts. The Jharkhand State Agricultural Produce Marketing Board (JSAPMB) was formed in 2001. The Board has taken up integrated development schemes for the development of 80 Haat Bazaar (rural markets) requiring the construction of 4–6 covered and open platforms; internal roads of sufficient length; a community hall, with the provision of toilets; tube wells; and other such amenities.

Subsequent to the circulation of the Model Act in 2003, JAPMC Act 2000 was amended. The new Act that came into effect in 2008 provides for new features like direct marketing, contract farming and markets in cooperative and private sectors, but the processes have yet not taken off fully. While the *Reliance Fresh* retail chain is allowed to operate in the state, dialogues with corporate bodies on contract farming are yet to bear fruit.

6.7.1 Traditional Marketing

Unlike subsistence crops, fruits and vegetables are highly perishable but are commercially marketable. Usually vegetables sold in Jharkhand change hands three to four times in the space between the producer and the consumer. Farmers generally sell to village merchants, small commission agents (*kutcha arthia*) and itinerant traders in the periodic *haat* at the village level. The merchants in turn sell in weekly primary markets or wholesale secondary markets in urban centres, from which the product moves to terminal markets or to retailers and consumers. Only a few farmers with large holdings may sell directly to wholesale markets, but in practice, there is little participation of farmers in the urban markets. For the small and marginal farmers, the village periodic market is the most important place of product disposal. A cooperative agency for marketing vegetables called VEGFED

does exist, but it is not reported to be of importance. On the whole, Jharkhand inherited a system from its identity as a part of Bihar (earlier discussed).

6.7.2 Weaknesses

The farmers expressed major concern about the stark absence of development of the rural markets and the lack of functional cooperative system for vegetable marketing. Their compulsion to rely on private intermediaries operating within the village and in *haats* was also aired with discontent. They report that regulatory measures are not enforced in the rural markets. The control enjoyed by the market intermediaries and the lack of infrastructure make conditions oppressive and difficult for them. The earlier APMC Act prohibited transactions outside the regulated *mandis*, direct marketing and direct procurement from farmers' fields. The Act restricted setting up any markets other than the government markets. So under the law the farmers had little option.

6.7.3 Advances in Marketing

The APMC Act of Jharkhand drawn from the earlier Bihar APMC Act of 1958 came in the way of a new private initiative in modern retailing and of upgrading the supply chains in the field of fruits and vegetables. The Jharkhand government amended the APMC Act and allowed Reliance Fresh to retail vegetables. The amendment has also removed restrictions on direct procurement from farmers and gave freedom to farmers to sell their produce wherever they found it more gainful.

6.8 Marketing Reforms in West Bengal

Resistances in West Bengal are a major force to reckon with on the path of agricultural market reforms in India. Although the outlook expressed by the state towards the proposed set of reforms has been sceptical and at the best ambiguous, now and again the state government did express its intentions to carry out the amendment. Yet it is one of the states that have not yet amended the APMC Act.

6.8.1 Regulated Marketing

The West Bengal Agricultural Produce Marketing (Regulation) Act, 1972, for the regulation of marketing in the whole state of West Bengal was meant to apply to agriculture, pisciculture, sericulture, forestry, animal husbandry and other specified products. Agriculturists, as defined by the Act, are persons who engage in production or growth of agricultural produce by self (peasant), by a tenant and by hired labour, tenancy being a common tenurial arrangement in the state's history. The market functionaries include agents like traders, commission agents, brokers, weighmen, measurers, surveyors and warehousemen who carry on business for the specified market with a valid licence² for the specified marketing year. The traders or agents are licensed by the local authority like town committee or *gram panchayat*.

As in other states, the regulatory framework created for agricultural marketing is in many ways flexible enough to permit changes that may be considered desirable by the state government. The 'notifications' are important instruments in the hands of the state government as is clear from the following description. *The state government may 'by notification' declare any area as a 'marketing area' within which the purchase and sale of produce 'specified by notification' shall be regulated. Any enclosure, building or locality in the market area can be declared 'by notification' as a 'principal market yard' or as a 'yard' or a 'sub-yard'. No local authority and other person shall set up, establish or continue setting up any place for the purchase, sale, storage or processing of these agricultural products within a 'notified' distance of the market yard or within a 'notified' distance of the market area except in accordance of this Act. The state government may 'by notification' 'include or exclude' any area from the market area or any 'produce' from list of produce. Sales of produce by the producer himself or by his employee to*

²The specifications of the agencies are also provided by the statute as follows as explained by the Centre Brokers: persons who negotiate contracts on behalf of the principal; commission agents: persons who buy and sell produce on behalf of the principals, keep it in custody and control it during the transactions, collect payments from the buyers and pay it to the seller and receive commission as a percentage of the amount involved in the transaction; weighman and measurer: persons whose work is, respectively, to weigh agricultural produce for sale and to measure consignment for sale based on West Bengal Standards of Weights and Measures (Enforcement) Act 1958; warehouseman: person whose business is to store agricultural produce in any structure or enclosure on behalf of the depositing person; surveyor: person whose business is to survey a consignment of agricultural produce for sale in regard to quality, refraction, adulteration and other purposes; and traders: persons ordinarily engaged in the business of purchasing and selling agricultural produce as a principal or as a duly authorized agent or one or more principals and include persons ordinarily engaged in the business of processing and preservation of the produce.

a buyer who buys for self-consumption are excluded from the purview of these restrictions. Similarly, sale through retail³ transaction (small volumes) is also exempted.

A market committee (MC) is constituted by the state government for every market 'area'. The MC generally includes two officers of the state government of whom one is an officer of the directorate of agricultural marketing and the other represents the cooperative marketing society. The MC also is represented by a bank financing the marketing channel and two persons representing small growers (less than 2 ha). The local Member of Legislative Assembly (MLA) is also in the MC.

When a market area ceases to be so, the MC of the area will stand dissolved, and the unexpended financial balance of the marketing fund and other liability will vest with the state government. Thus, the state government has an overwhelming say on the market regulation regime, while the interests of the people are represented by the presence of different stakeholders and the elected MLA. The MC holds a meeting preferably every month, levies fees at nominal rates on transactions, recovers documented returns of transactions from licensed traders and is entitled to seize products or related documents in respect of illegitimate transactions. The MC's records may be inspected for justified causes, and if considered necessary, the MC's authority can even be superseded by that of the state government's.

6.8.2 Towards Reforms: The Apprehension in West Bengal

That there is a case for correcting the loopholes of the marketing system that has led to high intermediary margins, poor efficiency and low producer returns and for strengthening it by bringing professionalism and competition in the market is widely acknowledged. Nevertheless, the centre's suggestion did not convince the state government of its welfare effects on various sections of economic functionaries (see [Notes in Appendix 7](#)), and the confidence in the proposed legislation was low. It is felt that the thrust and motivation of the New Agricultural Policy 1995, formulated in the wake of liberalization drive in India, to 'encourage private investment in agriculture and promote high value crops for exports', would be at the expense of food crops or food security. While the amendment of the Act is meant to invite multinational companies, whether farmers and others actually involved in agriculture would benefit is also questionable. Especially when agrarian crisis, farmer suicides and the vagaries of the weather are fiery issues, programmes that support farming communities demand urgent implementation rather than empower powerful companies to find easy access to market committees.

West Bengal has the same marketing structure in place as already outlined and is yet to amend it to allow new innovation to seep in. It is however apparent that latent

³ Retail sale means sale of agricultural produce not exceeding such quantity as may be fixed under the Act for specified products.

even in the existing legislation are considerable possibilities of change. The regulated markets or the RMs are established in places where agricultural produce arrives in bulk and such assemblage points are essentially very large *mandis*. The traditional markets in rural West Bengal handle almost all of the trade but suffer from poor infrastructure and the overwhelming domination by traders.

In 2006 the state had expressed its keenness to allow private parties to purchase directly from farmers. The state acknowledged the need for private investment in the sector. In 2011 the state government still remains in favour of the amendment and is apparently willing to allow big retailers an access to farmers. The state however is reasonably clear that contract farming will not be part of the amendment. Certain sections have felt that the proposed enactment is ‘anti-farmer’ and ‘anti-citizen’ and that the ways in which the option of reforms is being imposed on the state amount to being ‘threat’ of reducing other financial inflows from the centre. A dominant view was that the amendment in the proposed form would weaken the existing marketing regulation rather than strengthening it. The political contradictions are however clear. Reforms in agricultural marketing in West Bengal are undoubtedly a huge political issue for the state and even for the whole country. Despite the intentions, progress has been far from speedy.

That political compulsions peculiar to the region are an overriding factor for the dynamics is also suggested by the fact that the existing old legislation of APMC has inherent in it a wide ambit of flexibility and yet little change in predisposition towards reforms is evident even after the government in the state passed from one political party to another after an electoral upheaval. Many of the provisions (commodities covered, place of market yard, space for market area, etc.) are specified but amenable to modification by ‘notifications’ from the government. The state does not bar third parties from buying produce from farmers for onward sales, although the rights of private parties are clearly spelt out. *Mandis* are not generally government owned.

It is the political willingness and acceptability of different options for reforming rather than the new legislation that is standing in the way of allowing changes to seep in. It is pertinent to state that despite the lack of dynamism, all is not static. Private retail outlets like Reliance Fresh, Spencer’s and Big Bazaar are actively operational in urban areas, and occasional news reports of contractual purchases by major private processors are distractions to the perception of the state’s intransigence. Direct marketing is favourably considered.

6.9 Marketing Reforms in Uttar Pradesh

Prior to the establishment of the regulated agricultural markets (RAM), there was no market place or other associated facilities, and all business activities were performed in the premises of the commission agents. A large number of intermediaries were involved, and farmers had to accept arbitrarily large deductions in the names of *arhat*, *kharch*, *karda* and *dharamda*. The government of Uttar

Pradesh enacted the Uttar Pradesh Market Act in 1964 (APMC Act 1964 or Uttar Pradesh *Rajya Krishi Utpadan Mandi Parishad* or UPRKUMP 1964) under which all rural agricultural markets of the state were regulated.

All transactions in the covered markets were operated under the provision of the Act 1964. Farmers were compelled to bring their produce to the market yard and sell it through middleman. A number of committees were constituted by the Uttar Pradesh government including the Uttar Pradesh State Agricultural Marketing Board (UPSAMB). The UPRKUMP 1964 aimed at reducing multiple trade charges, assuring proper weighment, establishing market committees and providing necessary facilities for trading.

When the Act came into force in 1965–1966, the Uttar Pradesh government implemented the Act in all markets across the state. The number of regulated markets grew fast in the early 1970s and stagnated thereafter. The number stood at 263 in 1997. Of this, 32 mandis were expressly for fruits and vegetables. The markets are categorized or ranked into 4 groups by total income. The *Mandi Parishad* is expected to prevent malpractices and illegal deductions in the yards. In 1973, under the direction of Mandi Parishads, the state government set up a *Rajya Krishi Utpadan Mandi Samiti* (RKUMS) or the State Agricultural Produce Board to supervise the functioning of market committees, and in 1976 an Independent Directorate of Agricultural Marketing was also formed on the recommendation of the Agricultural Commission to control the regulation of sales and purchases of produces.

Since 1974 development activities to provide facilities like yards and link roads have been taken up. Developmental activities conducted by the Mandi Samiti for farmers' welfare such as compensation for fire and accidents at threshing places, scholarship schemes to agriculture and home science students of farm families, computerization, helpline facilities and creation of *goshalas* or cattle homes are documented. The Board has received a prestigious award "Kosamb" from the Government of India for good management.

6.9.1 *Limitation and Changes*

The regulated markets therefore are seen as significant institutions responsible for empowering producers. Nevertheless, since a multitude of complaints like inordinate deductions from prices, excess influence of buyers and use of improper weights and measures were suggested by several evaluative studies on regulated markets at the country level, the state governments including Uttar Pradesh government were advised to amend the existing Act and allow reforms in the system. Yet Uttar Pradesh is one of the states that have not yet amended the Act.

In reality, the government of Uttar Pradesh did amend APMC Act 1964 in 2004, but the amendment was withdrawn by the government after a few days of the announcement. The opening of Reliance Industries Limited retail outlets in important cities of the state led to prolonged protests by the trader community. As a result

of the withdrawal, major investment of Reliance has wound up. As it exists, there was not even a modification of the APMC Act 1964.

However, the government of the Uttar Pradesh exercised its power under Article 26(M) of the existing Act to allow private sector to function in some form to establish Kisaan Bazaar. The wholesalers and retailers are allowed to purchase in bulk directly from farmers in Kisaan Bazaar set up in Agra in 2011–2012 with licence from the Mandi Parishad of Agra. Private players like Indian Tobacco Company (ITC), KRBL and DFM Foods Limited are some of the private sector buyers. Agra city also has a Bharti Bazaar and a Big Bazaar selling fruits and vegetables. The latter serves upper middle class and the higher-income groups, but fruits and vegetables are not the major commodities sold. The Big Bazaar has not succeeded in selling 'high-quality products' at reasonable prices with respect to fruits and vegetables. Direct marketing licences are not issued in the state. There are no private markets, and contract farming is also not allowed. Even farmer's consumer market is not permitted. Only single licence and special commodity markets are allowed. Reforms are sporadically however manifested in the entry of several corporate firms in agro-marketing under the existing legal structure. The agri-export zones are another demonstration of reforms. The practice of partial contract farming is also not unknown.

6.10 Marketing Reforms in Punjab

Punjab and Haryana form the grain basket of the country, and the status of marketing reforms in these states is an important indication for the transition of agriculture in India. Punjab, which included what is Haryana today, had followed the guidelines of the Royal Commission on Indian Agriculture (1928) and enacted legislation for market regulation in keeping with the country's policy. Punjab Agriculture Produce Marketing Act received the accent of President of India in 1961 for consolidating the law and for better regulation of purchase, sales, storage and processing of agricultural produce in independent India.

The Punjab State Agricultural Marketing Board (PSAMB) was formed as an executive advisory body. The Chairman of the PSAMB was nominated by the state government, and there were 16 other members including several government representatives and bureaucrats as well as producers, market intermediaries and representatives from farmers' organizations and cooperatives. All produce brought to the market was sold by open auction so that even secret bid had no role in price determination. No deduction was to be made on the price decided. The *kutchha arthia* who is assigned to act on behalf of the seller and only by the seller has the most important role in the transactions. A market development fund was formed by pooling all receipts of the Board consisting of contributions from market committees, grants and loans and deployed for the maintenance of improvement of the market.

Over and above the risk due to price volatility and the high incidences of postharvest losses, this approach to marketing also imposes usual constraints stemming from the large number of intermediaries, exploitative tendencies of commission agents, lack of freedom of producers to sell outside the market yard and manifold dependencies on the commission agents even for loans and advances. The APMC law actually weakens the link of the farmers with the final market and also more disturbingly with the agrobusiness which is becoming important in today's economy. Its bias in favour of a few crops is also becoming a weakness.

Due to Punjab's place in the green revolution that shook the country in the 1960s and 1970s, foodgrains enjoyed a central place in the state's marketing strategy. Benefits of the marketing infrastructure hardly percolated to other products, not even to pulses and coarse cereals. It was highly inappropriate for fruits and vegetables although the states Punjab and Haryana had natural advantages for growing them also. With a saturation in the green revolution becoming evident along with ecological adversities connected with excessive promotion of rice and wheat, the agricultural policy turned its focus towards horticulture. This shift in emphasis created an urgent need to change the rules of marketing.

Punjab has a dense market system with purchase centre within the radius of 10 km from most of the villages, but the markets are equipped to handle foodgrains, mainly the traditionally major crops, i.e. wheat and rice, rather than the horticultural crops. Moreover, the system, as it is increasingly realized, has a major emphasis on the quantity of produce, while quality is ignored. For fruits and vegetables that are highly perishable over relatively short time periods and can be rich in varied nutrients that require preservation with special effort on practices, quality is undoubtedly a central attribute of marketing. The system of marketing in Punjab therefore has to adapt to a changing market in which the demand for horticulture product will be growing.

The system of regulation that worked in Punjab on the strength of a string of intermediaries starting from the commission agent or the *arthiya* followed by village wholesaler, secondary wholesalers located in towns and cities and the retailers created a wide rift or 'spread' between the price that the producer received and what the consumer pays. It also led to large volumes of wastage because the mandatory requirement of all notified agricultural commodities including horticultural products to pass through regulated market regardless of their facilities prevents farmers from directly selling to processors and exporters. Firms are not permitted to enter into contract farming and buying directly from the farmers. This adds to unnecessary intermediaries in the supply chain and reduces the competitiveness of the product.

It should, however, be noted that in actual practice fruits and vegetables are generally sold by farmers through a specific system commonly known as preharvest contracts (PHC) in which agreements are made between the buyer and the seller prior to harvest leading to advance payments being made to the producer to reduce risk and uncertainty over price. Though a departure from the open auction method of RM, the system did not pre-empt the large price 'spreads' from appearing nor the exploitative opportunities of middlemen (preharvest contractors) over the

producers from enduring. The state APMC Act also inhibited institutions from being innovative and flexible. The prevailing contract farming (PHC) did little to link producers with Agri-Business. The obligatory market fees and charges as usual added to the cost of products.

From 2003 the Act was partially amended to safeguard the interest of farmers through provisions for private markets and contract farming. The amendments are highly incomplete and often not fully implemented. Private markets were permitted to be established, but direct purchase by companies was not allowed. Registration of contracting agreements, establishment of a dispute settlement mechanism and specification of model agreements are unfinished tasks. Amendments of registration (not licensing) of functionaries and single registration for transactions in multiple markets are not implemented.

The new innovations that were promoted in the last two decades involved contracting and direct selling. Farmer's market called *apni mandi* helped to bypass middlemen totally and ensure that fresh vegetables were sold at prices that were remunerative to producers and reasonable for consumers. This form of direct sales still constitutes a small portion of the transactions, and only a few farmers participate. Alternatively, the producers sell directly to processors who in turn sell the processed product to the consumer. *Farmer's Evening Markets* (FEM) for fruits are also a recent innovation. Bypassing the preharvest system, this market delivers the products from the farmers via the FEM to the wholesalers at the local level and in distant markets and to retailers to reach the consumers. The FEM however does not avoid the presence of intermediaries in the chain.

Contract farming is being 'aggressively' promoted by the Punjab government as a way to overcome the constraints due to risk and resource shortage facing the smallholder and the absence of well-defined credit and insurance markets. A number of corporate Agri-Business firms have signed memorandums of understanding with the government to promote different high-value products. Since 2003 the government launched contract farming in crops like maize, barley, sunflower, hyola and basmati rice. Some of these agreements are multipartite, and Punjab Agro Food Grains Corporation is a necessary intermediary and facilitator. The contracts are not always legal commitments, and the government supports both the buyer and the seller to encourage the development of this form of marketing. Advanta, Mahindra ShubhLabh, United Breweries and Rallis are some of the companies that have entered the market in this route. There are other models that link up farmers with exporters, processors and vertically integrated franchises. The Punjab Agro Industries Corporation (PAIC) facilitates contract farming through joint ventures with private processors. The PAIC also procures products such as green peas in Patiala for supplying to local processors.

PepsiCo as a processor pioneered a model of contracting starting with bulk procurement of vegetables like potato, tomato and chilli, but although initial trials with tomato were successful in augmenting productivity, due to disputes and breach of contract, the tomato processing plant was closed. In this model the processor supplies seeds and seedlings of required varieties to producers and monitors the cultivation process. Apart from Pepsi, Nijjer Food is another contractor, but this

buyer accepts all products that are brought to the factory and cleans them for contamination. Besides processor, contracts are made with exporters and involve vertically integrated franchises. Organized retail is a recent phenomenon and is yet a small fraction of food trade. Evolution of supermarkets and organized chains for retailing is miniscule but fast expanding in Punjab where the operation of Bharti Field Fresh Food Limited is visible. Reliance and ITC Choupal Fresh have also entered.

6.11 Marketing Reforms in Haryana

To regulate all markets in the state, Haryana state enacted for itself the Punjab Agricultural Produce Markets Act 1939 in 1961 after it was formed by the bifurcation from undivided Punjab in 1966. A large number of market committees were set up by the state government to supervise the functioning of agricultural produce in markets guided by a Haryana State Agricultural Marketing Board (HSAMB) that was established in 1969. The state has an unevenly spread network of regulated markets across the districts, the highest number being in Karnal, while Jhajjar, Faridabad and Rewari districts have only two markets each. In Rewari on the average 200 villages are served by one RM, so those farmers have to carry their produce over long distances and bear high transport costs. The HSAMB adopts a philosophy of 'Samridh Kissan Hamari Pahechan' to help farmer achieve further higher value or production. There are now 106 market committees, 178 sub-yards and other facility compared to only 58 market committees and 60 sub-yards that existed in 1969.

The HSAMB also strengthened its construction wing and has been a pioneer in the construction of link roads and approach roads. Covered shade storage capacity also increased. Incentives and financial assistance are provided to Agri-Business, and information centres are opened in Sirsa and Hisar to provide information and to organize seminars.

Haryana has partially reformed the marketing system for allowing contract farming. New model fruit and vegetable markets are created to provide retail and wholesale facility. Schemes are made to give assistance for grading, sorting and packing for value addition on horticultural crops. National Horticulture Mission has helped in creating commodity hubs for potato, tomato and kinnow. An export promotion council is also proposed. A network of laboratories for quality certification and training facility for growers in postharvest management and marketing are planned. A world-class terminal market for fruits and vegetables is planned to cater to Delhi and North India, and a flower market of international standard catering to both domestic and export markets is proposed near Delhi. Centres for excellence are planned, some of them with external finance. A network of farmer market is being set up.

Chapter 7

Socio-economic Conditions and Agriculture in Sample States

The states under study vary in their progress in reforms with West Bengal, Bihar and Uttar Pradesh being slow in legislation and some states including agriculturally advanced states Punjab and Haryana having only partially amended their laws. From [Tables A.3 and A.4](#) in the appendix, it is clear that each study area has its distinctive features and they are not exactly comparable. The following sections provide summary details of study districts. Details of the crops studied for the states are provided in [Appendix 2, section “Crops Covered Under Market Channel Studies: Fruits”](#). Section “Crops Covered Under Market Channel Studies: Vegetables” in [Appendix 2](#) describes the market institutions where the agents are surveyed under this study.

7.1 Districts Under Study

The districts in the samples show varied geography and socio-economic features. They include hilly regions like Shimla and Solan, a remote district like Tinsukia and forested geographies as Sehore in Madhya Pradesh. River plains are covered in the districts in Bihar, West Bengal and Punjab and semiarid segments in Maharashtra and Haryana. Minority population has a higher share in certain regions as in Sehore, Nashik, Murshidabad, Ranchi and Visakhapatnam. Poverty is more extensive in some of the districts such as Sehore, Ranchi, Murshidabad, Tinsukia and Nagaon, but districts in Haryana, Punjab and Maharashtra covered show far greater affluence. Most of the regions especially the districts in Punjab, Haryana and West Bengal are specialized in growing cereals, but horticulture is an existent strength in the Himachal, Assam and Jharkhand districts. Most remarkably, the average size of a farm and the share of small farmers differ widely. While the size in districts in Andhra Pradesh, Himachal Pradesh, Assam and West Bengal is very small, it is medium in Madhya Pradesh, Maharashtra and Bihar districts and fairly large in the districts sampled in Haryana and Punjab.

7.1.1 Visakhapatnam District in Andhra Pradesh

Andhra Pradesh is one of the states that amended the APMC Act recently. In Andhra Pradesh, the study crops are brinjal and banana, and the emerging market considered is direct marketing through the institution of Rythu Bazaar for both the crops. Visakhapatnam is the sample district. Both brinjal and banana are traditional crops in the area, having extensive demand arising in both proximate and distant places.

Visakhapatnam is an industrially developed district, but 55 % of the labour force is still engaged in agriculture (NSSO, 2007–2008). It is fairly urbanized. The population is partially tribal¹ (14 %) in character. The average holding size is only 0.9 ha compared to the state average of 1.2 ha, and nearly 90 % of the district's landholdings are small. The average irrigation intensity is at 35 % of the NSA, less than the state's 44 %. Most of this area is under surface irrigation. Rice is the dominant crop in the district, other major crops being maize, Bengal gram, red gram and sugarcane, but the productivity is low in general. Horticulture is a growing sector today, but fruits and vegetables arrive in the Visakhapatnam markets not only from this district but also from outside.

7.1.2 Nashik District in Maharashtra

Maharashtra too amended the APMC Act in 2006 and created a credible case for the emergence of new channels which give more space to private sector. One vegetable crop, namely, onion, and one fruit crop, namely, pomegranate, were selected for study which covers corporate mediation in marketing. Nashik is known for its pleasant climate suited for horticulture, although, of late, cases of higher than average temperatures and reductions in rainfall are becoming more frequent occurrences. Bajra is the main crop in the district and paddy is less important. The region is especially known for growing a large variety of fruits and supplying them to Mumbai city. Sugarcane is another cash crop grown, sugar factories being important contributors to the economic growth of the state. Poultry and dairy are other activities that are promoted by India's rural development programmes. Thus, the region is agriculturally and economically vibrant.

Agriculture is the dominant activity of the district. The average landholding size is moderately large, at over 1.7 ha as of 2001 in the district. About 74 % of the farmers are small and marginal, who operate 41 % of the area, which is far less than the typical Indian case. The region is largely dry with only 21 % of the land having irrigation, dominated by ground water sources. Of the villages in the district, only 10 % are not electrified. Although per capita income is higher than the state

¹ People belonging to scheduled tribe according to Indian Constitution have a high share in population.

average, over 24 % of rural households live below poverty. A quarter of the population belongs to the scheduled tribes.

Onion, one of the selected crops for study, has been the main cash crop in the region for over 30 years. Pomegranate is a rising crop as farmers in several blocks are shifting from sugarcane and grapes to pomegranate and flowers due to the shortage of water. The two selected crops onion and pomegranate have the advantages of being in demand all over the country and also overseas. The state of Maharashtra and the selected region in particular are dominant producers of the two crops in the country.

Storage and transportation are of prime importance in marketing of the selected crops. Most farmers make on-farm investment on storage especially for onion (chawls), but processing devices are locally not common. Onion is raised in kharif, late kharif and rabi seasons, but rabi is the preferred season as the kharif crop is liable to easy spoilage due to rains and humidity. Seasonal price variation being significant, farmers attempt to hold onion till October when the price usually rises. Pomegranate which is witnessing growing demand across the country due to its nutritive and medicinal properties is highly susceptible to spot disease stimulated by intermittent rainfall. Oily spots sometimes prove disastrous to orchards.

7.1.3 Sehore District in Madhya Pradesh

Madhya Pradesh in its present form came into existence in November 2000 only, following its bifurcation to create a new state Chhattisgarh. The second largest state in India after Rajasthan, Madhya Pradesh is situated in the heart of India. It is rich in minerals, bio-resources, history and culture. It is highly rural with its population divided among scheduled castes, tribes and the general category people. The poverty level is high, nearly 40 %, and part of the state is under forest cover. Several crops including rice and wheat are grown in the state, but the state is especially known for producing pulses. More notably, it is one of few and dominant states producing soya bean. Madhya Pradesh partially amended the APMC Act and gave permission to ITC for the purchase of soya bean from growers. As noted elsewhere, Madhya Pradesh is the main soya bean-growing state in India where its cultivation has remained geographically confined. No emerging channel could be spotted in Chhattisgarh, and the state could not be studied as was originally planned.

Sehore is at the foothill of Vindhyaachal mountains at a height of 600 msl² (2,000 ft), located 40 km from state capital Bhopal, and it is connected by Bhopal-Indore highway and western railways. It has fertile black soil and produces high-quality wheat. Twenty-six percent of the land area is under forest, and 56 % of

² msl: metres above sea level.

the area is cropped. The cropping intensity is 1.63 %. Of the net cropped area, 62 % is under irrigation in which dug wells, tube wells and tanks contributed 44.6 %, 32.3 % and 2.8 %, respectively making ground water important. Foodgrains occupy nearly half of the cropped area, in which cereals contribute 28 % and pulses 20 %.

Sehore is both a city and a municipal block in Sehore district (same name), located on the Bhopal-Indore highway. It is predominantly a pulse-growing area, with chickpea as the most popular crop among all pulses. Foodgrains constitute 48.9 % of cropped area, and among the non-foodgrains like fibre, fodder, sesame, soya bean and fruits, soya bean is the most dominant one, occupying 47 % of cropped area in the Sehore block and 45 % in Sehore district. Wheat, followed by maize, is the main cereal grown in Sehore. Small farmers account for 55 % of the holdings, while only 2.7 % of the holdings are large. The average farm size is fairly large by Indian standards at 2.7 ha which is the medium category. Sehore is the leading district in soya bean acreage and is also the first district where the ITC e-Choupal was introduced in 2004.

7.1.4 Shimla and Solan Districts of Himachal Pradesh

Two crops, apple and tomato, are selected for study in the Himalayan state of Himachal Pradesh. Apple is the main commercial fruit crop in Himachal Pradesh, and, although many vegetables are raised in the state, tomato accounting for one third of all vegetables is our choice. Rohru block in Shimla and Kandaghat in Solan are the selected areas of study for apple and tomato, respectively. Both these products are sold in markets in Delhi. Recently, Himachal Pradesh amended its APMC Act and is encouraging private and public sector companies to participate in marketing fruits and vegetables and to upgrade the marketing infrastructure.

Hilly regions across the world face severe restraints on economic development. Himachal Pradesh is no exception, though it is a progressive state in India. Expectedly, it is prone to migration of people looking out for livelihood. Forests and natural beauty are valuable wealth of the state and tourism is important. Agriculture is by far the major occupation of the people. Due to climatic distinctiveness, a wide variety of cash crops like fruits, vegetables and condiments grow well. While the area under fruits and vegetables registered high increases in recent decades, principal crops paddy, barley, pulses and oilseeds lost share. Thus, the cropping pattern is changing over time.

In Shimla, the elevation varies from 1,600 msl to 5,670 msl, and the entire district is mountainous with steep hills and forests. The climate varies from cold and dry zones to temperate and subtropical zones depending on the height. The terrain is rough and the soil is low in phosphorus but medium in carbon content. Small and marginal holdings that account for nearly 84 % of all holdings occupy only 50 % of the operated area indicating a skewed land distribution. The proportion of marginal holdings has also increased over time. Farmers mostly grow food crops, and only

21 % of area is under fruits and vegetables. Farming is done on tiny and terraced landholdings that are generally economically unviable. Apples account for 83 % of fruit area in the district. In Solan consisting of both high- and low-altitude areas, temperature is also variable falling to 0 °C in winter and rising to 40 °C in summer. Solan too has a large proportion (72 %) of small farmers, and the average farm sizes in Shimla and Solan are small at 1.1 and 1.7 ha, respectively.

7.1.5 Ranchi District in Jharkhand

Jharkhand, till recently a part of Bihar, is one of the states that have amended their APMC Acts in sharp contrast to parent state Bihar where progress has been tardy. Cauliflower, a vegetable crop in Kanke block in Ranchi district, is selected for study. Ranchi is the state capital of Jharkhand and the largest district of the state. Part of the Ranchi region is plateau. It is mostly a rural district, and over 75 % of workers engage in agriculture. Scheduled tribes (ST) constitute 42 % of the population. Infrastructure is poor and only 30 % of the villages are electrified.

Ranchi enjoys a pleasant environment and low relative humidity, but the rainfall distribution is highly uneven, so the possibility of multiple cropping is limited. The land is fairly forested (21 %), while current fallows and net sown area account for 16 % and 34 % of reported area, respectively. Wells account for nearly 70 % of irrigation, but only 31 % of farmers have irrigation, the irrigation intensity being only 9 %. Rice is the major crop, other main crops being maize, wheat and cereals. The state is rich in mineral resources, responsible for the state's industrial potential. Ranchi is rich in resources and environmental wealth, but economically, it remains relatively backward.

7.1.6 Tinsukia and Nagaon Districts of Assam

Assam, also known as the land of the red river and blue hills, is situated in the north-east of India. It has 27 districts, most of which are drained by rivers Brahmaputra and Barak. Three districts are located in the hill regions. Assam is predominantly agrarian but the share of agriculture in the state GDP has declined over the years to 23 %, though it still supports over 70 % of the population. Rice is the most important crop but oilseeds are also important. The APMC Act was amended in 2006 to allow flexibility in marketing to suit the specific situations in the state.

Tinsukia is known for its tea gardens and natural resources. Forests cover 35 % of the district's geographical area. It is bounded by Arunachal Pradesh and by Brahmaputra river which separates it from Dhemaji district. The soil is sandy to clayey and acidic. The climate is subtropical, warm and humid with average 140–150 rainy days in a year. The district is bestowed with deep forests, beautiful landscapes and biodiversity hot spots. Agriculture, which is marked by mono-cropping, engages

60 % of the population. Tea plantations and orange orchards as well as coal mines and oil refineries also provide employment. The district is home to only 4 % of the state's population, and the population density is relatively low. The literacy rate (63 %) is the same as Assam, and 40 % of people are poor by official count, and 73.7 % of the villages are electrified.

The cropping intensity in Tinsukia is only 1.4. About 80 % of farmers are smallholders. Tinsukia is the largest orange-producing district in Assam. Recently, problems like improper planting materials and poor management and a problem called 'citrus decline' causing poor health of orchards have moved growers towards tea plantations. However, because tea is labour intensive and due to the technical support of Citrus Research Station of the Assam Agricultural University, orange cultivation has regained popularity. The Technology Mission for Integrated Development of Horticulture has helped to increase the area under *Humithra* orange. Most small tea growers intercrop tea with orange. There are no organized marketing arrangements, and exploitation by commission agent and traders is common. Group and direct marketing is only a new initiative.

Nagaon, situated in central Brahmaputra valley, has hot and wet summer and dry and cold winters. Rainfall varies to 1,200–2,200 mm. It is agrarian raising paddy, sugarcane, potato and commercial crops. Over 80 % of farmers are smallholders. Rice occupied 55 % of cropped area, but the district also grows wheat and mustard. The district is densely populated, poor and rural in character. About 73 % of the villages are electrified. Over half of the cropped area is under rice. The main commercial crop is potato.

7.1.7 Murshidabad District in West Bengal

In West Bengal, the Kandi block in the district of Murshidabad is selected for survey, and the crop studied is a vegetable of the class arum, similar to yam and cassava. Murshidabad, the selected district, is situated on the left bank of the river Ganges. The case of mustard is also presented as a portrayal of the traditional channel. It is pertinent to note the West Bengal has not legislated reforms till now and the old marketing regulation on producers and streams of traders still remain.

Murshidabad is a fertile district with wet and dry climate by Koppen classification and receiving 1,722 mm of rainfall brought by the south-west monsoon winds between June and September. Rivers Bhagirathi and Jalangi drain the district. Bhagirathi divides the district into two regions, the Rarh and the Bagri, with different soil types. Rarh on the western bank is known for its crop lands under rice, while jute and silk (mulberry) farming is important in the east. The district is famous for its history and culture, associated with the Nawabs and in particular with Siraj ud-Daulah who lost to the incoming British initiating the colonial regime. The district is also known for other activities like tourism, silk textiles and craftwork.

Murshidabad has a high population density of 1,101 per Km². A large 64 % of the population is constituted of the minority community Muslims, but a majority of the others are Hindus. Scheduled caste population also constitutes 12 % of the

populace. Surface transport is the most dominant connectivity. Roadways are present and two major rail routes connect the district with other places. Though waterways also have potential, they are not developed. On the whole, the district is well connected. Three percent of the villages are yet to be electrified. Agriculture is the major activity of the people. Of the total number of workers, 57 % are in agriculture. Naturally, Murshidabad is also famous for silk, handicraft items and tourism.

Agriculture is progressive and diversified in the district. The land is elevated and slightly undulating having a gentle slope with heavy, greyish or reddish soil mixed with lime and iron oxide. The most important crop is *aman* rice.³ *Aus* and *boro* rice, wheat, pulses and mustard are also grown as well as cash crops like jute, jackfruits and mango.

Although making silk sarees and tourism are important occupations in the state, agriculture remains to be the mainstay, employing more than 45 % of the workforce. Much of the land in the district is utilized, so that 74 % of the land is under cultivation and 22 % put to nonagricultural uses, while only 4 % remains uncultivable. Another but less than 1 % of land is under forest cover compared to the state average of 13 %. Rice is the dominant crop grown mostly as the main kharif season, though summer rice (*boro*) is also important. Other crops of significance include wheat (though West Bengal is a small producer of this crop), jute, mustard and pulses. Several fruit trees are also grown in Murshidabad, but unlike other districts like Malda, mango is not a major crop. The average farm size is very small at 0.74 ha, and 95 % of the farmers operate less than 2 ha of land. This land is 82 % of the cultivated land in the district. More than 70 % of the land is however irrigated of which 73 % is served by wells.

7.1.8 Bhagalpur District in Bihar

Despite agricultural backwardness, shortage of economic policy and adequate governance, the potential of the state of Bihar is easily recognized. Bihar is a fertile state endowed with river valleys and a subtropical climate supporting horticultural crops. The land is watered by the Ganges. The state is known for several fruits and vegetables including mango and litchi. Mango, a dominant fruit in whose production the state ranks fifth in the country, is the study crop. Mango is grown in all 38 districts of the state, but six districts, Darbhanga, Samastipur, Muzaffarpur, East Champaran, Vaishali and Bhagalpur, account for one third of the production. Of these districts, Bhagalpur is selected as the study district because the special *Jardalu* variety of mango for which the state is proud of is grown in the district. Bihar has no APMC Act in place making agricultural marketing unregulated. Under this

³ Aman, aus and boro are the three types of rice grown in West Bengal in three different seasons of the year.

limitation, our study has chosen a channel operated by unorganized traders going by its recent emergence.

Bhagalpur district in the south-east of Bihar is one of the oldest districts. It is fertile with alluvial soil of the Ganges plain. Agriculture is the main occupation supporting nearly 60 % of the workers, and 57 % of the reported area in the district is devoted to cultivation. The rest is mostly put to nonagricultural uses or is barren. Forested land has a minimal share in land use. The cropping intensity is only 1.16. The population density is high at 1,180 per sq km, and nearly 81 % of the people live in rural areas. Backward sections have a small share in the population with 9 % belonging to the scheduled castes and only 2 % to the scheduled tribes, although over half of the population lives below the poverty line. The average farm size is very small at 0.56 ha. With 83 % of farmers having marginal holdings, the share of small and marginal farmers is extremely large over 94 %. The land is however mostly irrigated (32 %). Bore wells are major sources of irrigation apart from open wells and tanks. Major crops of this area are paddy, wheat and maize. Sericulture is also in practice. Infrastructure is not fully developed, and over 40 % of the villages are not electrified.

Litchi, banana, guava and mango are four important fruits grown in the Bihar state of which about 5 % of cultivated area is for mango. Bihar has natural endowments suited for mango cultivation. Indians are major consumers of mango, and there is also an international market. The fruit grows in large trees with long life, but the fruit itself is perishable, and a technology for inducing longer shelf life is a special requisite for marketing. However, Bihar has poor infrastructure. In a state where the APMC Act has been repealed and the market remains open and unregulated (see Chap. 6, Sect. 6.6), the prospect of building up desired facilities is uncertain.

7.1.9 Agra, Hathras and Pratapgarh Districts of Uttar Pradesh

Although Uttar Pradesh has also not amended the APMC Act, we had greater success in locating emerging channels in the state. This is probably because despite the regulations and due to certain relaxations permitted, the situation is hardly static in the state, and 'partial' contract farming is possible. The two crops selected are potato, a vegetable, and aonla, a fruit. The area and production of potato are largest in Agra among all districts in Uttar Pradesh. No emerging channel was operating in Agra, and so Sadabad block in Hathras, a neighbouring district, is selected for study. For aonla, Pratapgarh district, the largest producer in the state, is chosen, and the sample is drawn from Sadar block where producers sold to a local processing unit called Satkar Food.

The majority of workers in Agra, Hathras and Pratapgarh districts are engaged in agriculture. The districts are densely populated, poor and barring Agra they are highly rural in character. Scheduled caste communities make up a little more than 20 % of the population in all the three districts.

National Horticulture Mission Scheme has helped in exploring the horticulture potential of Uttar Pradesh since 2005–2006 by providing support and materials. A regionally differentiated cluster approach is taken for development of horticultural crops. The region has a comparative advantage in horticulture. Four agri-export zones (AEZs) are established for the promotion of mango and potato for exports. The UP State Horticultural Co-operative Marketing Federation is organizing the horticulture producers as self-help groups or primary societies for facilitating marketing. Agra and Hathras fall in AEZ for potato. PepsiCo, ITC and Mahindra ShubhLabh are agencies that supply inputs and technology with a lab-to-field approach and also facilitate marketing of potato. Partial contract farming is in practice for potato and garlic. The State Horticulture Missions promote commercial fruits and vegetables with subsidies for drip and sprinkler irrigation. There are over 200 cold storages in the state. Small farmers account for, respectively, 98 %, 90 % and 80 % of landholdings in Pratapgarh, Agra and Hathras, but the region is endowed with 70 cold storages and a high irrigation intensity.

Potato, wheat, mustard and gram are major rabi crops in Agra which has a semiarid climate but a high irrigation intensity of 90 %. Mahamaya Nagar or Hathras district in western part of Uttar Pradesh is basically agrarian in character with wheat, oilseeds and potato as the main crops. Pratapgarh district in eastern Uttar Pradesh is highly rural and also poor. Of the total land, 75 % is under agriculture which is mostly irrigated. Wheat, paddy, pulses and potato are important crops, as are aonla, mango and guava. National Horticulture Mission launched in 2005 in the district seeks to establish aonla nursery and marketing infrastructure. Thus, cropping pattern is more diversified in Pratapgarh, but all the three districts covered in this study are marked by small farms, ample irrigation and a rice-potato-based production pattern.

7.1.10 Sonapat, Gurgaon and Kurukshetra Districts in Haryana

Haryana is known for its green revolution, its world famous basmati rice as well as its high production of rice and wheat. Recently, the state faces troubles arising from its rice-wheat rotational practices, soil degradation, receding water table and pollution of ground water. The promotion of horticulture is both a means to look for a solution to these post-green revolution problems and a response to the opportunities created by reforms. The affluence of Gurgaon and its location in the national capital region (NCR) create demand and scope for commercial cultivation of fruits and vegetables to flourish. Ambala leads the state in the share of cropped area devoted

to horticultural crops, but the districts Sonapat, Kurukshetra, Gurgaon and Yamuna Nagar have considerable area under these crops. A large variety of these crops including flowers and aromatic plants are grown along with fruits and vegetables. The state has partially reformed its marketing system. We could locate two cases where an organized private retailer purchases products from farmers.

Haryana emerged as one of the most progressive states in the wake of economic liberalization in India. Its proximity to the national capital New Delhi, its earlier record of success in agriculture and industry and the rise of the software industry are special components of the success. Haryana therefore would provide an interesting case for any study that is related to economic reforms.

All the three districts selected for sampling are close to Delhi and are well connected. Very hot summers, very cold winters, mild monsoon and low to moderate rainfall characterize the climate of the region covered. There are however subtle differences underlying the commonality and reflecting the greater urbanization of Gurgaon.

Sonapat, carved out of Rohtak district in 1972, is located in the south-east of Haryana and in the north of Delhi, the capital of India. Lying on the Punjab plain, the district is uneven in terrain and is drained by river Yamuna and its tributaries. The district is highly irrigated by both canals and tube wells, but this privilege comes with serious water problems like ingress of brackish ground water and waterlogging of land. The soil is rich (sandy or loamy) and crop productivity is high. Cereals and vegetables are the main crops.

Kurukshetra, a district known for its mythological and religious links to epic Mahabharata, is more endowed. Lying north-east of Haryana, surrounded by Ambala and Patiala (Punjab) districts, it has more fertile and alluvial soils, plain lands and ample irrigation facility based on tube wells. The productivity of agriculture is high, and the main crops grown are cereals, fruits and vegetables.

Gurgaon, located in the southernmost region of Haryana and within the national capital region (NCR), is close to Delhi and is highly developed today. The natural topography of the district is diverse and irregular with hills and ridges arising from Aravalli Mountains. It is semiarid with low rainfall, and even the water holding capacity of the soil (kankar) is poor. Haryana has no independent source of water and is mostly dependent on neighbouring states, though several lakes and seasonal streams hold water and have formed a lifeline for the region. In general the state has to focus on water conservation and efficient allocation. In fact, water use planning for Gurgaon becomes a component of the National Water Policy of 2002 in India. Other than cereals, pulses are important crops in Gurgaon.

All three sampled districts are infrastructurally endowed and well connected. The population density is high (about 600). Scheduled caste population accounts for 11–20 % of the total population. Gurgaon differs from Sonapat and Kurukshetra in having a higher urbanization (only 30 % of the population is rural as compared to 69 % and 74 % in the others as of 2011) and an elevated level of nonagricultural land use (69 % area against 73 % and 89 % in the other two) and a larger share of nonagricultural workforce (60 % compared to 47 % and 53 %). Literacy rate is 63–73 % in the three districts. Nearly complete irrigation of land, intense use of

fertilizers and machines and dominance of cereals are features of the district's agriculture, though cropping intensity is relatively low in Gurgaon at 1.4. Kurukshetra and Gurgaon have five regulated markets each and Sonapat has two. The share of total crop area under horticulture crops is 3.3 %, 2.63 % and 1.8 %, respectively, in Kurukshetra, Sonapat and Gurgaon.

7.1.11 Jalandhar and Ferozepur Districts in Punjab

Punjab is a leading agricultural state in India but specialized only in grains. Agriculture is dominated by large farms and cereal production. On account of the climatic conditions, Punjab is not a very important producer of horticultural crops, but policy is probably an added historical force to reinforce the emphasis on cereals. The reforms taken up by the state in the 2000s partly addressed the need to correct this imbalance. Contract farming is promoted especially with this objective, although reforms are partial until now.

National Horticulture Mission is implemented in Punjab to promote the production of fruits and vegetables as part of a drive towards diversification. As a result the area under both fruits and vegetables increased over the last decade. The state today accounts for 1.9 % and 2.6 % of fruit and vegetable production, respectively, of the country. Potato is the most important vegetable in the state (45 % of vegetable area). While citrus fruits are among important fruits in the state, kinnow mandarin occupies a prominent position with respect to acreage and production. It is now felt that there is considerable potential of developing the horticulture sector in agriculture and promoting food processing such as production of tomato paste, potato chips and juices.

The study districts Jalandhar and Ferozepur, lying on the border with Pakistan, are constituted of intensively irrigated central plains of the state lying between the Beas and the Satluj rivers. Together, the two districts cover nearly 17 % of the state's geographical area. Both districts are endowed with plain and alluvial soils, but the presence of light soils and brackish ground water has been a hindrance to agriculture in the eastern side of Ferozepur. The climate is largely dry but rainfall occurs in the monsoon season July to September (70 % of total) as well as in the pre-monsoon months from thunder showers and in the post-monsoon season from western disturbances. Summers are hot and winters are freezing.

Jalandhar is more densely populated (746 per hectare) than Ferozepur (329 per hectare) and also more urbanized (48 % of population against 26 %). Agriculture remains the single most important sector in the state, but over time a decline of importance of the sector is experienced. Both districts, being endowed with irrigation and using more fertilizer (502 kg per hectare and 410 kg per hectare, respectively) than most parts of India, register high crop productivity. Agriculture is also highly mechanized, and so the electricity consumption of agriculture is high. Although both districts are highly irrigated, more than 98 % of irrigated area is served by ground water in Jalandhar, whereas over 44 % of the area in Ferozepur is

served by government canals. Over 80 % of the geographical area in the districts came under cultivation. Forest area coverage was more at 9 % in Ferozepur than in Jalandhar (2 %) where nonagricultural land use was more.

The average holding size is fairly large at 4.6 ha in Jalandhar and 6 ha in Ferozepur. Therefore, the largest share of holdings belonged to the medium holding class (65–67 %), but the share of small and marginal holdings at 17 % and 25 % in Ferozepur and Jalandhar, respectively, is substantially low compared to the all-India picture. In both districts wheat followed by rice claims the largest share in the cultivated area, together constituting over three fourth of the area. Fruits account for a paltry 0.35 % of the area in Jalandhar and only 3 % in Ferozepur, while the share of vegetables is higher at 5.5 % in Jalandhar but less than 1 % in Ferozepur.

7.2 Markets and Prices

Under the regulated system of marketing, India has institutions for wholesale marketing and retail distribution. These markets have developed by state action or have evolved sometimes even over centuries. In many cases they are simply built up by the authorities at various vintages. Agricultural prices (collected through primary studies) have been central to the Indian government's policymaking for many years, and resultantly a long-standing system of market intelligence is in place. The system for market statistics is however refined over time in terms of collection, validation and dissemination and through occasional reviews.

The prices are generally categorized as wholesale prices and retail prices in simplistic terms, though there are further layers of subcategories that may not be fully reflected in public data. In many cases, as in this study the product actually may not reach the user via the regulated market or the wholesaler or even the retailer. The regulated marketing, as mandated by legislation, is not the actual practice in all parts of the country. Parallel and alternative channels become more prevalent depending on the suitability of these channels to the physical and socio-economic reality of the cases and the limitations and level of supervision of the regulated channels. Also, the price data reported is only statistical in nature, but being in reality multiple in dimensions, they are not amenable to clear specification. A manual on agricultural prices is provided by the Indian Council of Agricultural Research (Tyagi et al. 2005) explaining the systems that define India's agricultural markets and prices.

In recent times, the marketing system is undergoing vast changes that in fact provide the basic motivation for the current study. This has created new institutions of marketing that becomes the subject matter in emerging channels. Such institutions may involve private companies, NGOs, non-profit organizations promoted by the government or farmers' collectives, and some may not even necessitate a physical market space at all but may call for a cyberspace only. Some details of marketplaces that form part of the transactions investigated in the subsequent

chapters are discussed in sections “Crops Covered Under Market Channel Studies: Fruits” and “Crops Covered Under Market Channel Studies: Vegetables” of Appendix 2. However, these details are based only on our own field reports when available.

Chapter 8

Selling to Corporate Marketing Intermediaries

Marketing is a specialized economic activity with a fast-developing scientific discipline. That marketing is changing to a professional function from a culture is evident in several sectors of the Indian economy. Due to their lack of exposure, training and resources, the traditionally registered traders operating as individuals in supply chains of agricultural products failed to keep up with the developments in their own vocation. Their exclusively assured rights in the regular marketing channels also discouraged them from modernizing their activities and investing in marketing for meeting any competition. The amendment of the APMC Act in India, by allowing private corporate sector to enter the market for agricultural commodities, opens up a door through which expertise and knowledge developed on marketing function can flow in and benefit the farm sector.

With the new legislation, several organized bodies that already have marketing experiences and established network with farms in different other capacities are making forays into this uncharted territory of selling marketing services to farmers. They offer to purchase raw food items at the time and place of producer's convenience rather than in the rigidly specified premises of the regulated markets. They are generally not owners of distribution outlets but act as the bridge between the producer and traders in more advanced supply chains in the traditional channels. Not only do they convey an added option to the seller but, by dint of their potentially more efficient operations, promise to make agricultural production more lucrative. Training, skills and continual learning in this field of marketing form the foundation of their existence.

In Himachal Pradesh, we have studied apple producers who have shifted from commission agents and preharvest contractors to a corporate marketing agency who is already known for creating various other support services for agriculture. Similarly, in Maharashtra, a company traditionally engaged in input supply to farmers has diversified into marketing of onion and pomegranate. Finally, in Madhya

Pradesh, we study the changes brought by a modern electronic technology-based marketing platform offered by a leading company that also has a historical association with Indian agriculture.¹

8.1 Data and Methodology

All the three states studied, namely Himachal Pradesh, Maharashtra and Madhya Pradesh, have amended the APMC Act to launch reforms. However, since the corporate market intermediation (CMI) model is only at an inception stage, the sampling design was strongly restrained by the actual presence of the relevant emerging channels. As in other states, it was planned that each investigating centre would study marketing of two crops of horticultural nature. Lists of participating farmers would be prepared based on information from the corporate agents and local authorities, and the samples would be drawn at random giving representation to different holding sizes. In practice, some modifications are unavoidable as discussed below. Random samples of farmers operating in a common traditional channel in the same area would also be drawn for comparison, and the farmers selling in the traditional channel are considered as non-participants.

In Maharashtra, the sample is collected from Satana Taluka in Nashik district where one vegetable crop, namely onion, and one fruit crop, namely pomegranate, are studied. We treat the sales by farmers to a company named Deepak Fertilisers and Petrochemicals Corporation Limited (DFPCL) as participation in the relevant CMI channel for both crops. Since the channel is yet in its infancy, its acceptance is extremely limited, and we could locate only 17 farmers who dispose their products in this channel.

The government in Madhya Pradesh has only partially amended the APMC Act. The investigating centre in Madhya Pradesh could not identify two crops, and, in fact, not even one horticultural crop for any emerging channel could be found. It was decided that only one crop, i.e. soya bean, would be studied. Soya bean is actually an oilseed crop rapidly gaining importance in the country. The bean itself is also cooked as a vegetable or a legume to be eaten with staples optionally after preliminary processing (nuggets). Both soya bean oil and nuggets are gaining popularity for their health benefits, Sehore block in Sehore district in the state is the study area and the much discussed ITC e-Choupal is the intermediary in the emerging channel studied.

In Himachal Pradesh, apple, the main commercial fruit crop in the state, is selected for study. The sample is drawn from the Rohru block in Shimla which has the maximum area under apple in the state. The intermediary is a marketing company named Adani Enterprises. Sample details are given in [Table A.15](#).

¹ Investigation for collecting primary information is conducted by the Agro-Economic Research Centres (AERCs) in the Himachal Pradesh University, Shimla; Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, Madhya Pradesh; and Gokhale Institute of Politics and Economics, Pune, Maharashtra.

8.1.1 Definitions and Methods

While measures of farmer prices and costs are sample average in all cases, addressing the terminal price is a more complex task given that a product can have multiple uses and the target destination can vary widely. The choice of the terminal user therefore needs to be based on the most common destination of the product as well as the concern to maintain consistency between the two channels under comparison.

In Maharashtra, the company buys from the farmer. The terminal users considered by us are the malls Star Bazaar, More and Big Bazaar² that finally sell to the consumer. This truncation of the chain short of the customer (at the mall gate) is impelled by the fact that considerable value addition is embedded in the shopping conditions created artificially in the malls for which only a willing customer with options pays. Nevertheless, it may be conceded that the limitation of the approach may be a source of underestimation of the terminal price, market inefficiency and price magnification.³

In Himachal Pradesh, the marketing channel starts with the purchase of apples through collection centres of the buying company, but the target destination is much more indeterminate. A large variety of channels of both the traditional type (such as via different forwarding agents or commission agent or retailers) and the emerging type (such as via Adani, the Railway Board, the state enterprise known as HPMC or private processors) coexist in the sample area. Since much of the procurements made by Adani actually reaches the traditional channel at some intermediate point (as discussed in the next section), wholesalers in Delhi's Azadpur market are considered as the terminal user of apples for both channels.

The soya bean producer in Madhya Pradesh disposes of products through the traders in traditional channels and alternatively through the e-Choupal. It is soya bean oil and other processed products that the ultimate consumer buys. Purchase of soya bean grains by consumer is rare in the surveyed area. The processor is therefore considered the terminal purchaser of soya bean produced by farmers in both channels.⁴

² More is a pan-India retail chain owned by Aditya Birla Groups, Star Bazaar is a unit of Trent Hypermarket Ltd. owned by the Tata Group and Big Bazaar is possibly the largest hypermarket chain started by Kishore Biyani and owned by the Future Group.

³ Our field reports suggest that the margin at the terminal level (mall) is between 10 % and 20 % in the outlets, but products can be also sold at a loss or under a 'reduce to clear' code depending on demand and product quality at the time of sale. The DFPCL does not have its own sales outlets.

⁴ Our investigation found that marketing of soya bean stops at the door of the processor. No retailer in the area was found to sell soya bean grain to the consumer. Most of the grain was converted into soya oil and soya cake. Soya biscuits, flour, nuggets, sauce, paneer and soya milk and other processed products that reached the consumers. Thus, the processor was treated as the final consumer of soya bean grain in the study.

8.2 Reforms and Marketing Channels in Sample States

All three states under study may be perceived as positive to reforms because they have amended the APMC Act. Maharashtra amended the Act in 2006 and since then has become an attractive ground for several private players and many new models to operate. Renowned as a financial and industrial centre of the nation, Maharashtra is a progressive state in many respects, and Nashik district in the state is known for growing a variety of fruits and vegetables. Onion is a major cash crop of the sample district. It is also an important product from a national perspective both in the domestic economy and in the international trade of the country.

Madhya Pradesh in its present form (it was bifurcated to Madhya Pradesh and Chhattisgarh in 2000) remains largely an agricultural state. The selected district Sehore devotes large areas to the cultivation of pulses and is a major producer of soya bean. Madhya Pradesh is mostly seen as a foremost reforming state in India, though it has only partially amended the APMC Act in June 2003.

Himachal Pradesh is a hilly state with the usual constraints but is also a progressive one. It has limitations in developing its industries, so that agriculture remains the prime economic activity though tourism is also strength. The state repealed its old marketing Act and passed the amended Act following the guidelines provided by the Central Government in 2005. A number of private and organized players now operate in marketing agricultural products, in particular fruits and vegetables for which the hilly state is reputed. Shimla, the study district, houses the state capital. Farming is the main occupation in Shimla which is a mountainous district, although the slopes impose rigid restraints on the ways of farming. The following sections describe how the selected CM1 channel operates (see Fig. 8.1) in comparison with the traditional channel.

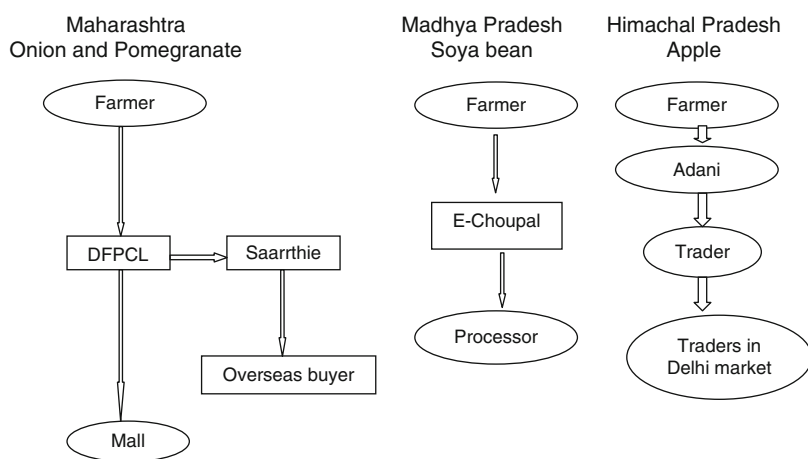


Fig. 8.1 Flow of products in the supply chain in the emerging channels

8.2.1 *Marketing of Onions and Pomegranates in Nashik: How the DFPCL-‘Saarrthie’ Operates*

Deepak Fertilisers and Petrochemicals Corporation Limited (DFPCL) was initially specialized in manufacturing fertilizers, but later it diversified through its Agri-Business & Farm Solutions (ABFS) division into agricultural extension. The Agri-service division of DFPCL is known as *Saarrthie*, whose main aim is to provide a ‘complete basket of solutions and techno-commercial services’ to farmers. In Maharashtra, the DFPCL has seven *Saarrthie* centres that are primarily involved with extension services in Madhya Pradesh, Maharashtra and Gujarat. A farmer can be enrolled as a member with a valid photo identity card on payment of a lifetime membership fee.

Entering into marketing of farm products, the company now appears engaged with agriculture both in backward and forward linkage activities. With its expertise, this organized marketing intermediary serves in providing necessary linkage between the farmer and the modern retail outlets. The DFPCL does not have its own retail outlets although it has future plans in that direction.

The *Saarrthie* provides farmers necessary marketing links with terminal buyers located both in India and abroad. The farmers are aided to acquire compliance with international market standards necessary to compete in export market. The port and storage infrastructure owned by the company seeks to generate resilience to price volatilities. The *Saarrthie* has its own specialized processing facilities and linkages with other processing industries and can provide technical guidance to prevent spoilage. While facilitation of exports is a central domain, the company also attempts to help farmers in marketing farm produce within the country, ‘to ensure better price to the farmers, to monitor supply and to help maintain high quality of products right from procurement till the final packaging’. It procures fruits and vegetables, packs them, transports them in refrigerated trucks and sells them to exporters and organized retailers operating in malls and supermarkets. Its customers include Aditya Birla Retail Ltd., Metro Cash and Carry, TESCO India and Future Value Retail Ltd. besides numerous exporters who further pass on the products to final consumers after required value addition at that level.

The regular supply chains for the same products in the region are dominated by unorganized traders whose procedures are conventional. Farmers bring their produce to the regular markets through agents to sell it to the highest bidding wholesalers through commission agents. The wholesalers then transport the produce to retailers in distant markets who finally sell the produce to the consumers. In the sampled channel, the farmer, the commission agent, the wholesaler, the retailer and the consumer are the key links although other chains with multiple wholesalers (local and distant) and sometimes a processing company’s representative also operate in the region.

With huge turnovers in onion in the region, big traders abound in the market. Onion is also an important export item, and so the wholesalers often sell to exporters for onion to reach overseas consumers in foreign supermarkets. In sum,

the market in this region is large and fairly developed. The pomegranate market finds the presence of a number of processors participating in the auctions, but only relatively poor-quality pomegranate is usually sold to processors who are in the juice business. The commission agent is the most important agent acting on behalf of the farmer, responsible for assuring the producers of the best prices possible, but the auction price is found to vary widely. The APMC market in Satana to which our sample farmers sell is fairly endowed with required facilities.

8.2.2 The Adani Marketing Group and Regular Trading in Himachal Pradesh

Apple sold in Himachal Pradesh traditionally passes through a number of hands before reaching the consumer. A fleet of traders hailing mostly from Chandigarh and Delhi (Azadpur) markets mostly ship apple to distant places. Only a part of the produce is sold in nearby Solan market.

Recently, some private and public enterprises have started providing organized marketing services. Adani Enterprises, a large Indian business group with diverse interests, is engaged in providing marketing services to apple producers in Himachal Pradesh, where it has set up integrated storage, handling and transportation infrastructure for handling fresh produce under the registered name of Adani Agrifresh Limited. The group's managers have interacted with producers across the state and signed agreements with thousands of farmers for direct procurement.

The Adani Group has emerged as one of the biggest traders in the district of Shimla. In its *modus operandi*, it enrolls certain agents in the apple-growing areas, who in turn enrol members among apple producers who would be willing to sell the produce to the group. The members are supplied with plastic crates free of cost for collection of apples. The collected apples are brought to Adani stores. Like DFPC in Maharashtra, Adani too has no outlet at the time of sampling and does not sell apples in the retail market.

The members were in principle selected from high-elevation apple-growing areas in the district to ensure high quality, but in actual practice, the catchments became diffuse due to popular demand. Although business interests require that the company procures apples selectively, due to popular pressure as reported, the Adani Group currently has to procure all grades of apples from producers but keeping only 'A' grade or highest-quality apples to be marketed in distant markets; the remaining apples are sold to local traders who further dispose apples through traditional channels. Thus, till now the two channels are not sharply demarcated because the emerging model also has to accommodate conventional intermediaries like 'mashkhor' and the retailer in the chain and in fact it coalesces with the traditional channels at some point.

The traditional channel in the operating area is manned several licensed intermediaries who have nearly no attention for quality. The infrastructure in the regulated market in Himachal Pradesh is poor. Long delays in marketing and exorbitant margins are major weaknesses reported. Besides, farmers also consider the market regulation to be working unfairly against their interest. Thus, the functioning of the regulated market is far from what can be desired. In fact, small farmers who feel more deprived than the others do not find the RM useful and prefer to sell directly to consumers in the local markets.

Whereas Adani in the emerging channel provides crates for carrying apples, traders in the traditional channels do not give to farmers any packing material which is a serious component of apple marketing. The product has to pass through many hands in the traditional channel before reaching the terminal user, giving rise to considerable postharvest losses. Preharvest contractors, wholesalers, commission agents (mashakhors) and retailers are some of the intermediaries in the chain we have studied.

8.2.3 ITC and Its e-Choupal in Madhya Pradesh for Marketing Soya Bean

The e-Choupal initiative of the large company ITC Ltd., earlier a tobacco giant but today a highly diversified company, is well documented and is a popular case study in business schools. The initiative which began in the year 2000 with soya farmers in Madhya Pradesh⁵ is said to have enhanced the competitiveness of Indian agriculture by providing farmers with access to the Internet.

The e-Choupal acts as a wholesaler through which the product passes from the farmer to the next buyer. The *sanchalak* who coordinates the sale is a local person who has a computer with Internet connection with the support of which he/she tells the farmers the prevailing price of products graded by the Choupal standard a day in advance. Although farmers are free to sell to the best buyer through the e-Choupal, the company (ITC) also purchases products from farmers. It is also launching a chain of rural malls, and Sehore already has one on Indore-Bhopal highway, but till now the company is not involved in retailing. Computerized weighing facilities are available to the sellers along with ATM banking in the market popularly called the Choupal. There is no taxation or fees involved in the transactions. The Choupal has good infrastructure in the form of market yard, canteen, parking space and drinking water supply though there is no arrangement for staying overnight and no warehousing facility. In the Choupal, the minimum prices are fixed the day before

⁵ The Government of Madhya Pradesh gave permission to ITC for purchasing soya from growers in 2004.

sale. ITC's vast experience with agriculture is a strong advantage in the operation of the Choupal.

As compared to the Choupal, very few facilities are available in the regular market in the region, except that fair prices are ensured in auctions supervised by the *mandi* committee which is democratically elected regularly. Development in the regulated market too has progressed as competition built up between the channels. Computerized weighting is also now available in the *mandi* though farmers even today evince little faith on the facility. ATM and other banking facility are also available, and infrastructure improved in the regulated market after the reforms. Thus, the traditional marketing system, faced with competition, is also showing dynamics. The buyers in the *mandi* of soya bean are mostly processors, and our select channel consists of producers, wholesalers and processors.

8.3 Marketing Performance

The corporate market intermediation (CMI) channel is found to operate more efficiently by reducing marketing costs and margins, the only exception being the onion markets in Maharashtra in which the ratios of the gross market cost (inclusive of margins) to both the producer rupee and the consumer rupee are more in the emerging channel than in the traditional channel (Table 8.1).

Among the four cases reported, the CMI channel has delivered the highest efficiency gains in pomegranate in Maharashtra where the ratio with respect to farmer rupee is only 0.34 followed by soya bean in Madhya Pradesh at 0.64. However, the gross marketing cost incurred per farmer rupee is least at 19 paise in Madhya Pradesh, followed by 39 paise in Maharashtra for pomegranate, 46 paise in Himachal Pradesh and Rs 1.31 in Maharashtra for onion in the emerging channel.

The terminal user price was between 1.2 and 2.3 times the net farmer price in the emerging channels under study. It is nearly same as the corresponding traditional channel in the case of onion in Maharashtra⁶, but in all other cases, it is higher in the traditional market. However, despite the multichannel diversion in Maharashtra, marketing scales outweigh those in the traditional channel in the state, and the scales of marketing (over Rs 1 million and Rs 3 million for the two crops) are large.

⁶ Note that the terminal price is the 'mall' price and the price magnification could be higher in the emerging channel if the actual consumer price were taken.

Table 8.1 Marketing efficiency in the corporate market intermediation channels

State		Himachal Pradesh	Madhya Pradesh	Maharashtra	
Crop	Unit	Apple	Soya bean	Onion	Pomegranate
Marketing scale	Rs'000	619.83 (0.88)	33.64 (0.42)	1,187.67 (1.71)	3,257.9 (3.16)
Total farmer price	Rs//'00Kg	4,427.79 (0.65)	1,910.00 (1.03)	694.00 (0.98)	6,100.00 (1.60)
Net adjusted farmer price	Rs//'00Kg	4,219.00 (0.80)	1,887.80 (1.04)	694.00 (1.09)	6,100.00 (1.75)
Terminal price	Rs//'00Kg	6,172.00 (0.73)	2,242.04 (0.95)	1,600.00 (1.11)	8,500.00 (1.13)
Magnification	Ratio	1.46 (0.91)	1.18 (0.91)	2.30 (1.02)	1.39 (0.65)
Gross marketing cost					
Per rupee fetched by producer	Rs	0.46 (0.77)	0.19 (0.64)	1.31 (1.04)	0.39 (0.34)
Per rupee paid by user	Rs	0.32 (0.84)	0.16 (0.70)	0.57 (1.02)	0.28 (0.53)

Note: Figures in *parentheses* are ratios to corresponding estimates for traditional channels

Table 8.2 Implications of the channels for the farmers

State		Himachal Pradesh	Madhya Pradesh	Maharashtra	
Crop	Units	Apple	Soya bean	Onion	Pomegranate
Productivity	'00Kg/ha	140.0 (1.64)	18.9 (1.12)	350.6 (1.05)	211.1 (1.92)
Profit	Rs/'00Kg	3,552.0 (0.78)	1,888.0 (2.33)	505.0 (1.16)	5,440.0 (2.24)
Returns from land	Rs '000/ha	443.0 (1.20)	17.0 (1.21)	180.0 (1.29)	1,150.0 (4.26)
Marketing cost share	% Farmer cost	18.8 (0.28)	2.2 (0.75)	0.0 (0.0)	0.0 (0.0)
Dependence on channel	% Marketed	97.3 (1.01)	95.9 (0.99)	18.7 (2.56)	90.4 (14.35)

Note: Figures in *parentheses* are ratios to corresponding estimates for traditional channels

8.3.1 Do Farmers Gain?

Farmer's share in the marketing cost is eliminated only in Maharashtra (Table 8.2). In Himachal Pradesh where farmers get some support as storage or packing material from the buyer, the marketing cost is reduced. In Madhya Pradesh, the total marketing cost is abated in the emerging channel, but the farmer is not relieved of the marketing task as the electronic portal supports in a different manner. In all three states, productivity from land and farmer's returns from land are enhanced with the new development.⁷ In Table 8.1, it was observed that the net price received

⁷ Many other factors could be responsible for the gain.

by the farmer is more under the CMI channel in Madhya Pradesh and Maharashtra but lower in Himachal Pradesh. The two fruit crops, pomegranate and apple, bring higher returns from land than other crops sold in the CMI.

8.3.2 Do Users Gain?

Although the retail consumer price could be higher under the emerging channel, this does not mean that consumers do not gain. In reality, the consumers or terminal users in the CMI channel may be buying a higher-quality or value-added product though this is not verified in the study. These customers who in reality pay higher prices than reported in Table 8.1, visit malls and supermarkets designed for shopping with comfort and also pay for products that are sorted, graded, cleaned and packed although the option of buying from the street vendor is also available.

8.3.3 Disposal

The participating farmers in the emerging CMI channel depend completely on the single channel in all the cases except for onion in Maharashtra where only a little over 18 % of the produce is sold to the specified market and all the rest is diverted to other channels (see Table A.8 in Appendix). Rejected products are either consumed at home or wasted. In Madhya Pradesh, about 5 % of the marketed amount remains unsold in each channel, and there is no significant difference with respect to rejection of products and dependence on the specified channels.

The marketing dynamics differ between the channels in Madhya Pradesh where we found that the traditional channel brings quick cash while the farmers in the CMI channel take time to offer better quality product in order to obtain higher price.⁸ Onion is cultivated partly as a kharif and a late kharif crop in the Maharashtra region, when the product can decay fast due to the moist atmospheric conditions, but the crop is also raised in the rabi season. In Maharashtra, the product can be held back for higher prices to an extent because on-farm storage facilities (onion chawls) are commonly accessible. More than half of the respondent households selling onion and nearly 30 % of the pomegranate growing households have their own storage facility (Table A.9). In the *rabi* marketing season, storing onion is relatively easy. In the traditional channel, the farmers prefer to hold back products and sell in phases, but

⁸ In Madhya Pradesh, disposal in both channels is completed in the fifth month after harvest, but while in the traditional channel sales begin immediately after harvest, farmers selling in the CMI channel have to wait for at least a month for drying the moisture in the crop. As a result, 12 % of the product is sold in the first month and 79 % over the first 3 months in the traditional channel, but in the CMI channel, a little over half of the product is sold over the second, third and fourth months and another 13 % in the fifth month.

due to the high cost of holding stocks, distress sale is unavoidable.⁹ In the pomegranate market, market arrival takes place over a longer period (about a year), but when price is at its peak, the share of arrival is relatively less.

8.3.4 Wastage

Generally, horticultural products have short shelf life and are highly perishable, but some fruits and vegetables decay and rot more easily than others, while storage is relatively easier for some products like onion and potato over a medium-term period. Wastage can occur at the on-farm stage, storage, transit and retail. In Maharashtra and Himachal Pradesh, losses are more in the traditional channel, but in Madhya Pradesh, they are comparable between the channels. However, the marketing channel's role appears limited in all cases since a bulk of the losses takes place at the on-farm level or due to the long distances travelled. Climatic conditions, open air auctioning and inadequate storage facilities are also some of the key factors associated by the respondents with crop loss.

Onion is highly vulnerable to rainfall and humid conditions in Maharashtra, and losses occur in storage and transport of both crops. The incidence of wastage is more in the traditional channel especially because auctioning in the regulated market is conducted in the open. On-farm losses are considerable in Madhya Pradesh, and lack of farmer's storage facility is reported to be a serious drawback though losses did not differ much between the channels. Postharvest losses of apples are a major concern in Himachal Pradesh (see Box 8.1). Culling (constituting 61 % of the wastage per farm in the traditional channel and 81 % in the CMI channel) is a leading component of wastage, and together with rotting and losses in picking and grading, it accounts for 76 % of the wastage in traditional and 84 % in the CMI channels. Thus, a bulk of the postharvest losses in Himachal Pradesh is not directly related to the marketing channel. Although the overall pattern of postharvest losses is similar between the two channels, losses in transit from farm to roadhead and from roadhead to market are lower in the CMI channel.¹⁰ Interestingly, losses in handling at the retail stage in the CMI channel exceed in the traditional.

⁹ In the reference year, 24 % of the onion produced is marketed when the going price is Rs. 580 per quintal and 13 % when the price is Rs. 1,450 over a period of 6 months (May to October).

¹⁰ Transporting apples from farm to roadhead is a challenging task in the state, accomplished by various means, and often draught animals like ponies and mules are used for the purpose. The remaining journey is undertaken by road in trucks, and the time taken for the whole transit can be as much as 30 hours.

Box 8.1 Highlights from a Study by Ranveer Singh of the AERC Shimla published in Times of India, New Delhi, July7, 2004

- Poor postharvest management techniques cause 14.8 % of production losses.
- Huge losses occur while transporting apples from farm to roadhead, but these losses were less in small farms. The average loss is worked out at Rs 5,360 per farm.
- Reasons for losses include inclement weather and poor orchard management for preharvest losses and lack of appropriate packaging, safe transportation and cold storage facilities at producer and consumer markets.
- Poor field management, infection by pathogens, damages by pests, improper timing of picking mechanical damage and rough handling are other causes.
- Postharvest management at the farm level needs improvement in the state calling for introduction of modern harvesting, handling and marketing techniques.

8.3.5 Price Formation, Market Information and Preference for Market Channel

In the traditional channel, price is determined by auction which is held in the open at noontime for onion and in the evening for pomegranate in Maharashtra. In the state's emerging channel, there is no auction but the price is reported to be decided at the time of sale and not by prior contract. Price information even at the global scale is especially important as the products are national export items and are sometimes amenable to processing. Prices matched expectations in all cases in pomegranate but fell short in 8 % cases of onion. Such shortfalls were reported by 26 % of respondents in the traditional channel. The buying company purchased not only from the farmers but also from traders, and in fact, they evinced a preference for the traders who they felt adjusted for weight loss of products due to shrinkage and moisture loss.

The commission agents and traders are prime sources of timely price information for farmers in both traditional and emerging channels in Maharashtra, and such information was also found to be consistent with farmers' expectations. Personal sources are also important especially in the case of pomegranate in the CMI channel. Farmers in the traditional channel also get price information by conversing with other farmers. The government's AGMARKNET has not played any role and neither has the agents in e-Choupal.

In Himachal Pradesh, although prices are influenced by auction in the regulated markets, the merit of the mechanism is questionable as farmers have a general feeling of injustice and ineffectiveness for the reference markets where

malpractices and collusion between traders and officials are common complaints. Due to the quick decay of the product, multiplicity of its end uses and variations in its quality, selling becomes a highly speculative exercise. Purchase by Adani in the emerging channel involves no prior contract as price is decided at the time of sale. The price however failed to match the expectations in 40 % of the cases. Price information is availed from commission agents and other farmers in both channels.

In Madhya Pradesh, the price of soya bean in a particular day is usually determined with reference to the previous day's maximum price that prevailed in the regulated market. The *sanchalak* of the e-Choupal exploits the Internet facility to disseminate the price information. Thus, the regulated market remains to be important even in the presence of the emerging market. The source of price information to farmers is thus the *sanchalak* working in the village kiosks. The *sanchalaks* are also motivating agents of farmers who sell in the channel. The focal point of the e-Choupal is the interactive website www.e-choupal.com which contains not only information of prices but also information on local weather, farm techniques, soil examination, market wages, etc. Soya bean growers are mostly satisfied with the price they received for their produce. Auctions take place only in the traditional market, and ITC is one of the buyers in these auctions.

8.4 Perceptions of Farmers and Traders

The impression received from respondents who included producers and traders suggests an even competition between the channels as the traditional channel has also caught up in facilities. Except in Himachal Pradesh, no intense apathy for the traditional channel was observed, and while producers expressed suspicion that the bargaining power weighed in favour of the buyer in both channels, no particular complaint about cheating, non-fulfillment of commitments and payment delays was reported. Across the channels, the private individual traders discharge the important role of bringing price information. Although the government has also created a network for dissemination of market intelligence, no farmer reported the beneficial effect of AGMARKNET. Participants in both channels suffered the lack of many facilities but strongly felt that the state's role in maintaining roads, providing reliable weighing facilities and creating storage facilities cannot be dispensed with. The traders in either channel provided little support in the supply of inputs or credit, and such instances were reported, if at all, by participants in the traditional channel. More details follow.

8.4.1 Maharashtra

In Maharashtra, distances are more than 10 km in most cases and even exceed 50 km in some cases though farmers are relieved of the travel to the market in the

emerging channel. Both channels boast of good roads, auction supervision and cold storage and godown facilities, while the facilities of loading, sorting, weighing, packing, banking and computer are average.

Based on subjective judgments expressed, the difference in performance is not significant between the two channels in Maharashtra. The commission agent of the traditional channel and the company agent who intermediates in the emerging channel in Maharashtra are equally helpful. The DFPCL collects the products from the field, thus saving farmers of marketing costs in terms of commission agent's fee and travelling. Nevertheless, the onion price is lower in the emerging channel, reflecting the enormity of the size and power of the traditional marketing channels and their developed status. Farmers gain from selling pomegranate in the emerging market in terms of price both before and after deducting the marketing cost, and the price magnification is low among all the CMI cases reported.

Going by the large size of market and the volumes of production, there appears to be space for multiple channels to compete and complement one another in Maharashtra. Some farmers in the traditional channel however feel that the agents are biased on the side of wholesalers, implicitly collude to keep prices low and charge more than their commission on false grounds of spoilage in transit. Assured sales and high prices have both drawn farmers in the emerging channel and served to retain them in the traditional channel and thus do not make a significant difference for the choice. Proximity however is important for the choice of the traditional channel for onion growers and the superior services of the company to attract onion farmers to the new channel.

Instances of conflicts between producers and traders are rare if any, and timely payment to producers is a regular feature. Farmers have not felt they are severely cheated under any system, although there is a general lack of confidence in the agents.

The traders sell the produce to their counterparts in other markets in distant places in the country and abroad, and traders' prices are often decided over telephone. At the retail level, the emerging channel encounters stiff competition, and occasionally the retailer resorts to discounts and 'reduce to clear' sales. Retail prices in the malls are critically dependent on what rival malls charge. The DFPCL procures from both farmers and traders, quality being the major consideration for them, but on the contrary, the farmers resent their selectivity of operation.

All farmers in Maharashtra obtained credit as crop loans mostly for digging wells, but banks followed by cooperatives were the predominant lenders. The channels had little contribution in financing, with the lone exception of a few onion growers selling in the traditional channel who obtained credit for interculture operations. Pomegranates farmers also obtained input advances from traders in the regular market for buying pesticide to combat oily spot disease. Cases of defaults are few among the traditional channel farmers, but none among farmers in CMI channel and the defaults were apparently induced by production failure. Thus, the product and credit market are only mildly nested.

The traders in Maharashtra are not satisfied with marketing facilities in the APMC mainly on account of poor infrastructure and their cleanliness. Auctioning in the open in the rainy season is a common complaint. They also have a few complaints of being cheated by the farmers on quality grounds. Though trading is lucrative, it is also viewed as risky business in which possible delays, damages and losses in transit are expected. Retailers have to maintain a vigil guarding the stocks. Disposal of spoiled products sometimes at a discount is an added endeavour. Legal loopholes and the limitations of trader certification create financial problems for the market. DFPCL has its concerns about quality standards and appears to prefer traders for being able to distinguish qualitative grades in products over farmers who are not trained in that matter.

8.4.2 Madhya Pradesh

All the sampled households were located between 10 and 25 km of the market which is the regulated market in traditional channel and the e-Choupal in the emerging channel. The roads are reported to be good. In the regulated market, loading and weighing facility is reported uniformly as average; over 90 % of the respondent considered supervision of sale as average and 70 % found godown, auction arrangement, packing facility, internal telephone and banking to be average in the premises. Computer facility was not available. The facilities for weighing and packing in the e-Choupal were reported to be good in all cases.

Sixty-six percent of the farmers selling in the regulated market reported paying bribes, incurring other hidden expenses and suffering long waits, but such reports are absent among farmers in the CMI channel. The facilities for marketing were uniformly reported as good in the Choupal. The additional information gained at the Choupal also improved their farm practices and helped in other aspects of life.

Despite all the disadvantages, farmers in Madhya Pradesh who sold in the traditional channel were driven by habit, assured sales (little rejection) and a traditional lack of confidence in the organized private sector. Farmers in the CMI channel however attributed their preference to higher prices, low marketing cost and superior services of the Choupal. They had been influenced in their choice mainly by the *sanchalak* of the ITC e-Choupal. Access to farm inputs in the market precinct was another factor that attracted farmers to participate.

8.4.3 Himachal Pradesh

Transporting apples to the market in Himachal Pradesh is an onerous task for the farmers. A comparison between the two channels finds that the distance to the regulated market is more than 50 km from the sample villages, but half of the respondents reported that the conduit road was in good condition. For farmers

selling to Adani, the distance was on the average shorter between 10 and 25 km, but road conditions were described as average by all respondents.

Godowns and cold storage facilities are absent in both markets. Participants in both markets also reported facilities of loading to be mostly average, sorting and weighing facilities to be good and telephone, banking, computer facilities missing in the markets. Farmers in both channels felt that they could benefit from government support such as subsidies on grading machines, provision of all weather roads and arrangement of vehicles for transporting and opening of big regulated markets. They also wanted government intervention to enable better price realization.

Recovery in the emerging channel has not been smooth requiring repeated visits as in the traditional channel. Signed receipts are generally provided. No conflict is reported over quality, and confidence on the buyer is reported low in most cases. The reports are similar in the other channel. All the farmers took loans from banks to purchase inputs in both channels with no dependence on the buyer.

8.5 Who Participates in the Emerging Market?

There is a marked contrast in respect to the inclusiveness of participant groups (Table 8.3). Only in the case of Himachal Pradesh where the farmers in both channels are typically asset poor, those who are relatively disadvantaged socially and in terms of farm size tend to participate more in the emerging CMI channel. On the other hand, indications are contrary in Maharashtra and Madhya Pradesh where participants in the emerging channel seem more privileged in respect to social class, farm size and ownership of a vehicle. Among the three states, Himachal Pradesh can be adjudged to be more successful with the CMI model of marketing if inclusiveness is considered as the yardstick although admittedly, popular pressure channel may very well be responsible for this result. More detailed result at the state level is as follows (see also Appendix Tables A.5–A.7).

Table 8.3 Sample households (%) in market channels excluded from common privileges

States	Maharashtra		Himachal	Madhya Pradesh
	Onion	Pomegranate	Apple	Soya bean
Small and marginal farmers	8.3 (0.22)	66.6 (1.37)	88 (1.02)	8.1 (0.18)
Backward classes	0 (0.0)	0 (0.0)	24 (6.0)	16.2 (0.71)
Not owning a motorcycle	0 (0.0)	0 (0.0)	100 (1.0)	18.9 (0.60)
Not owning a mobile phone	8.3 (0.97)	0 (0.0)	0 (0.0)	21.6 (0.42)
Not owning a pump set	0 (0.0)	0 (0.0)	100 (1.0)	2.7 (0.47)

Note: Figures in *parentheses* are ratios to corresponding estimates for traditional channels

Table 8.4 Farming practices among farmers participating in corporate marketing intermediation channel

State	Himachal Pradesh	Madhya Pradesh	Maharashtra	
	Apple	Soya bean	Onion	Pomegranate
Chemical fertilizer use (Rs/ha)	14,500 (2.50)	803 (2.00)	5,625 (0.73)	13,500 (0.68)
Organic fertilizer use (Rs/ha)	12,325 (1.97)	113 (1.61)	14,061 (1.12)	32,857 (1.90)
Hiring labour (Rs/ha)	19,995 (1.15)	2,617 (0.44)	19,595 (1.07)	12,500 (1.34)

Note: Figures in *parentheses* are ratios to corresponding estimates for traditional channels

8.6 Farm Practices

Both chemical and organic fertilizers are used by the farms in either channel, though none has organic certification. Farmers in the emerging channel use considerably more of both chemical and organic fertilizers in the states Himachal Pradesh and Madhya Pradesh, but in Maharashtra, the farmers marketing through CMI use more of organic and less of chemical fertilizer compared to those in the traditional channel (Tables A.9–A.11).

Irrigation is available to all crop areas, and pump sets are used commonly for irrigation in Madhya Pradesh and Maharashtra. Drip irrigation is practised only in Maharashtra in both samples, and sprinkler irrigation is not found in any case. On-farm storage is practised in Madhya Pradesh and Maharashtra but not in Himachal Pradesh. Higher proportions of sample farmers in the emerging channel reported storing produce than in the traditional channel. Many of the sample farmers have their own storage facilities in Madhya Pradesh and also in Maharashtra. Labour hiring is more intensive in the emerging channel in all cases except Madhya Pradesh (Table 8.4) and some leasing in of land is also evident only in the Madhya Pradesh sample.

8.7 Conclusions

Corporate market intermediation seems to be serving different purposes for the farmers. While in Maharashtra where the turnover of products is large and the wholesale market is well established, this organized marketing support is useful for farmers in having access to modern sales outlets and in reaching out to a large national market, in Madhya Pradesh in addition to providing access to multiple final users (soya bean processors), the Internet-based medium helps to bring objective information to producers. In Himachal, the corporate intermediaries have provided a much needed alternative to the regulated market that was functioning poorly and unfairly.

The emerging markets are efficient in reducing marketing cost and also draw larger volumes. Farmer's share in marketing cost is eliminated only in Maharashtra and reduced in Himachal Pradesh but increased in Madhya Pradesh where no private marketer takes up the responsibility. Whether all sections of producers especially the small farmers benefit is questionable. Only in Himachal Pradesh the channel appears inclusive, but the role of popular pressure in bringing this about cannot be ruled out. Input intensity is higher in these channels though farmers derive higher returns from farming. There seems to be space for both traditional and emerging channels in the market and both provide options and informational empowerment to the farmers.

Chapter 9

Selling to Processors on Contract

Contract farming is a way of strengthening the vertical coordination in the supply chains of agro-commodities. It is expected to reduce transaction costs and ensure steady flows of raw materials that meet the quality standards required by the buyers. Once common in respect of a few exportable crops and historically associated with exploitation and uprisings in colonial India, contract farming is one of the most controversial components of the reforms in Indian agriculture. While the practice nearly went into oblivion from public discourses in the years after independence, a new chapter has been opened in recent years when contract farming is again permitted by legislation and even encouraged as an emerging marketing channel for agro-commodities, but the apprehensions linger on.

That inclusion of small farmers in this net is an exception, that too when compelled by government regulations or by the intense need for family labour (Dev and Rao 2005) is a key concern. In a compilation of studies, the average farm size in contract farming is shown (Singh 2012) to vary from 2.8 ha (BHC Agro for Gherkins) to 36 ha (PepsiCo for chillies in Punjab, HLL for tomato in Punjab, Frito-Lay for potato in Punjab). It is proposed that suitable institutions to promote coordination among small farmers are as important as the coordination between producers and processors.

Conventional theories prove inadequate in understanding price determination as products become differentiated and tailor made to suit consumer demand or processor needs in contracts. Contracts are said to generate disparity among participating and non-participating producers and create exclusive producer sections through high incidences of rejection, unmanageable entry costs and strong preferences for specific suppliers. Agro-ecologists¹ fear that input application, which becomes menu based driven by external decisions, can become intense, compromising sustainability of agriculture. The new trends in capitalism based

¹ Loss of diversity, flexibility and resilience that mark an independent farming system is a serious concern surrounding the growth of contract farming.

on prior price agreements are an early sign of the decline of the spot prices. In this study, we report on contracting in some form with processors of large multinational variety and smaller and regional processing units too.

9.1 Data and Methodology

Primary data on the emerging channel which is selling to processors on contracts is collected for the analysis. Cases of potato marketing in the Nagaon district of Assam, potato and aonla marketing in Hathras and Pratapgarh districts, respectively, of Uttar Pradesh and potato marketing in the Jalandhar district of Punjab are addressed.² For each case, a corresponding sample of farmers participating in the traditional channel is also drawn as a control case. The sample cases and sizes are mentioned in Table 4.2.

The frames are provided by local authorities (like panchayat) in the cases of the traditional channel and by the processing company in the emerging channel. Samples are drawn at random giving representation to farm size classes. Since the emerging channel has developed only in certain areas and has drawn the participation of extensive sections from the localities, the sample for traditional channel could not always be drawn from the same block. In the case of potato in Uttar Pradesh, the samples are drawn from neighbouring districts. In two of the sample cases, the buyer is the multinational company PepsiCo. Retail prices are collected from Jalandhar market in Punjab, Bara Bazaar in Assam and Agra in Uttar Pradesh.

9.1.1 Method of Analysis

The marketing channel is assessed by comparing the sample averages of participating farms with those in the corresponding traditional channels, but the task is more complex than was anticipated. In assessing market performance, the terminal price (TP) is the consumer price recorded in the traditional channels in both cases. This simplified approach is required because the final products that reach the consumer are not comparable between the channels. All the potato procured by PepsiCo is processed into *chips*, *bhujia* and similar other snacks. Aonla procured in the emerging channel was also fully used for processing with no retailer involved.

Complications also arise due to the lack of comparable data on intermediary margins and costs. Such data on processing firms are complex and beyond the scope

² Investigation for collecting primary information is conducted by the Agro-Economic Research Centres (AERCs) in the Assam Agricultural University (AAU) of Assam, Allahabad University (AU) of Uttar Pradesh and Punjab Agricultural University in Ludhiana of Punjab.

of this study. In theory, one could proxy the TP by the buyer price instead of retail price, i.e. stopping the chain at the processor gate. In that case, the TP and the producer price would be the same, and to the extent that marketing costs are borne by the buyer, price magnification is equated to unity. This would yield a trivial result given that the processor, as the only intermediary in the channel, undertakes much of the marketing functions often inseparable from processing functions. We have made a simplified assumption of a notional terminal price, which is the same as that in the traditional channel. This is explained in Chap. 4.

The results for the three cases, namely, Uttar Pradesh-Potato-Pepsi (UPP), Assam-Potato-KSP (APK) and Uttar Pradesh-Aonla-SFP (UAS) and Punjab Potato-Pepsi (PPP), are reported in the following sections where Pepsi, KSP and SFP are processing companies operating in ways described in the next sections.

9.2 Sample Products and Regions: A Background

Potato, grown widely in Indian states, is known to be rich in energy, protein, vitamins and minerals. It is also attractive as a raw material of many processed foods and snacks, many of which can be traded commercially. Some of the leading food companies in the world have generated widely accepted brands for potato-based food products. Potato is a short duration cash crop grown in the rabi (winter) season in India, Uttar Pradesh being the largest state in terms of area cultivated. Its cultivation is also promoted in Assam where the soil is suitable and the crop can be raised organically too. The products being perishable over a medium span of time, storage facility is crucial for the success of potato farming. Aonla is a nutritious product (vitamin C rich) and is used for medicinal purposes as well as for manufacturing cosmetics including hair oil. The crop is grown in medium-sized trees and harvested in autumn. Uttar Pradesh is the largest producer in India.

9.2.1 Assam Sample

Selected for studying potato marketing is Nagaon district in central Brahmaputra valley which has ample rainfall (1,200–2,200 mm) but dry and cold winters. Nagaon is primarily agrarian, with a large proportion of smallholding farmers raising mostly paddy and sugarcane. Wheat and mustard are other crops grown in winter. Potato is a main commercial crop in the district. Nowadays, sugar-free potato is being cultivated in 19 villages of Nagaon on a buy-back arrangement with processors. Raised mostly as a single crop, the yield of potato was until recently lower in the district compared to the state average but with extension support from the Agricultural Research Station in Shillongunj near Nagaon, the yield has improved significantly.

9.2.2 *Uttar Pradesh Samples*

Agra district in Uttar Pradesh (UP), also studied for marketing of potato, has a semiarid climate but a high irrigation intensity of 88 %. Potato, wheat, mustard and gram are major Rabi crops. The districts Agra and Hathras are covered under the State Horticulture Mission (SHM) as agri-export zone marked for potato and garlic. The SHM also promotes cultivation of commercial fruits and vegetables with subsidies for drip and sprinkler irrigation. UP State Horticultural Co-operative Marketing Federation organizes horticulture producers as user groups/self-help groups/primary societies for facilitating marketing of perishable produce. With no emerging channel observed to be operating in Agra, Hathras district, now renamed as Mahamaya Nagar, situated close to Agra in the western part of Uttar Pradesh, is chosen as the study area. It is agrarian and highly irrigated with wheat, oilseeds and potato as the main crops. *Chipsona* is a lucrative and popular variety of potato. There are more than 213 cold storages for potato in Agra and 70 in Hathras district.

Pratapgarh district, in eastern Uttar Pradesh, selected for studying the marketing of aonla, is highly rural and also poor. Seventy-five percent of the land is under agriculture, a large part of which is irrigated. Farm size is small with 86 % classified as marginal holdings. Wheat, paddy, pulses and potato are important crops, as are fruit crops aonla, mango and guava. Aonla nursery and marketing infrastructure are promoted by the National Horticulture Mission launched in 2005 in the district. Aonla, a fruit known for its nutritional value and for medicinal properties utilized in Ayurvedic medical formulas, is a major horticulture crop in Pratapgarh district in UP. Banarasi, Chalaiya and Kanchan are varieties grown in the region in the sandy-loam and alkaline soils of the region.

9.2.3 *Punjab Sample*

Potato is the most important vegetable in the state of Punjab, although in India the state is a minor producer ranking only after Uttar Pradesh, West Bengal and Gujarat. Jalandhar, Hoshiarpur, Kapurthala, Ludhiana and Bhatinda comprise the main growing regions accounting for over 66 % of the area under potato in Punjab. Jalandhar, the leading district, accounting for 23 % of the area, is an irrigated river plain with an impressive level of urbanization. Input intensive methods, high cropping intensity and large farm size (5.4 ha) mark agriculture in the district.

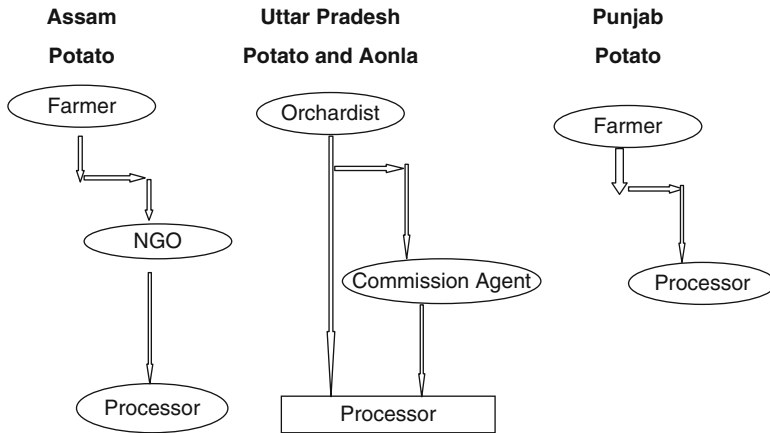


Fig. 9.1 Flow of products in the supply chain in the emerging channels

9.2.4 How the Channels Operate

As part of an agribusiness policy to link farmers with the market, contract farming is promoted in many developing countries. The most familiar model is the company-farmer agreement, but other variants involve the intermediate participation of government and non-government agencies, other private companies and even traders. A complete contract is in fact an extreme case in which the contracting firm supplies and manages all inputs and the farmer becomes a mere supplier of labour and land.

In India, by coming together in contract with the same buying firms, small peasant farms overcome scale diseconomies and gain viability. For effective operation, this however requires the institution of producer association, producer companies or specialized NGOs to provide knowledge input and facilitate negotiations. The cases reported in this study include one in which an NGO intermediates but no producer cooperative or companies are observed (Fig. 9.1).

9.2.5 Contracts with Processors Among Potato Growers in Assam

It is already mentioned that the amendment in APMC Act has posted a new beginning for organized marketing in Assam, a partially hilly north-eastern state of India where the regulated markets had been highly dysfunctional despite earlier legislations. Low marketed surplus and unchecked malpractices make selling in these markets unviable and encourage trading outside the prescribed premises of the yards. Legislation now allows contract farming in Assam. Contract farming

under public-private partnership, commonly called PPP, is gaining popularity with producers of commercial flowers, potato, ginger, orchids and even high-value rice.

Contract farming of potato crop in the Nagaon district of Assam is intermediated by a non-government organization (NGO), known as, Bengena-Ati Surovi Gram Vikash Samity, that has made an agreement with M/S Kishlay Snack Products (KSP) a company registered in the state. This buy-back agreement for potato cultivation, facilitated by the state government, is the first of its kind in Northeast India. The NGO buys special processing variety of potato seeds from KSP at a pre-agreed price and supplies inputs to the registered farmers at its own cost. The cost is adjusted when KSP buys back all the produced potatoes at a mutually agreed price from the NGO which in turn collects the potato from the producer. Selling off produce from the farmer's doorsteps saves marketing cost and circumvents the need to depend upon middlemen. While the product sold in the traditional channel gets distributed evenly among wholesale markets in several districts of the state, the sales in the emerging channel is more centralized, the contracting processor being quartered in Guwahati. Part of the produce however remains not procured. This is reported to be sold by the farmer directly to consumers in Nagaon local markets.

In contrast, in the traditional market existing in the region, a large number of intermediaries consolidate the produce at the village market and reconsolidate two to three times before it reaches the final consumers. As a result, the supply chain is very long and extensive and dominated by traders. The key intermediaries in the area are reported to be commission agents, wholesalers and retailers who operate in chains (selected) at high margins without much value addition. The restrictive and monopolistic practices reported and the rigidities imposed by the regulations lead to high cost of marketing and low prices being received by farmers.

9.2.6 Transitions in Uttar Pradesh from Trader Buyers to Processor Buyers

In Uttar Pradesh, programmes for developing the regulated markets across the state have been a continuous feature, but in 2003, when the Model Act was circulated, like many other states, Uttar Pradesh too amended the APMC Act 1964. However, the amendment was withdrawn very soon following prolonged protests, so that the Act 1964 is still prevailing in the state.

Since the UP government has not changed the APMC Act, formally, new marketing channels are not allowed to emerge until now. However, under the given regulations, some metamorphosis of existing channels is occurring. Today, PepsiCo, ITC and Mahindra ShubhLabh are important agencies supplying inputs and technology in a 'lab to field' endeavour and also facilitating marketing of potato and garlic under 'partial contract farming' agreements. Many well-known national-level processors such as Dabur, Baidyanath and Patanjali procure aonla from the region, besides the local processor studied in the present case.

At the retail level, customers continue to show preference to the traditional markets for buying fruits and vegetables. A Big Bazaar exists in Agra where higher income consumers buy provisions with no special preference for fruits and vegetable that are on display, though it is noted that the availability of special 'sugar-free' potato is an attraction. Rarely, when consumers buy aonla, traders and common retailers are the sources, but this fruit is predominantly consumed as a processed product that is sold by bigger companies.

The APMC markets are the venues where farmers dispose of their produce in the traditional marketing channel in Uttar Pradesh. The *Naveen fruits and vegetables market* (NFVM) in Agra and the *Krishi Utpadan Mandi* (KUM) in Pratapgarh visited by our project team are examples of traditional markets. Both potato and aonla sold in these markets are seasonal crops with their special uneven patterns of market arrival. Prices varied with the time and volume of arrival as well as with quality. In the retail market, the margins are high but sales are highly seasonal for fresh products. There is a lack of storage facility in the shops, leading to huge wastage especially of potato in summer.

Producers are not allowed to sale directly to buyers, and all transactions are permitted only in the regulated markets. It is indicated that a few traders, some of whom are registered companies and processing units, are purchasing agricultural produce directly from farmers through 'licensed' commission agents but there are other procedures too beyond the scope of this study. PepsiCo buys from potato growers of Hathras district through a licence in the regulated market as reported.³ Thus, with no amendment in the marketing Act having taken place, the transaction with the processor explicitly includes a so called 'agent' under the existing law. In the traditional channel, the products move from the producers to the consumers through the following individual intermediaries: commission agents, wholesalers from both local and distant markets, cold storage owners and retailers. The links of the channel could vary in actual practice.

PepsiCo provides improved variety seed (Chipsona variety) to growers on cash payments along with other inputs to produce the best quality of potatoes suitable for their purpose. The beneficiary grower has to bring potato to PepsiCo's cold storage that is staffed by the company, bearing the transportation cost. Alternatively but less frequently, the potato is picked up from the field. The quality of product is a serious consideration and rejection is common. Payments are made by cheques. The purchased potato is stored in the cold storage in Agra from where it is sent to the processing units. PepsiCo purchases potato only for its own processing units located in Patiala, Pune and Kolkata. Neither does it sell raw potatoes through supermarkets and malls nor does it serve as retailer in the marketing process.

Satkar Fruit Products (SFP) located in Pratapgarh is nationally known for manufacturing aonla products and has been in business during the last 30 years or so. The SFP provides improved techniques but not inputs to orchardists for attaining higher production and guides them on harvesting the fruit. Quality is of prime concern for this processor too who manufactures and exports aonla products like

³ See report by AERC Uttar Pradesh (2011).

murabba, sweets (burfi, laddu), candy, juice and squash. The SFP also processes vegetables like carrot. Aonla is a seasonal product, but having a substantial capacity for preservation and storage, SFP can indulge in off-season processing of aonla.

9.2.7 *Developments in Punjab*

Punjab APMC Act allowed sale of agriculture produce only by open auction in the principal or sub-market yard under supervision. The *Kutchia Arthia* was a most important agent who made the payment to the sellers after weighing and executing the transaction. The emphasis of the marketing system was on producing larger quantities only, and the system was not appropriate for fruits and vegetables for which the quality was very important.

Producers typically sell via the commission agents (or the *Kutchia Arthia*). Most commonly, the farmers sell the fresh vegetables in primary wholesale markets through commission agents to wholesalers who further sell to secondary wholesalers located in small cities and towns and local retailers. In the case of fruits, nearly 80 % of the sale starts with preharvest contractors who provide advance payments to the farmers.

In 2003, the APMC Act of Punjab was partially amended to safeguard the interest of the farmers allowing private markets and contract farming. In particular, the institutions of farming or marketing by contract is aggressively promoted in the state with the objective of developing horticulture, implying a shift from the long-standing priority awarded to foodgrains in the state. Contract farming in a number of crops has been launched such as maize, barley and sunflower. Potato is the most important vegetable in Punjab occupying over 45 % of the area and being a leading input for processing firms, it is attractive for contracting companies.

Several corporate agribusiness firms have signed memorandums of understanding to this effect with the state government. A number of models apply to induce flexibility and to attract and protect the smallholders into the net while also inviting private processors with incentives. Advanta, Pr-Agro Nutri and Mahindra ShubhLabh, United Breweries Ltd. and DCM Shriram are some of the entrants to this programme. PepsiCo was a pioneer in a most popular model between a processor and a producer in which stringent quality standards were imposed and seeds and seedlings were supplied along with technical advice by the buyer who regularly supervised the production and procured from the contracted farmers.

Our traditional channel links consist of the commission agent, the primary wholesaler, the secondary wholesaler and the retailer connecting the producer and the consumer. In recent times, PepsiCo started purchasing specific varieties of potato from farmers keeping in view their quality specification. In this process, the need for a number of intermediaries in the market is eliminated. The producer however has to transport the product to the doorsteps of the company for sale, but the incurred cost is adjusted for in the contract.

The emerging channel operates through direct sales by potato growers to the processor company with no role of any intermediary. Although the company does not make available the seeds physically, it recommends the varieties to be sown by the farmers selected for contract along with free technical know-how transmitted through company officials. At the time of maturity, the sugar content in potato is checked by technicians deputed by the company to assess the feasibility for selection. The farmers have to package the products and transport them to the processing plant at Channo in Sangrur district. In the sampled case, the company is not reported to provide any marketing support. Thus, farmers are not entirely relieved of the marketing responsibility.

9.3 Market Performance

Though the recorded producer price is higher in the contracts than in traditional channels in the cases of potato only, but since the farmer saves on marketing costs, the net price received by the farmer is more in all cases including aonla of Uttar Pradesh (Table 9.1). Total prices fetched for aonla in the emerging market are lower than in the traditional channel reflecting the direct or indirect presence of external purchasers in the traditional channel who pay higher prices than local units that are covered in the emerging channel in this study (Table 9.1). Big national companies are major buyers in the state even in the traditional channel, 70 % of the total purchase being devoted to manufacturing a health product called Chyawanprash. Thus the traditional channel is also quite vibrant in the state.

Even though potato, under contract, is directly sourced from the farmers in Assam, the presence of marketing cost is observed. This is attributable to amounts that could not be sold in the channel. The price paid by the consumer is higher than the net price received by the producer by a small margin. The price magnification is lowest in potato in UP and highest in potato in Assam in both channels and barring

Table 9.1 Efficiency of the contract marketing channel

Crop	Potato	Aonla	Potato	Potato
State	Uttar Pradesh	Uttar Pradesh	Assam	Punjab
Marketing scale Rs lakh	5.34 (1.89)	2.11 (2.13)	0.85 (1.06)	0.10 (1.01)
Farmer price Rs	588 (1.15)	533 (0.98)	410 (1.06)	520.2 (1.39)
Adjusted net farmer price Rs	588 (1.20)	533 (1.05)	358.68 (1.07)	458.7 (1.49)
Terminal price Rs	677.5 (1.00)	750 (1.00)	830 (1.02)	722.3 (1.00)
Price magnification	1.15 (0.83)	1.41 (0.96)	2.31 (0.95)	1.57 (0.67)
Gross marketing cost				
Per rupee fetched by producer	0 (0.00)	0 (0.00)	0.27 (0.64)	0.13 (0.10)
Per rupee paid by user	0 (0.00)	0 (0.00)	0.21 (0.72)	0.09 (0.35)

Notes: Figures in *parentheses* are ratios to corresponding estimates in traditional channels. Terminal prices refer to prices in traditional chain only as the processed product is not comparable in the emerging channel. 1 lakh = 100,000. Price is for 100 kg

Table 9.2 Farmers' gains in emerging channel

Crop	Potato	Aonla	Potato	Potato
State	Uttar Pradesh	Uttar Pradesh	Assam	Punjab
Productivity (100 Kg/ha)	296.0 (0.99)	249.0 (1.01)	67.3 (1.02)	264.4 (0.95)
Profit Rs/100 Kg	342.0 (1.60)	324.0 (1.22)	216.1 (1.30)	224.1 (3.99)
Returns Rs 000/ha	101.2 (1.58)	80.7 (1.23)	14.5 (1.33)	59.2 (3.77)
Dependence on channel	0.0 (0.00)	0.0 (0.00)	16.8 (1.02)	100.0 (2.70)
Adjusted net farmer price	588.0 (1.20)	533.0 (1.05)	358.7 (1.07)	458.7 (1.49)

Note: Figures in *parentheses* are ratios to corresponding estimates for traditional channels

Punjab is only modestly lower in the emerging channels than in the traditional ones. The scale of marketing per farm is considerably larger in the contract than in traditional channel in Uttar Pradesh. The marketing cost relative to producers and consumer's prices shows efficiency gain in all cases.

9.3.1 Farmer's Gain

Farmers save on marketing costs in the emerging channel. No major productivity gain is observed in the contracts with PepsiCo (the UPP case), despite the input support, but profits are higher in the emerging channels in all cases (Table 9.2). Returns per hectare are impressive at over Rs 100,000 in UPP compared to Rs 64,000 in traditional marketing, and in all cases, the contract is found more lucrative than the corresponding traditional channel because of price advantage.

9.3.2 Consumer's Gain

The final product in the contracting case is different from the raw product, and so assessment is difficult. While the consumer gains some utility from the tasty snacks produced by the processor, that nutrition loss may be inherent cannot be ruled out. Assuming the two channels have the same terminal magnification price, is least in Punjab.

9.3.3 Price Fixation and Information Dissemination

In Uttar Pradesh and Punjab, regular auctions are reported to be taking place, but the absence of systematic auctions is a serious failure of regulated marketing in Assam. In contrast to such open markets, contract prices are decided exclusively by the transacting parties based on mutual agreements made prior to production.

Thus prices are less influenced by current demand and supply forces than by expectations and bargaining strengths. Nevertheless, even in contracts, a comparison with the traditional market prices is implicit in negotiations.

Though it is generally felt that PepsiCo in Uttar Pradesh pays higher than prevailing market prices, it is evident that the producer price is deeply sensitive to the bargaining strengths of the parties. The price is also closely related with the other terms and conditions of the contracts bearing on non-pecuniary costs and benefits. In spite of the personalized and differentiated nature of price determination, it is important that the price is in keeping with prevailing prices in other transactions in organized markets. Price movements in the traditional markets therefore indirectly matter. The criticality of information on prices cannot be understated.

In Uttar Pradesh, for both products in the traditional channel, auctions decide prices. Awareness of producers about prices is found to be appreciable, but interestingly, commission agents continue to be the main source of information about prevailing market prices. In fact, participants in both channels are benefited by the information they bring. Sometimes, farmers in the contracts also make personal visits to the market to gather information. No one reported any role of the government's market intelligence initiative AGMARKNET in providing information.

In Assam, auctions are rare, even in traditional marketing. Most farmers rely on personal sources of information or information from other farmers, and about 20 % of the farmers also acknowledge commission agents for the knowledge gain. There was no role of AGMARKNET again. Awareness on wholesale prices was fairly high, but only 65 % of the farmers knew of the prices that prevailed in the retail market. The prices decided in the contracts always matched their expectations as against traditional marketing where 18 % of the sample farmers felt that the prices received are far below their anticipation.

In Punjab, the auction price in the regulated market played no role in the contracts, but nevertheless, farmers relied on information on market prices gained from personal sources and other farmers. The seller in the regular channel benefitted from the commission agents and traders, and 11 % of the sample farmers even reported receiving prices information from AGMARKNET. Although farmers in both the channels received prices generally matching with their expectations, and all were fairly informed of market movements, there is an indication that the contract prices are set by the companies to a large extent. Given that the product procured is based on careful selection with specific quality criteria, irrelevance of *mandi* prices and the dominant say of the company may not be surprising.

It may also be noted that contracting has diminished but not eliminated the farmers' dependence on trading agents. The latter maintains their control on the market because many processors continue to depend on them in some way or the other for marketing the final products. The processor of aonla has in particular expressed their displeasure over their buyers who are also traders. Concerns are heard over excessive deductions and underpricing of products, the effects of which are likely to be felt indirectly by the aonla producers too.

9.3.4 Disposal and Wastage

A little more than 95 % of production is marketed in both channels in Assam where both home consumption (though more in the traditional channel) and presale wastage of product are reported. The disposal of potato in Assam is not confined to contract sales only. Whereas nearly 80 % of the marketed amount is taken to the same channel by farmers in the traditional channel, farmers in the emerging channel marketed less than 60 % of the total through the contractual system and sold 40 % through direct marketing in local retail stores. There is however no unsold marketed quantity in any channel. Even wastage at the farmer level is less in the emerging channel.

In Uttar Pradesh, both crops are cash crops. All aonla is sold to the market and processed to *murabba* and other products. There is no report of home consumption, rejection or channel diversification in this state. The data on Uttar Pradesh did not cover details of product disposal and wastage. It is however known that potato being a semi-perishable crop cannot be stored in houses or in the open in the summer season.

Both study crops in Uttar Pradesh are grown mostly for cash. Poor storage and handling can stimulate biochemical activities that cause deterioration of quality as well as quantity. Loss of moisture also leads to weight loss. To prevent rotting, potato needs to be kept in cold storages and handled with special care right from digging at the time of harvest to retailing.

The farmers in the sample area hold potato in traditional on-farm storage or alternatively in modern cold storages on hire, but none of the sample farmers in any sample channel reported possessing on-farm cold storage. Postharvest losses are much more at the farm level (1 %) in the traditional channel than in contract. Inadequacy of storage facilities and faulty picking at farmer's level are major causes of considerable qualitative and quantitative losses, but although farmer selling to PepsiCo from the field did not feel the urgent need of investing on storage, postharvest losses are a constraint even in contract as quality of products delivered to processors is a serious consideration for the sustainability of the relation. Losses are also incurred in transportation. The perishable nature of product, distances to be covered and the travails of waiting for better prices are reported to be the major reasons for losses. While for farmers the shortage of storage is a serious issue, at the overall level, the study region is endowed with cold storage facilities, and over 80 % of the potato produced was preserved in cold storage. There is no report of on-farm processing.

In Punjab, postharvest losses arise mainly during harvest when mechanical digging of soil takes place but the damaged tubers are given away free to the labourers. Part of this loss is attributable to premature harvest in December in the hope of higher prices. Part of the ripe potato is sold in the regulated market in February, and a part is stored for future sale and seed. Cold storage facility is generally available to farmers. Handling and transport also cause product loss. The sellers in contract can avoid storage losses which are sizable to the non-participating farmers. High perishability is the leading cause of wastage

reported followed by waiting for better prices in the traditional channel. Long distances are a problem for both channels. Potato is transported to Rajasthan, Gujarat and West Bengal.

9.4 Perceptions of Stakeholders

No complaints on late payment, conflicts or transgression were made in the interviews with farmers. In the traditional channel too, there was a fair amount of confidence on the merchants, no conflict was reported and 60 % of the producers were even given receipts on delivery. The overarching presence of an arbiter in the form of non-profit-motivated intermediater in the contract is sensed in the fixation of fair prices.

9.4.1 Uttar Pradesh

The perceptions about the regulated market were mixed. The conditions of roads were mostly rated average, and distances travelled were moderate. Storage facility within the market was poor in Uttar Pradesh. Auction operations and supervisions were merely satisfactory in the traditional channels. Computer facilities were not available.

Farmers in the traditional channel sold potatoes through auction and were aware of the prevailing prices they are entitled to while of bargaining. Because potato prices are highly volatile, access to storage facility is a significant advantage, and farmers who cold-store products could also sell the potatoes at a higher price. Over half the potato produced had to be sold at the harvesting period for lack of holding power of farmers.

Producers of potato had no reproach for the commission agents' services. The traders in the APMC market under study, namely, Naveen fruits and vegetables market in Sikandra, Agra, sell potato to distant states and even to foreign countries. The licensed traders set up shops in the regulated market but are dissatisfied with the market conditions, stating narrow internal roads, poor banking facility, inadequate godowns and improper display of prices to be irritants. The market is not cleaned regularly. Generally unhygienic, it reportedly becomes extremely dirty in the rainy season.

Aonla marketing is also done through commission agents, with auctions taking place in both open and covered systems. Storage appears to be a serious problem in marketing aonla too, necessitating immediate sale after harvest. Case studies undertaken as part of the survey suggest that the farmer is unaware of prevailing prices and feels exploited by the middleman. Discussion with selected traders suggests that the licensed trader generally owns a pucca shop in the market yard and is satisfied with the marketing facilities such as lighting, water supply

and transport. Trading is done with other states like Bihar and Madhya Pradesh. The cleanliness of the market is reported to be poor. The growers paid for services of unloading, weighing and cleaning during the sale in the regular market.

Despite the shortcomings, the participating farmers of both crops are drawn to the traditional channel by the prospect of assured sales highlighting the fear of rejection in the other channel. The role of demonstration effect is also evident in the influence of friends and neighbours while choosing the traditional channel for marketing potato. In contracting, however, the superior services provided by PepsiCo is the driving force. Assurance of sales based on prior agreement again is an important consideration for choice of the channel. Contractual marketing is attractive especially for the higher prices it offers and the low cost of marketing it involves. Advantages of reduced waiting time and better infrastructural facility are also reported to be appealing features drawing the farmers to contracts.

Comparing the two channels, there is a sense of farmers being embittered by the trader's practices resulting in low farmer prices. Ironically, even in the emerging channel for marketing aonla, dominance of the commission agents in deciding prices was a source of disquiet, as expressed by the processor SFP that has to ultimately depend on traders for disposing the processed products.

Farmers complained of having to bear losses due to product deterioration during transit and weight loss due to shrinkage and moisture loss. Many potato sellers resent in particular the deductions made on these counts by middlemen while making payments, contrasting the practice with the emerging channel of contract payment in which no such deduction is made. However, part of this perception may be illusory as the model of marketing is quite different in PepsiCo contracts. Payment recovery is seen to be easier in the traditional channel. In the contract case of UPP, the quality standards are stated to be very stringent and rejection rate is high. No conflict is however reported in any of the cases.

A significant section (16 % of sample farmers) growing potatoes have taken loans from banks and cooperatives, the purpose of the loan being intercultural operations and digging wells. The buyers were nowhere a source of credit. The aonla growers did not report having taken loans at all. However, 40 % of the participants in contract marketing in potato received input advances from the buyer. The inputs received covered seeds, micronutrients and pesticides, and the farmers expressed satisfaction with the quality of the inputs. None of the farmers in the traditional channel obtained input assistance from the commission agents.

The farmers in both channels had little idea about the structure of the market chain or the final price that the consumer paid. They also had no idea of other options for selling the products, but they showed willingness to sell to the same agent again. All the farmers felt that government could help by offering a minimum support price and subsidies which is not unexpected. Greater public involvement in marketing, provision of cold storage facilities and support for export promotion was desired as interventions. The complaints surrounding the emerging channel concerned high quality standards, high rejection rates and lack of dependability of the channel. In particular, the government can contribute substantially to reduce losses by strengthening the cold storage and refrigerated transport facilities.

9.4.2 Assam

Proximity was reported as an advantage for the farmers in both channels in Assam. Distances from the market rarely exceeded 25 km. Roads were perceived to be average, if not good. In the emerging channel, collection from farms was an added advantage. Storage and timely disposal of potato is important. In both channels, potato is disposed of within 2 months of the harvest in Assam though those selling to the processor held on longer to stocks. Since sales agreement was made in advance, this would reflect delays in procurement rather than holding capacity of farmers that could indicate their bargaining strength.

Most facilities like auction (traditional channel), supervision, loading, weighing and sorting ranged between average and good in either channel, but cold storage and parking facilities were a greater constraint in the traditional channel than in the case of contracting. With 80 % of the participants in the traditional channel rating the cold storage facility as 'bad' and facilities like telephone, computer services, Internet and banking non-existent in any channel, farmers gained little.

None of the farmers in the samples availed of credit from institutional or non-institutional sources, but all farmers in the contractual relation have been beneficiaries of input advances with respect to improved seeds, fertilizers and pesticides. This privilege was deemed extremely attractive because of the zero interest property of the advance and its conjunction with knowledge transfer and extension. Farmers complained about the quality demands on the part of the buyer and the small quantities of purchases.

9.4.3 Punjab

For potato growers in the state, the volatility of the price is a major problem, and a bumper harvest is a cause of apprehension. In this background, contract farming is a welcome option, but the key complaint revolves around the tendency of the buyer to select products only based on shape, colour and size. However, the farmers are able to sell the products rejected for being lower in quality to buyers other channels. The rate of rejection is also very low in the traditional channel.

The regular market is found to be mostly within 10 km from site and rarely more than 25 km away. The Punjab roads are rated good to average though lack of godown and cold storage creates serious problem. Auction arrangements, supervision, loading, weighing and solving facilitates are good. No Internet, telephone or computer is available. The emerging channel involves longer distances to be travelled though only by the buyer, but storage facility is good. Supervision is reported universally as good although there is no auction. The farmers are well aware of the processes in the marketing chains.

Borrowing of funds is reported by 80 % of farmers in the traditional channel and 50 % in the contract chain. Sellers take loans from banks, cooperatives and also the

traders, but in contracts, institutional lending is dominant though 10 % also report credit taken from buyer (against 28 % in traditional channel). Moneylenders have a minor role reported by hardly 3 % of the respondents selling only in the traditional channel. Loans are taken only for cultivation. Interestingly, no report of input advances is received from any channel. In the emerging channel, no farmer was also informed on the subsequent stages in marketing.

However, merchant service was satisfactory in both channels and no conflicts are reported in the contract. Recovery performance was better in contract channel. Assured sales, meaning less risk, drove 80 % of the participants to go for contract, but low cost of marketing, desire for higher prices and less physical losses are other important factors behind their preference. However, half of the sample in the traditional channel also cited assured sales for their reason to stay on. Influence of friends played a small role.

9.5 Who Participates?

The samples generate mixed results with respect to the question whether the participating group is inclusive of economically and socially backward farmers. It may be kept in view that among the four cases presented, only two cases UPP and PPP involve a buyer of a large multinational dimension whereas in the other two cases the processors are relatively small units of local nature. In one case APK, the transaction is carefully designed with a regulatory NGO intermediating between the parties.

Table 9.3, summarizing the sample profiles, finds that the section contracting with Pepsi in Uttar Pradesh, i.e. UPP, appears more inclusive when farm class is only considered because over 68 % of the sample farmers are in the small and marginal farm holder category compared to less than half in the other sample. However, comparing other social and communicational attributes (backward/minority classes and ownership of mobile phone or vehicle), the sample of participants appears rather privileged. On the contrary, in the other two cases, i.e. contracts with local processors in Uttar Pradesh and Assam, the inclusion of small farmers falls short relative to the traditional counterparts. While in respect of other indicators the emerging marketing channels appear more inclusive, the differences are not always significant.

A more detailed analysis is possible from Tables A.12–A.14, but the results are not any more conclusive. When social attributes are considered, only UPP case appears to be noninclusive mostly because among the participants no minority community (non-Hindu) and less of backward castes (SC/ST) are found. There is also no presence of below poverty line (BPL) and female-headed households. More of the participant households live in pucca houses than in the non-participating households. In the case of APK, social inclusion is comparable between the two channels. Nagaon has large sections of Muslim population, but the presence of minority community is less in the sample of emerging channel participants, but this

Table 9.3 Participation of the underprivileged in the emerging channel

Crop	Potato	Aonla	Potato	Potato
State	Uttar Pradesh	Uttar Pradesh	Assam	Punjab
Channel	Contract sales to processor			
Small and marginal farmers	68 (1.39)	51 (0.77)	60 (0.88)	1 (0.20)
Backward/minority	4 (0.28)	8 (2.80)	94 (1.00)	100 (1.0)
No vehicle	16 (0.80)	16 (1.33)	76 (1.15)	0 (0.0)
Communication disadvantage	20 (0.43)	4 (0.12)	16 (1.14)	0 (0.0)
Not owning a farm asset	40 (1.25)	93 (1.08)	24 (1.50)	0 (-)

Notes: Small and marginal farmers are farmers operating less than 2 ha land, backward castes are scheduled castes and tribes, minority is mostly Muslim, no vehicle is lack of motorcycle, communication is using mobile phone, and farm asset is pump set. Figures in *parentheses* are ratios to corresponding estimates for traditional channels

is compensated by greater participation of backward castes. No great difference in the inclusion of BPL and female-headed households is also noted. In the UAS case, the emerging channel appears more inclusive of minority community and backward castes, but no presence of BPL households is reported.

In all cases, the largest section of participants is from small- and marginal holding farmers in both channels perhaps outlining the profile of the growers of specific crops. UPP has the largest share (68 %) followed by APK (60 %) and UAS (51 %). The proportion of relatively large holding farmers (more than 4 ha) is 12 % in UAS, 8 % in APK and least at 4 % in UPP. The farms own assets like tractors, pump sets, trolleys and tillers (except UAS) in various degrees. The emerging channel is more inclusive in UAS and equitable in APK in ownership of farm assets. UPP too appears inclusive but the participants own more of tillers than in the other channel. There is no significant difference in the farm size, and the land in all cases is irrigated mostly by ground water. With the exception of UPP, there is no incidence of leased land.

Ownership of mobile phones is more among the emerging channel participants with the exception of APK. The ownership of computers and access to Internet are impressive in UPP. Educational attainments are not significantly different among the participants, but a slight lead is perceptible in terms of the education of the head of household and the proportion of members having higher education. The age of the head is also comparable between the channels.

9.6 Farming Practices

A few differences in farming practices are visible in Table 9.4. In Assam, external organic intervention is meager in either case, but nevertheless, all farms apply composts or organic manures, and inputs of both chemical and organic fertilizers are higher in the emerging channel sample than in the traditional channel. Fertilizer use both as chemical and organic inputs is less intense in the emerging channel for

Table 9.4 Farming practices

Crop	Potato	Aonla	Potato
	Uttar Pradesh	Uttar Pradesh	Assam
State	Contract sales to processor		
Hiring labour (%farms)	85.99 (0.94)	95.82 (1.05)	70 (0.74)
Chemical fertilizer use (Kg/ha)	984 (1.26)	333 (0.96)	568 (1.09)
Organic fertilizer use (Kg/ha)	411 (0.34)	850 (0.63)	262 (1.10)
Using organic manure (%farms)	100 (1.0)	100 (1.00)	100 (1.00)
Using tractor/tiller (%farms)	24 (1.05)	3 (0.35)	100 (1.28)
On-farm storage (%farms)	–	–	72 (–)
Purchasing seeds (%farms)	–	–	100 (1.00)

Notes: Figures in *parentheses* are ratios to corresponding estimates for traditional channels. The Punjab Centre did not report

aonla in Uttar Pradesh, but in the contract with Pepsi, the average of chemical use is higher but organic intervention less. None of the farms is however certified to be organic (Table 9.3).

Water-efficient equipment like sprinklers and drip are not reportedly used in any of the sample farms, all of which use pump sets. All households in the Assam samples purchase seeds. The farms in Assam are reasonably mechanized, but while all of them use tractors or tillers in the emerging channel sample, only 78 % do so in the traditional channel. Among growers of aonla in Uttar Pradesh, only a small proportion of the sample farms use these farm machines though the share is relatively less in the emerging channel. Except in aonla in Uttar Pradesh, family labour has a higher share in labour use in the emerging channel. Storage appears to be an important factor for participation as none of the households use the facility in the traditional channel, but 72 % of the emerging channel store potato though hired facility is used for the purpose in Assam. It is already noted that disposal is delayed and phased out in the emerging channel that suggested that farmers in contract may be required to wait a while before disposing of the product.

9.7 Conclusion

Despite the failure to amend the marketing law, Uttar Pradesh has progressed with contract-based marketing even under the present rules while the successful amendment has brought some order into the dysfunctional regulated market regime in Assam. There is no strong evidence of bias in inclusion against small farmers in the contract model. In Uttar Pradesh, the case of the multinational company Pepsi buying potato on contract from farmers is suggestive of greater inclusion of smallholdings and the economically asset poor sections, but it does not seem inclusive if social attributes such as caste and community are considered. On the whole, there is a clear indication that farmers privileged with communication

facility (mobile phone) and perhaps in education level are drawn towards the contract sales model.

The farmer in the contract sales model avoids bearing marketing costs due to the practice of farm-gate level collection of produce though marketing costs would still be necessitated if some of the products offered are not selected for the chain and need to be sold elsewhere. The profits are however higher in the emerging channel than in the traditional one, and farmers earn more in all cases. The commission agent remains an important source of price information to enable farmers to bargain.

Since the final products are different, processor's costs and margins are profound, and products sold in the different channels differ intricately in quality, the measurement of efficiency is not straightforward between the channels. We found the prices in contract were largely consistent with producer expectations, but commission agent and trader were important sources of price information in two of these cases. In Punjab, the company appears to dictate the price.

Storage facility is rated 'bad' in the traditional channel in most cases, but access to the same facility (hired or owned) is an important advantage for participation even in the emerging channel in which actual collection can be delayed by the buyer's other compulsions. The participating farms appear more mechanized and also intensive in family labour use. They also use more of chemical and organic fertilizers. Access to inputs free of interest was considered an attractive feature of the emerging channel. Assured sales are a key factor in participation, and given the quality standards expected, participating farmers generally diversify without depending on only contract selling.

Chapter 10

Selling to Organized Retailers

Organized retailers link producers with consumers directly. This form of market intermediation is fast gaining popularity in India. The organized retailers have the resources to purchase materials from competent producers and make suitable arrangements for collection, storage, sorting, grading and transportation and finally also for distribution. The sales outlet is generally owned (or franchised) by the company and is an element of a large chain sprawled across different places of the country so that the produce reaches a spatially extensive market.

Retail chains are not entirely new in India. Examples of cooperative, government and semi-government initiatives have been around in the country for a long time, but their scale of operation was miniscule for a large country. Yet opening up the market to retail chains is one of the severest challenges of pushing reforms today. The prospect of large profit-minded company including larger multinational entities with acclaimed expertise in marketing at a global scale entering the market heightens apprehension about the implications of the changes. The displacement of many middlemen, including a very large number of urban retailers who could be owners of small shops, roadside stall or street vendors, is a key source of disquiet.¹ On the contrary, the possibilities of farmers benefiting from a more modernized marketing system especially associated with investment on the 'back-end' infrastructure appeal the enthusiasts.

India is a latecomer in the supermarket revolution, with stores opening in the late 1990s in Southern India,² focused mostly on the middle class. India's modern retail is said to have entered its second stage only since 2001 (Reardon et al. 2008). Given

¹ Recent reports that a particular global retail giant has replaced 0.2 million traditional retailers in Mexico, a country with a population of only 115 million, have been in discussion in India where the traditional retailers constitute 4 % of the country's population. While this is an irreparable loss, the current controversy actually stems from another graver issue that involves the alleged payment of bribes by the company to have this complete access in the country (Business Line May 31, 2012).

² A joint venture between Spencer's and Hong Kong's regional multinational supermarket chains – Dairy Farm International – was probably the first example.

the low base, India's may be the fastest pace of supermarket diffusion in the world.³ However, till the end of 2000, staple and processed foods constituted most of their sales, while fresh produce accounted for only 10–15 % of sales in modern retail stores.⁴

This chapter investigates four cases of organized retailing operating in three different states of India. For Jharkhand the marketing of cauliflower and for Haryana the marketing of two crops, muskmelon and tomato, through the intermediation of the national-level company, Reliance Industries Limited from their outlets Reliance Fresh, are studied. Marketing of the vegetable tomato through a noncommercial outlet called SAFAL is studied in Himachal Pradesh.⁵

10.1 Data and Methodology

Primary data is collected from the district of Solan in Himachal Pradesh, Ranchi district of Jharkhand and three districts Gurgaon, Kurukshetra and Sonapat of Haryana (Tables 4.1 and A.15). In all cases, a control group of farmers operating in the local traditional marketing chain is also taken to mark the contrasts.

The prices used in the study are averages of prices fetched by the sample farmers. The final or terminal price in the chain is the consumer price though realized in the different consumer interfaces given in the next section.

10.2 Status of Study Regions and Market Functioning

Jharkhand is a state formed out of undivided Bihar and located on a plateau. The climate is conducive to producing a diversity of horticultural crops including off-season vegetables. Cauliflower claims over 11 % of the vegetable area. Total vegetable acreage is largest in the district of Ranchi which also ranks second in the area under cauliflower, the study crop. Kanke block is associated with the activities

³ The estimated share of organized retail in total retail food market has increased from below 10 % to nearly 60 % in recent times in various countries in South America, South Africa, East Asia (outside China), Southeast Asia and Central America (Reardon and Timmer 2007).

⁴ Less than 2 % of food products are sold through modern chains (Deodhar et al. 2006). Even in the capital of India, majority of the distribution of fruits and vegetables is done through 'push-cut' retailers and 'wet market' retailers, but contradictory to experiences in other countries (World Bank 2008), modern retail stores in Delhi spread equally to rich and poor neighbourhoods. In Delhi the roll-out of modern retail was disturbed by the closure of Subhiksha shops, but compared to southern cities like Hyderabad and Bangalore that were the birth place of the change, Delhi might be showing higher growth rate as a latecomer.

⁵ Investigation for collecting primary information is conducted by the Agro-Economic Research Centres (AERCs) in the Himachal Pradesh University, Shimla; T. M. Bhagalpur University, Bhagalpur; and University of Delhi, Delhi.

of Reliance Fresh, the emerging channel under study, and the samples cover villages known for vegetable cultivation and falling in the catchment of the retail chain's collection centre. The list of cauliflower growers forming the frame was drawn out with the help of members of a voluntary organization working for farmers' benefit (a *kisan* party), the villagers and the personnel of the Reliance Fresh collection centre at Pithoria village.

Ranchi is the state capital of Jharkhand with a large proportion of scheduled tribe (ST) population (Table A.1). More than 20 % of the land is under forest cover, the state has rich mineral reserves and the share of agriculture in the state GDP is only 15 %. Despite having a pleasant climate, the skewed rainfall and low irrigation intensity reduce the scope of multiple cropping (cropping intensity is only 1.05). The main crops grown are cereals including maize. Cauliflower, a crop belonging to the family of broccoli, rich in antioxidants and vitamins and used widely in Indian cuisines, is a vegetable that is suited for the cool and moist climate of Ranchi. The crop however requires irrigation when the moisture content in the soil falls below a point.

Like any hilly region, Himachal Pradesh is constrained geographically in its economic activities and is prone to migration. Social and physical overheads like roads, power, schools and health facilities that are a prime responsibility of the state can only help progress to happen in the state. Agriculture is by far the major occupation of the people, and due to climatic advantages, a wide variety of fruits and vegetable can grow well.

Solan district in Himachal Pradesh is fully electrified and well connected. Agriculture occupies over half of the workforce in the district, but about 60 % of the holdings operated are small or marginal, and only a quarter of the sown area is irrigated. Both high- and low-altitude areas are present in Solan, but the valleys of Saproon, Doon and Kunihar are strong points of its agriculture. Some parts of the district however have difficult terrains. Temperature is also variable falling to 0 °C degree in winter and rising to 40 °C in summer, but these conditions suit stone fruits, subtropical fruits and off-season vegetables like tomatoes, capsicums and French beans. Vegetable production accounts for 17 % of the total crop production.

Haryana emerged as one of the most progressive states in the wake of economic liberalization in India. Its proximity to the national capital New Delhi, its earlier record of success in agriculture and industry and the rise of the software industry are special components of the success that would be reflected in the demand for horticultural food products. Haryana therefore would provide an interesting case for any study that is related to economic reforms.

All the three districts selected for sampling in Haryana are close to Delhi and are well connected. Very hot summers, very cold winters and mild monsoon with low to moderate rainfall characterize the climate of the region covered, but Gurgaon has a relatively more arid climate. Cereals and horticultural products are the main crops grown. Input intensities and crop productivities are impressive, but there are signs of water pollution and soil degradation. All the districts, especially Gurgaon, enjoy the advantage of being located in the hinterlands of a vibrant urban market.

10.3 Emerging and Traditional Marketing Channels

Informal retailers who traditionally exist in the country include (i) traders in wet markets (specific places where a number of small retailers of fruits and vegetables typically cluster together during fixed hours daily), (ii) pushcart vendors (who roam around in residential areas to deliver fresh fruits and vegetables or stand at specific and prominent places in the colonies) and (iii) family-owned and operated kirana (often referred to 'mom and pop' elsewhere) stores (situated at fixed locations selling basic food and nonfood items). All three sources have advantages of bringing to consumers fresh produce, their locational conveniences (especially the pushcart vendor) and lower cost of operation. These micro-endeavours are largely private and commercial albeit informal initiatives. The organized retail imposes a serious competition on these agents.

Besides, a cooperative and a quasi-government sector also exist in retailing. There are also organized forms of marketing in India. Several but isolated initiatives have been made at opening cheap provision stores that also attempt to sell fresh and processed food products, but the importance of this cooperative ventures declined over time. The Kendriya Bhandar is such an initiative in Delhi for supplying to urban working middle class. The parastatal outlets for distributing milk and horticultural products procured directly from producers through Mother Dairy booths with its SAFAL brand are a more successful example of organized retail operative for non-profit objectives.

Jharkhand was earlier a part of Bihar. The Bihar APMC Act (BAPMC) passed in 1960 was not visibly effective, and following its bifurcation from Bihar in 2000, Jharkhand legally adopted the BAPMC Act, and further in 2000s, it amended the JPMC in tune with the centre's suggestions.

Farmers in Jharkhand, especially the small farmers, hardly dispose of their products in the main market yards due to the poor infrastructure and supervision and because the cooperative was also non-functional. Generally, they sell to wholesalers or small commission agents in the rural periodic markets. Village merchants, itinerant traders, wholesaler, commission agents and retailer are the prominent intermediaries in the chain though the channel lengths vary. With the new legislation, private initiative in upgrading the channels is attempted, and the Jharkhand government allowed a corporate house Reliance Industries Limited (RIL) to enter into the business of retailing of vegetables in the state. The RIL has opened a chain of retail stores under the name Reliance Fresh in many parts of the country. It has three outlets in Jharkhand since 2006 which, along with two collection centres in Ranchi, offer an alternative channel for vegetable growers in the state.

Haryana state enacted the Punjab Agricultural Produce Markets Act 1939 and further amended it in 1961 to regulate all markets in the state. With liberalization, contract farming was formerly permitted. New model fruit and vegetable markets are created to provide retail and wholesale facility, and schemes for giving better assistance for grading sorting and packing for value addition are formulated. As in

Jharkhand the RIL company also started operating their Reliance Fresh outlet in Haryana.

The Himachal Pradesh Agricultural Produce Markets Act 1969 had consolidated the varied regulations of pre-independence regime. By the end of the 1990s, reforms became an urgent necessity again because of the malpractices in the existent system rather than the lengths of the marketing chains. For lack of alternatives, the orchardists of Himachal Pradesh became intensely dependent on traders from Delhi especially from *Azadpur* market. As a way out, marginal producers who operate on little land and sell milk along with crops often use direct marketing by carrying vegetables and milk to rural and urban customers. In some marketing chains, the retailers bypass commission agents and approach the farmers before they take their products for auction at local markets. Producers often use multiple channels weighing the reliability of the marketing agencies, their own urgency for cash and the prices offered. Thus, the recourse to regulated market is only limited in the area, and multiple modes of marketing have evolved.

The old Act was repealed and marketing reforms based on the Model Act were introduced with the enactment of Himachal Pradesh Agricultural and Horticultural Produce Marketing (Development and Regulation) Act 2005. Several private companies are investing in supply chain facilities and indulge in marketing functions.

10.3.1 Marketing Through Reliance Fresh in Jharkhand and Haryana

Unlike subsistence crops, vegetables are grown for commercial purpose, but marketing is a particularly limiting factor for the producers because of their perishable nature. Farmers are also victims of price volatility between peak and lean seasons. Transportations, packaging, storage and distribution are important functions in marketing fruits and vegetables.

In the traditional channel of Ranchi, the *Kutchia Arthia* is the most important agency who buys vegetables from the farmers, but the place of exchange is in practice often the rural periodic market since the regulated market is generally not suitable for the purpose. Many small and marginal farmers sell perishable vegetables in this market because they are inhibited by the inadequate facilities and lack of enforcement of regulation in urban markets although the practice is more common among resourceful farmers.

The Haryana study rightly notes that the nature and length of the traditional channel vary with commodities depending on demand and regional specialization. Although producers in small towns act as retailers or direct sellers to wholesalers or producers, the more common models include the commission agent besides the wholesaler and the retailer. The chain linking the producer and the consumers consists of the (i) commission agent, the wholesaler and the retailer in Haryana,

while in Ranchi the (ii) *Kutch Arthia*, the wholesale trader and the retailer constitute the chain.

The RIL has initiated the retail marketing initiative of opening outlets known as Reliance Fresh (RF) that operates through small and medium sized stores located in cities and small towns. The store offers to bring high quality vegetables apart from other food articles to consumers at affordable prices. It sells both pre-packed vegetables with specified expiry dates and loose vegetables. Leaflets and banners are deployed for promotion of sales.

A few thousand farmers are hooked on to the retail supply chain in Ranchi district through collection centres, which are linked with consortiums undertaking grading and standardization. It is reported to be very selective in its procurement. Reliance Fresh procures vegetables from farms on daily basis unlike in the traditional channel in which the vegetable is collected by intermediaries in local periodical markets. In the regular channels, cauliflower is at the earliest dispatched to consuming centres by the traders to avoid spoilage but with the advent of Reliance Fresh, storage at local collection centres has become a common custom in the district. Usually even in traditional channels, vegetable with leaves attached can be preserved for a month at the appropriate temperature and humidity before it is transported in trucks tied in nets. In the traditional channel, the procured vegetable is straight away transported and distributed to neighboring states West Bengal, Orissa and Bihar and thus there is no reliance on the local market and its facilities. In the emerging channel on the other hand, the Reliance Fresh staff procures materials to the collection center where they are measured and recorded in the names of the producer-sellers. The vegetable is sold from the RF stores all through the day. The vegetable is scientifically graded and shelved in air-conditioned stalls to be sold from the Reliance stores at Ranchi which opens at 9 am and operate daily for 12 hours.

In Haryana too the system is similar. The company approaches the farmers directly for procurement, develops cold chain facilities through own effort or agreements with associates to reduce wastage and runs a number of stores in the national capital region to sell fruits, vegetables, groceries and dairy products. Participating households thus escape the problems of transporting, weighing and storing the products. However it is important to note that vegetables accepted by Reliance are required to be graded based on their quality and freshness.

10.3.2 *Mother Dairy as the Intermediary in Himachal Pradesh*

Himachal Pradesh has considerable climatic advantages for growing commercial vegetables, but the potential needs to be tapped yet. Tomatoes can be grown as off-season vegetables in greenhouses, but such ventures add to the cost of production. Waxing reduces the weight loss of tomatoes and increases their shelf life. High temperature, humidity, oxygen pressure and the basic fruit quality are the factors behind spoilage of products. In this milieu, investment on technology is important for market development. In Himachal Pradesh, vegetables like tomato are traditionally

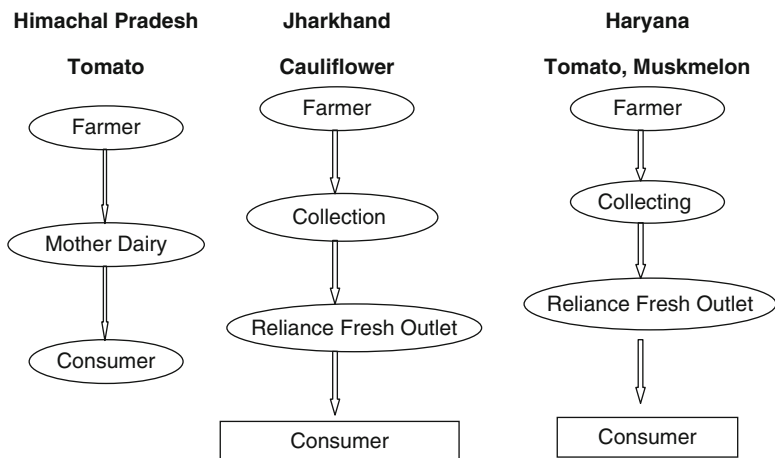


Fig. 10.1 Flow of products in the supply chain in the emerging channels

transferred from farmer’s field to consumers through the string of middlemen in which Mother Dairy is also a major marketing agent. Mother Dairy also buys tomatoes from farmer, assembles the products at a collection centre and then sells them through its own outlets. In Himachal Pradesh, Mother Dairy sells through its booth in Delhi to the consumers. Thus Mother Dairy is the emerging channel selected for study.

Mother Dairy has opened a store for collection of the produce from the field in Solan. Farmers are supplied with plastic crates at nominal charges. The store for collection is located within a distance of 15 km from the producing site at the time of survey, but Mother Dairy is observed to regularly change its site. The purchase is linked with indicators of quality and shelf life. Thus, procurement is largely restricted to areas with favourable temperature.

The traditional channels observed in Himachal Pradesh display variety and range from direct sale from producer to the consumer to a more roundabout route via intermediaries. More commonly, a chain of intermediaries is involved. In this study, the traditional channel selected considered is a popular one involving the producer, the wholesaler or commission agent, the *mashakhor*, the retailer and the user who is the consumer (Fig. 10.1).

10.4 Market Performance

The marketing cost is more than what the producer gets in all cases except tomato in Himachal Pradesh but efficiency gain from reforms is clearly indicated. Tomato in Haryana is the only exception where the marketing cost exceeds the producer price in both channels. Price magnification from the producer to the consumer is lower (about half) than in the traditional channel in the retail chain only in Mother Dairy in

Table 10.1 Efficiency performance of organized retail channels

Crop	Tomato	Cauliflower	Muskmelon	Tomato
State	Himachal Pradesh	Jharkhand	Haryana	
Marketing scale (Rs 00,000)	0.57 (1.39)	0.75 (1.09)	2.06 (1.18)	1.71 (1.10)
Total farmer price (Rs/'00 Kg)	1,062.01 (1.05)	361.98 (1.0)	640.00 (1.06)	545.00 (1.06)
Net adjusted farmer price (Rs/'00 Kg)	989.00 (1.91)	358.68 (1.07)	567.60 (1.10)	501.40 (1.18)
Consumer price (Rs/'00 Kg)	1,496.00 (0.95)	830.00 (1.02)	1,445.00 (1.06)	1,375.20 (1.31)
Price magnification (ratio)	1.51 (0.50)	2.31 (0.96)	2.26 (1.00)	2.52 (1.24)
Gross marketing cost (Rs)				
Per rupee fetched by producer	0.51 (0.25)	1.17 (0.92)	1.53 (0.95)	1.63 (1.14)
Per rupee paid by user	0.34 (0.51)	0.51 (0.98)	0.60 (0.98)	0.60 (1.02)

Source: Computed from survey data

Note: Figures in *parentheses* are ratios to corresponding estimates for traditional channels

Himachal Pradesh. The price magnification exceeds 2 in the other cases. Relative to the corresponding traditional channel, it is high for tomato in Haryana (1.2) but nearly the same in the other two cases, i.e. Jharkhand and muskmelon in Haryana. Marketing scales per farm are reasonably high in all cases and are found higher in the emerging channel (Table 10.1).

In any case, the experiences with retail marketing show that there is hardly any efficiency gain in the private channels and in tomato (Haryana) the difference is not favourable to the producers probably reflecting the existing strength of the unorganized marketing in this privileged state. Farmers bear the largest share of marketing cost in Himachal Pradesh at 65 % in the traditional channel which comes down to 30 % in Mother Dairy. Transportation and packing are major components of farmers' cost. In Jharkhand, the marketing cost borne by the farmer is less than 1 %. Not only does RF procure from the field, but it provides all facilities like weighing and storage.

10.4.1 Farmer Gains

In all cases, the total farmer's price in the retail channels is at least equal to the coexisting traditional channel, and the net prices received by the farmers are considerably higher (Table 10.1). The price the consumer pays is cheaper only in the Mother Dairy booth in the Himachal Pradesh study but higher in the Reliance Fresh outlets in Jharkhand and in Haryana.

No significant advantage in productivity is noted in the channel, and in fact, the productivity is lower for farmers in the emerging market in Himachal Pradesh. However, profits and returns per hectare are considerably higher in the emerging channel especially in Himachal Pradesh though the gain is marginal

Table 10.2 Farmer's gains in the retail channel

Crop		Tomato	Cauliflower	Muskmelon	Tomato
State	Units	Himachal Pradesh	Jharkhand	Haryana	
Productivity	'00 Kg/ha	236.00 (0.91)	66.47 (1.0)	322.00 (1.11)	314.00 (1.04)
Profit	Rs/'00 Kg	747.91 (3.50)	195.71 (1.02)	393.22 (1.21)	348.23 (1.38)
Returns from land	Rs '000/ha	177.0 (3.16)	13.0 (1.18)	127.0 (1.35)	109.0 (1.43)
Marketing cost	% farmer cost	29.19 (0.44)	1.95 (0.15)	26.88 (0.99)	18.48 (0.60)

Note: Figures in *parentheses* are ratios to corresponding estimates for traditional channels

in Jharkhand (Table 10.2). High dependence on the retail channel is reported (Table A.21) although rejected products have to be sold elsewhere. Marketing cost continues to be a sizable share of farmers cost though it comes down in relation to the traditional channel.

10.4.2 Consumer Gain

The consumer buys cheaper in the Mother Dairy booth in Himachal Pradesh, but the consumer price is higher in the Reliance Fresh outlets in Jharkhand and Haryana relative to the traditional channel. This is not quite in keeping with theory and empirical results in larger studies. While in the early stages of penetration, prices offered for fresh foods in modern retail in developing countries are generally higher or equal compared to traditional retail prices, only processed food becomes cheaper in the intermediate stages, but in the advanced stages as supply chain management becomes more efficient, food price in modern retail tends to be lower for both processed and fresh food (Minten and Reardon 2008; Ho 2005).

The quality of products and the comfort of shopping could account for the higher prices imbedded in the associated services generated. Our reports from Jharkhand suggests that business in RF Ranchi is growing due to consumers' satisfaction with the graded products, air-conditioned stalls and computerized weighing facilities raising flak from local vendors.

The issue of consumer gain blends economics with politics. There is evidence that consumers who do shopping in supermarkets tend to consume more processed and less nutritious food. This has been used to explain the persistent tendencies of consumers to depend on traditional retailers for fresh produce (Asfaw 2007; Neven et al. 2006; Hawkes 2008). Early anecdotal evidence and more recent survey-based study suggest that modern retail structure would be amenable to rich and upper middle-class consumers who afford large but infrequent shopping bills (Goldman 1974; Neven et al. 2006; Chengappa 2006). A study done in Delhi found results conflicting with these expectations. The quality of food is found to be worse in modern retails than in traditional outlets due to slow development of supply chain in store handling (Reardon et al. 2008). Vegetables like tomatoes were sometimes

found considerably less expensive in modern retails as compared to push-cut, but these price differences are partly explained by lower quality in modern retail. Prices in private sector modern retail do not differ significantly from those in cooperative modern retail chain (Safal) or from traditional market if quality is controlled for. In this report, convenience stands out as the major factor drawing the consumers to retail outlets and there is no evidence of quality shortfall. Thus generalization is difficult at this stage.

10.4.3 Disposal and Wastage

The horticultural products are almost fully marketed, but not all the products could be sold in the specified channel. Both channels however face rejection, but the rejected product is sold outside the specified channel under study. Less than 5 % of the marketed amount remains unsold in Jharkhand and Himachal Pradesh. Wastage is also not exclusive to any channel. Although farmers reduce their marketing cost in organized retail, rejection and wastage impose marketing cost that makes up the inefficiency of the channel.

Home consumption of the produce is reported to be (Table A.21) high in case of cauliflower in Jharkhand in both channels. The percentage of product marketed in the retail channel is high, showing the high dependence of the farmer on a single convenient channel. In Himachal Pradesh, the share of the marketed product that actually gets sold in the channel is also very high, but the same share is considerably lower especially in the case of cauliflower in Jharkhand in the emerging channel. The reason is clear. If one observes the share of marketed products sold elsewhere due to rejection, 18 % of cauliflower marketed in the channel appears to be rejected in Reliance Fresh compared to only 8 % in the traditional channel. However, despite the rejections by RF, only some marginal amount remaining with the farmer finally remains unsold. Despite the higher incidences of rejection, the households save time and effort in using RF as their agent when procurement centres are accessible.

Our investigation in Haryana revealed that postharvest losses of tomato added up to 12 % and 10 % in the traditional and emerging channels, respectively. The corresponding figures are 10 % and 8 % for muskmelon. However, at the farmer's level, the losses were less than 5 %. Much of the postharvest losses in Himachal Pradesh occur at the retailing stage, but the share is higher in organized retail (74 %) than in the traditional retail (67 %). At the farmer's level, the losses are lower in the organized retail chain at 20 % than 27 % in the traditional channel, while losses in transportation contribute only about 5 % of the postharvest losses in both channels. About 12–13 % of the production is lost in both channels, and losses are most intense while handling at the retail level. Jharkhand postharvest losses are reported for cauliflower at 10 % and 6 % in the emerging and traditional channels, respectively.

10.4.4 Price Determination and Information

In Himachal Pradesh, price determination takes place by negotiation only at the time of sale with no prior discussion between the parties. The farmer in the traditional channel in Himachal Pradesh acquires price information mostly from personal acquaintances accounting for 40 % of the cases. Information from other farmers and commission agents, reported in 32 % and 28 % of the cases, is also important. In the emerging channel too, the sources of information are similar, but it is important to note that the *commission agents have no role*. The AGMARKNET's contribution in information dissemination is also not noted in any channel. There is no prior information on price available to farmers who generally receive the price information only at the time of sale. While most farmers obtain the prices they expect, a larger proportion (38 %) of farmers receive lower prices than they expected compared to farmers in the traditional channel (24 %).

In Jharkhand too, sample farmers reported that agreements on prices are made only at the time of sale in the RF chain, but the realized price is close to what is expected. In the traditional channel too, price determination mostly takes place during sale, but curiously, previous agreements on prices are also reported in 10 % of the cases. In the case of Reliance Fresh, prices are more definite but unlike in the open marketing system, the relation of prices with demand and supply is less clear. Farmers get information from sources like speaking to other farmers and speaking to commission agents in the traditional channel, but the Reliance Fresh outlet is a source of information for farmers in both channels, and the *commission agent or trader does not help farmers in the traditional channel*. The AGMARKNET has been of no use to any farmers. Thus, as in Himachal Pradesh, traders and electronic media convey no information to farmers selling in the retail chain. These farmers depend entirely on the buyer to set the price.

Transaction occurs mostly outside the market yards in Jharkhand. The sample farmers in either channel in Jharkhand feel that the terms are in favour of the buyers and mode of sale and weighing facilities are perceived to be biased. The prices fetched are lower than expected in 40 % of the cases. Information on ruling prices is obviously of paramount importance. Prior to marketing, the farmers in the RF chain appear to be more informed than those in the traditional chain, but even these privileged farmers have no knowledge of future prices prevailing in derivative markets. In the Reliance Fresh stores, there is a computerized weighing and measurement system and prices are exhibited digitally. These prices are a bit higher than open market retail stores, but the products are graded in these stores. The prices that farmers get in the traditional channel are highly variable depending on the state of the perishable product and location of the market.

In Haryana the pricing process for matching supply and demand is reported as 'messy'. At harvest, the collection centre offers a price, based on which farmers decide whether or not to sell them. Such decisions are necessarily made by comparing with alternative channels. The assurances got from producers on supply are only oral, and without any formal commitment of a contract, procurement is not

easy for the agent. The farmers stated that they were paid higher prices than elsewhere. It is also perceived that despite the higher prices paid to farmers, because of efficient handling, the effect of these costs is not fully reflected on the supermarket shelves so that consumers also benefit and farmers feel the benefit of higher demand. With the collection facility at the doorstep and the efficient management of transactions, it is not surprising that the new model appears attractive to farmers.

Over 60 % of the respondent farmers growing tomato in Haryana report that information on prices is gleaned mostly from discussions with *commission agents and traders*. Over 40 % of the muskmelon sellers in the retail channel benefited from traders in this respect. Interpersonal dialogues among farmers are useful. The e-Choupal agent is an added source of price information for 2 % of traditional channel tomato producers. Price information is available mostly at harvest time and before sale. *AGMARKNET* is found to have a small role as reported by 4 % of respondents in the emerging channel and 2 % in the traditional channel. Prices largely matched expectations, and the actual prices fetched with the agreed prices and even exceeded them in a few cases so that there was no report of cheating.

10.4.5 Perceptions of Different Agents

The farmers of Himachal Pradesh selling in the traditional channel have to travel long distances of more than 50 km. The road conditions were reported to be average by respondents in both channels, but the regulated markets have no godowns and cold storage facilities. The auction arrangements and supervision of sales were also of average quality. Perceptions on other services like loading, sorting, weighing and packing varied but are reported between bad and average. Internal telephone facilities were also bad, computers and Internet facilities are absent and banking facilities are minimal. The distances in the emerging channel are reported to be shorter 10–25 km although over time the distance varies with the shifting location of the collection centre. The participating farmers too reported poor facilities in the regular marketing system which the RF helped them to overcome. In Jharkhand, the transactions take place in the open in traditional channels, but RF provided participants with superior facilities in the emerging channel. In Haryana, the distances are large for non-participants in retail, but the RF has a collection centre in proximity attracting potential participants. Godown, cold storage, auction, supervision and facilities of loading, sorting and weighing are at best average in the open market.

In Himachal Pradesh, the awareness about prevailing prices was poor, 33 % of the farmers in the traditional channel and 50 % in the emerging channel revealing ignorance of wholesale price. In the emerging channel, none of the respondents had any information of the retail prices. The price information was procured at the last moment, and prices fetched did not always match expectations especially in the emerging channel. Mutual interactions enlightened the farmers on the market. Electronic media was not popular among the orchardists. Although the merchant's

performances were stated as satisfactory in both channels, recovery of due was easy in the traditional channel in Himachal Pradesh, while multiple visits to the merchant were reported by producers for the purpose in the retail chain (Mother Dairy). Usually the merchant supplied a signed receipt. A few conflicts surrounding quality of product were also reported.

In contrast, farmers participating in the emerging channel in Jharkhand are more informed on prices, without being dependent on traders, and though the RF is the chief source of price information in the emerging channel, a lower proportion of the farmers in this channel complained that prices were less than what they expected to receive. Payment is reported to be timely by all, whereas 88 % of farmers in the traditional channel reporting repeated visits for recovering dues. Satisfaction with merchant performance was expressed in 88 % of cases in the emerging channel compared to 46 % in the other chain. Conflicts were also unknown in sharp contrast to the traditional case where 38 % of the farmers reported conflicts.

The picture is similar in Haryana. Timely payment is reported by most farmers although multiple visits were reported by small sections in both channels, especially in the emerging channel for tomato. Not only mutual discussions but interactions with commission agents were useful for gaining information, and even the electronic media (AGMARKNET) helped a small section in the retail chain. Receipts were provided in most cases, but incidences of conflicts did not spare either channel.

In Himachal Pradesh, no one in the traditional channel reported of having taken loan or input advance, whereas in the emerging channel, 44 % received loans but mostly from banks, cooperative and friends to purchase inputs. Defaults were not unknown. Thus, there is very little dependence for finance on the buyer in any channel. In Jharkhand too, farmers do not avail of services other than marketing from buyers in any channels. They however do incur debts for meeting financial needs. In the sample of farmers in traditional channel, 22 % of the respondents took loan from local people only, and in the emerging channel, 34 % obtained credit either from local people or from shopkeeper selling fertilizers. While fertilizer seller gave fertilizer on interest-free credit, local people lent at the interest rate 3–6 % per month. In Haryana, a high proportion of farmers selling tomato took loans compared to those selling muskmelon in all cases. Banks were the major lenders, and no one obtained credit from the buyer.

Not all of them necessarily wanted to sell their produce to the respective channels in Himachal Pradesh. The farmers in both channels desired support prices from government. Farmers in the emerging channel felt constrained by the selection of specific grades of tomatoes by the buyer and would prefer complete procurement. They also desire advances for input purchases. Participation is therefore limited. Only 10% of the produce goes through this channel. In Haryana, RF procures only higher-quality (grade A) product so that the rejection rate is high, especially for tomatoes (23 % as reported) which compels farmers to incur the costs of sorting and grading prior to delivery and also to sell the rejected lot in other markets. The test for quality from the collection centre is only visual with no scientific assessment. However, the sample data shows that all the marketed

products could be sold. Nevertheless, farmers feel they are able to save time, effort and money by selling to RF because they are no longer required to transport their products to the market. Even in Jharkhand a major unease was that RF accepted only higher-grade products. The confidence on the trader is higher in the retail channel in Jharkhand and Haryana. The confidence expressed on the merchants was lower on Mother Dairy in Himachal Pradesh relative to the traditional channel.

The traders surveyed in Himachal Pradesh in the traditional channel reportedly send the products of tomato to Delhi and Chandigarh or sell them at Solan market. They too were unaware of the prevailing price situation, and few expressed satisfaction with the use of the channel. They wanted government interventions. In the emerging channel, Mother Dairy was the only agent marketing tomato in the area. Its margin was reported to be only modest, and even this agent had poor price information and wanted some form of government intervention.

For trading in cauliflower, storage and careful handling are important functions. Traders in Jharkhand find their task difficult because farmers do not always follow scientific postharvest management. For small and street retailers, storage is a serious problem. The Reliance Fresh possesses superior logistic management system, resulting in considerable reduction of wastage during the marketing of perishable items.

Consumers in Jharkhand find RF convenient because of the air-conditioned and computerized ambience and because the prices are exhibited publicly. Due to its growing business, the Reliance Fresh stores in Jharkhand have faced 'attacks from mobs' made up of local vendors whose livelihood was affected. The stores were vandalized (the Hindu May 13, 2007). In Jharkhand, a few Reliance outlets as in Ranchi and Jamshedpur have closed down, but this is also attributed to their non-viability and poor location. The performance of many other outlets is also reported to be poor. Protests from fruit and vegetable vendors continue. It is also noted that people are queuing up to buy vegetables in Reliance Fresh in Ranchi; however, expansion of the enterprise is slow on account of resistance from vendors. On the other hand, the farmers feel that the traders in both channels are more powerful and a cooperative method might be the most preferable alternative for the producers.

10.5 Participation

The proportion of small and marginal farmers is relatively poor in the organized retail channel than in the traditional one in all cases except for muskmelon in Haryana. However, the representation of the so-called backward and minority classes is more in the emerging channel. Their share is high, nearly 90 % in both channels in Jharkhand. The emerging channel is less inclusive in respect of asset ownership for most indicators. Ownership of mobile phone is an important feature of participants.

Table 10.3 Participation of the underprivileged in the retail channel (% households)

Crop	Tomato	Cauliflower	Tomato	Muskmelon
State	Himachal Pradesh	Jharkhand	Haryana	
Small and marginal farmers	72 (0.82)	36 (0.67)	46 (0.68)	44 (1.38)
Backward/minority	38 (0.90)	8 (0.29)	40 (0.71)	44 (1.47)
Not owning a motorcycle	88 (0.96)	80 (0.95)	52 (0.79)	28 (1.17)
Not owning mobile phone	0 (–)	18 (0.45)	12 (0.50)	18 (2.25)
Not owning a pump set	100 (1.0)	86 (0.96)	58 (0.88)	66 (0.94)

Notes: Small and marginal farmers are farmers operating less than 2 ha land and backward caste are scheduled castes and tribes. Figures in *parentheses* are ratios to corresponding estimates for traditional channels

Haryana presents ambivalent results in Table A.21. The emerging channel for tomato is less inclusive than the traditional one, but for muskmelon it has higher representation of small farmers, backward classes and those denied of motorcycle and mobile phone. Scheduled tribe households have very small presence, and there is no presence of Muslims among tomato growers, but the presence is considerable for muskmelon. Among the tomato growers, ownership of computer is scarce (only 6 % in the emerging channel). The case is different among muskmelon growers. Ownership of tractor, trolley, tiller and pump sets is reported in both cases. The head of the household is likely to be younger in emerging channel. He is likely to be more educated in the emerging channel for tomato but is less educated in muskmelon, while the share of higher educated member is less in both channels (Table 10.3).

10.6 Farming Practices

Farmers in the emerging channel spend more on chemical and especially on organic fertilizers than those in the traditional channel. The expenditure on organic fertilizer is less in the Himachal Pradesh and Haryana cases of marketing tomato. Curiously, the farmers in the traditional channel spend more on insecticides. Hired labour is used more intensively in the traditional channel (Table 10.4).

10.7 Conclusion

Marketing scales in the emerging channel which is operated by a private sector company are fairly high, and participating producers depend largely on these channels for marketing. All the emerging channels work efficiently, but efficiency gain is not large in Jharkhand and Haryana where the private company works. In comparison, the non-profit channel claims smaller-scale, lower dependence but

Table 10.4 Farming practices of producers under retail marketing

States		Jharkhand	Himachal Pradesh	Haryana	
Crops	Units	Cauliflower	Tomato	Muskmelon	Tomato
Chemical fertilizer	Rs/ha	2,945 (1.05)	5,175 (1.08)	8,267 (1.07)	7,262 (0.98)
Organic fertilizer	Rs/ha	4,508 (1.07)	17,619 (0.88)	7,585 (2.02)	5,111 (0.97)
Pump sets	% households	14 (1.40)	14 (1.40)	34 (1.13)	42 (1.24)
Hired labour	Rs/ha	17,345 (0.92)	3,394 (0.54)	10,332 (0.78)	11,273 (0.85)

Note: Figures in *parentheses* are ratios to corresponding estimates for traditional channels

is found more economic in marketing cost. Proximity, facilities as well as efficiency make participation in organized retail appealing for farmers. Consumers are also drawn by similar advantages. The consumer prices are by far higher than in the open market, while no indication of quality shortfall is reported possibly reflecting the greater selectivity of procurement and higher wastage rates.

Prices are determined at the time of sale. Market intelligence demands attention as traders are found to cease playing any role in information dissemination. Rejection is more in the retail chain, but nevertheless farmers tend to prefer the channel because it makes marketing easier. Also, the rejected product finds buyers outside the channel. Farmers enjoy higher returns but productivity gain is not significant.

In Jharkhand, the retail chain seems to have benefited the farmers owing to the extremely poor condition and the malfunctioning of the traditional marketing system. On the other hand, the producers in the emerging channel show greater awareness, there are less conflicts between sellers and buyers and easy recovery of due is possible. In Himachal Pradesh too, the traditional channel performs poorly, but traders in both channels grope with several difficulties that only the state can address. The channel's dependence on producers' reliability and its increasing responsibility in deciding prices are concerns for the sustainability and efficiency of the channel.

Chapter 11

Direct Marketing by Farmers

Over the years, traditional marketing channels became too congested with intermediaries who became also vested with power. The amendments of the Agricultural Produce Markets Act (APMC), suggested by the central government in 2003, provide farmers the option of selling outside the regulated market to various agencies and even directly to final users. It is conjectured that the simplicity of marketing will be appealing to farmers in business even while consumer's preference for fresh fruits and vegetables may fetch premiums.

Direct marketing (DM) is a model of marketing in which the producer takes on more responsibility in marketing than usual because it dispenses with the services of some or all of the market functionaries. In essence this simple model predated the age of specialization, but all along it survived through time as an easy and added option to producers especially where markets are not developed. In India market regulation by APMC Act is far from successful in many places and proved especially incompatible for many crops other than grains. In such cases despite the Act, producers prefer to dispose of their products in person in the local markets or even take their wares to the customer's doorstep rather than go through the formalities of regulated markets and their traders' obligatory mediation.

Today, there is a revival of interest in direct marketing in the official quarters who are trying to formalize and promote the method among other options of marketing. Direct marketing may involve the sale of products by producers directly to consumers or processors without going through intermediation at all. This method bypasses the prevailing chains of supply and also exempts goods from different market fees. Elimination of all middlemen presents significant potential for reducing margins and avoidable transaction costs. DM can also mean bypassing only part of the traditional channel, the commission agent in particular.

The blessings are however mixed. The farmers in direct marketing, stepping into the role of the numerous traders specialized in the task of marketing the products, manage to reduce margins in market, but the functional diversity has its cost on farm productivity as well as marketing competence. They are deprived of the advantages of scale that the traders they replace could enjoy. Both the processor-buyer and the farmer-seller face severe transaction costs that arise in the course of

selecting and grading products and negotiating prices individually. Nevertheless, there are reasons to believe that direct marketing could be gainful even for farmers who produce in small quantities with appropriate modulations.

The establishment of a direct farmer-to-consumer marketing interface commonly called farmers' market (FM) is a common means of promoting DM in many countries.¹ In India farmer's markets are developing in many places and are more acceptable politically than other emerging channels mediated by private companies, but this form of marketing is not appealing to all producers due to the reasons discussed later. As a compromise, other DM models have emerged in which farmer bargain to sell directly to trader further downstream in market chains.

Direct marketing may be a more suitable alternative of the traditional channels and other emerging channels for sellers who market relatively small volumes and for seller whose marketed products are likely to be of a different quality than that expected by large processors and commercial retail buyers operating in the modern supply chains. It thus offers a way for the disadvantaged small farmers to gain from reforms. The risk of relying on a single marketing channel is also reduced by this option. DM can also be used by producers who normally sell in regulated markets or other channels to augment their sales and to clear their stocks of rejected products. This is a particularly appealing feature when more and more emerging channel buyers become selective in their purchases.

Scale-imposed limitations to access bulk buyers can also be overcome by producers if DM is done by groups of farmers rather than individual farmers. By coming together, the collectives gain better bargaining power and the financial means to access information on technology, regulations and market. The processors and retailers too reduce their transaction cost by negotiation with few groups rather than a large number of individual farmers.

In this study we examine the case of direct marketing involving direct sales to consumers, processors and traders by analysing data collected in the states of Andhra Pradesh, Assam and Punjab where the model has been found to be operating in variant forms.

11.1 Data and Methodology

The sampling design was strongly restrained by the actual presence of the relevant emerging channel and the availability of farmers participating in it in the area for questioning. Our surveys are conducted in the states of Assam, Andhra Pradesh and Punjab.² Rythu Bazaar (RB), a market studied in Andhra Pradesh, is a farmer's market that has gained popularity in recent times especially in southern India. In

¹ Farmer's market, often periodic in nature, has become a common presence in busy commercial areas of developed countries also.

² Primary data is collected by Assam Agricultural University in Jorhat, Assam, Andhra University of Visakhapatnam in Andhra Pradesh and Punjab Agricultural University (PAU) of Ludhiana in Punjab.

Punjab we found an innovative farmer's market known as the farmer's evening market (FEM) in which farmers sell to wholesalers and not to consumers. We found that farmers in remote areas of Assam were selling oranges in groups directly to processors and consumers. This form of direct marketing was interesting for its collective aspect.

The district Visakhapatnam in Andhra Pradesh is selected for studying producers selling the vegetable brinjal (eggplant or aubergine) and the fruit banana individually in the RB located in MVP Colony of the district. The sample is distributed over a number of sub-district blocks. In the Tinsukia district of Assam, the study crop was orange where marketing is historically a difficult process because of communication constraints. The Punjab study draws samples from Ferozepur district. The samples were initially planned to be stratified by the size of landholding, but it was soon found that channels and regions tend to be scale sensitive so that it was not possible to ensure representation of all farm sizes in studying any channel.

For Rythu Bazaar, the sample is drawn at random from the list of members readily available with the market authorities. In the case of Assam, DM farmers had to be located by preliminary market surveys, reports from growers and discussion with the departmental officials. To make assessments, a control sample of farmers operating in the traditional channel was selected from the same area for comparison. Details of samples are given in [Table A.2](#). The retail prices are collected in the traditional channel from Purna Bazaar in Visakhapatnam, Bara Bazaar in Assam and Abohar and Ludhiana markets in Punjab. Primarily, the assessment is built on certain quantified indicators and by comparing sample averages in the two marketing channels.

11.2 Status of Study Regions and Market Functioning

Both the study states Andhra Pradesh and Assam have amended their pre-existing marketing Acts (APMC Act) and are inviting various alternative marketing channels such as private marketing, direct marketing, contract farming and corporate and organized retailer participations. Punjab has only partially amended the Act but is allowing DM and promoting contract farming in a determined way. However, major differences in background conditions distinguish the states.

Andhra Pradesh had been moving in tandem with the country in regulating agricultural market from colonial times, but on the eve of the latest round of reforms, supervision had become degenerated. In Assam, a remote state with a difficult topography in the north-east corner of the country, the regulated markets had continued to remain highly dysfunctional with a large amount of trading taking place outside the prescribed premises. In Punjab, regulated marketing was effective, but the rules needed to be changed in tune with new policy directions in favour of horticulture. For Assam the reforms are a new beginning of effective and realistic regulation, whereas in Andhra Pradesh they mean changing the rules of the games. In Punjab a major crop-producing state in India, the broad changes of the 2000s

were meant to enable trade in horticultural crops to occur outside the regulated markets. Amendments have been till today only partial in Punjab and much is left to be done. Nevertheless, the changes are a significant departure of practices.

Agriculture is an important source of employment in the fertile, riverine and coastal district Visakhapatnam which is otherwise industrially developed. Assam has remained highly agrarian and relatively underdeveloped in character with its border location, hilly segments and deep forests, and Tinsukia district in particular, known for its tea gardens and orchards, is relatively remote in terms of communication. Ferozpur in the western border of Punjab and drained by rivers Sutlej and Beas has alluvial soil, plain topology and an extreme climate.

The average holding size of farms is only 0.9 ha in Visakhapatnam, and nearly 90 % of the district's landholdings are small. In Tinsukia too, most farms fall under the smallholding (less than 2 ha) category. In contrast, the farm size in Punjab is relatively large, the average being over 5 ha (see [Table A.3](#)).

Assam has a history of growing fruits with the selected district being a major orange producer. Andhra Pradesh is better known for rice production, but in recent times, horticulture has gained prominence. Visakhapatnam devoted relatively large amounts of land to the selected crops brinjal and banana, both of which, though horticultural in character, are traditional crops. They have extensive demand arising in both proximate and distant places. Punjab is a leading agricultural state in India but is not a major producer of horticultural crops due to climatic constraints and also due to government's grain-oriented policy directions since the 1970s. With the launch of National Horticulture Mission, the area under fruit witnessed a significant increase. Kinnow, a hybrid citrus, is commonly grown in western Punjab, accounting for about 60 % of area and production of fruits in Punjab.

11.2.1 Direct Selling by Individual Farmers in Andhra Pradesh

Farmer's markets were established in the year 1999 by government initiative in Andhra Pradesh for producers and buyers, and the Rythu Bazaar (RB) is a result of the initiative. The RB studied here (MVP Colony) is located on government land and is furnished with stalls, parking facilities, storage, toilet and drinking water. The farmers are registered members of the RB, selected on the basis of criteria like proximity to the market premises and willingness to participate (see Appendix 2). The RBs are said to be especially attractive to small producers, while large farmers are found to be reluctant to take the trouble of selling their product personally. Customers visit the RB on both weekdays and weekends. They are generally residents of surrounding areas. The availability of relatively fresh produce and the social charm of visiting the marketplace draw customers.

11.2.2 Direct Selling in Groups in Assam

In Assam the major orange-growing pockets are mostly located in remote rural areas where road communication is very poor. Most of the orange growers, who are by and large poor, cannot afford to carry their produce to the distant markets. Their individual volumes of sales are also too small to attract large commercial buyers.

Earlier their only solution was to lease out the orchards to wholesale traders or commission agents who are more resourceful and sold in greater volumes. However, with the changes in the marketing regime, some growers are taking the initiative to come together and form self-help groups or growers' representative groups in their respective localities. Operating in groups gives them the bargaining strength to get remunerative price for their produce that is now sold in bulk quantities directly either to the consumers or to the orange-based processing industries. The venue for direct selling is reported mostly as the regulated market (75.5 %) and the local markets (24.5 %), but no e-selling and no sale from the farm gate were reported. In general local markets were found to be important points of product disposal for farmers participating in both the traditional and DM channels.

Direct marketing by farmers, farmer's representative groups or self-help groups to final consumers or processors as terminal users is being encouraged as an innovative emerging channel in Assam. The involvement of farmer groups is based on the understanding that for operators of small farms, DM might not translate into additional income when volumes are insufficient to attract large processors or commercial retail buyers. A substantial number of producers are however reported to use DM channels to augment their sales to wholesalers, retailers and processors in the regular chain.

11.2.3 Bypassing the Commission Agent in Punjab

Market regulation in Punjab, geared mostly for cereals, did not allow fruits to be sold with the flexibility that would help to prevent spoilage and fetch higher value. Regulation of marketing has always been important in the state. The Punjab APMC Act 1961 and Punjab State Agricultural Marketing Board (PSAMB) worked to regulate transaction and storage. The *katcha arthia* was an important agent in the chain. The emphasis of the system was on non-perishable items, i.e. cereals in particular, and more on quantity than quality, and therefore the benefits did not percolate to fruit and vegetable growers. Direct marketing had a very small presence in the state, but in recent times, the emergence of FEMs for fruits, where kinnow is sold only by farmers to local wholesalers, has led to the decline of the role of the preharvest contractor in the supply channel. The PSAMB has started the FEM in 2006–2007 to enable kinnow producers market the fruits themselves as against the prevalent practice of preharvest contracting. The FEM under study is held in the premises of the APMC market in Abohar from 2 pm

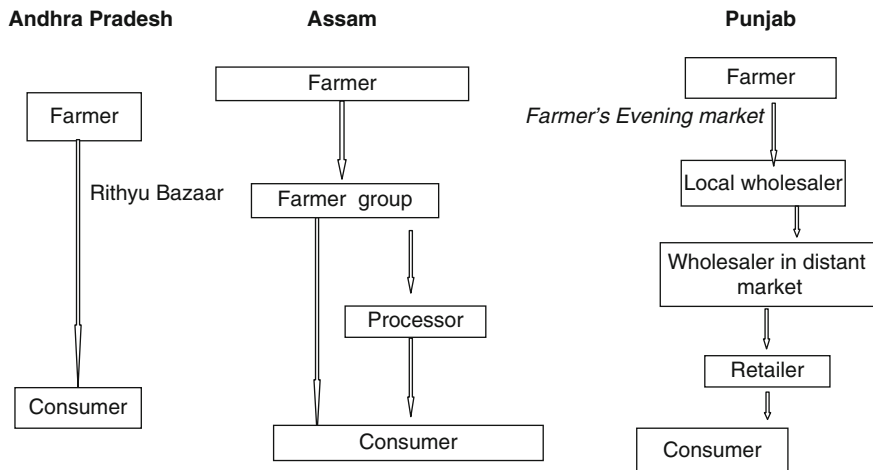


Fig. 11.1 Flow of products in the supply chain in the emerging channels

onwards for 6 days in a week (Saturday is a holiday). The evening fruit market for kinnow is operational only during kinnow harvesting season (October to March). Fruits are sold through auction under supervision and the rules and regulations of the PMC (Fig. 11.1).

11.2.4 The Traditional Marketing Channels

We mentioned that regular marketing systems in both Assam and Andhra Pradesh had been languishing in different ways prior to the amendment of the APMC Act. While regulation appears to be stifling and misdirected in Andhra Pradesh, the lack of regulation is the shortcoming in Assam. Oranges are highly perishable, and so preharvest contracting is common among farmers, but marketing proceeds in an unregulated and unsupervised manner via a large number of handling agents. In Tinsukia the product is found to change hands from the farmer to the preharvest contractor (commission agent) to the retailer and then to the consumer (Channel 1). In some chains a wholesaler too has a presence between the preharvest contractor and the retailer (Channel 2), and the chain is even longer at times with an additional merchant coming in (Channel 3). The following flow diagram Channel 3 depicted below is our select channel.

Producer → preharvest contractor → merchant wholesaler → wholesaler → retailer → consumer Traditional Channel in Assam(Channel 3)

In Punjab where an organized regulated market operated to protect farmer, fruits faced the same fate as cereals in passing through regulated market, and the

traditional supply chain consists of producer, preharvest contractor, commission agent, wholesaler, retailer and consumer.

The regulated market in Andhra Pradesh has an elected market committee supervising marketing. After changing hands several times, this product reaches the final outlet which is a traditional urban market known as Purna Market as selected in the study (see [Appendix 7](#) for details). Farmers, commission agents/wholesalers, retailers and consumers make up the chain.

11.3 Market Performance

The quantified indicators in [Table 11.1](#) clearly suggest that efficiency increases when product reaches the user through the DM channel. For every rupee fetched for a unit of produce by the farmer, the gross marketing cost ranges between 13 paise in Andhra Pradesh (banana) and 82 paise in Punjab (kinnow), and in all the cases this share is considerably lower than it is in the traditional channel. It is readily observed that total marketing costs are significantly less under DM ([Table 11.2](#)), though the farmer's share goes up. The price magnification factor is high at 2.34 for brinjal which appears much larger in DM compared to the traditional channel. Although direct marketing suffers from limitations as a choice, the scale of marketing is found to be relatively higher in all cases.

11.3.1 Gains for Agriculture

In Andhra Pradesh the price received by a farmer is more under DM for banana but less for brinjal, but when wastage and rejection are taken into account, DM stands undoubtedly superior to the traditional channel with the adjusted net price being

Table 11.1 Marketing efficiency in direct marketing

	Units	Andhra Pradesh		Assam	Punjab
		Banana	Brinjal	Orange	Kinnow
Marketing scale	Rs '000	2,374.00 (2.16)	726.00 (1.27)	85.50 (1.20)	906.00 (1.21)
Total farmer's price	Rs/100 kg	425.54 (1.42)	1,319.55 (0.88)	1,469.00 (1.52)	1,296.00 (1.51)
Net adjusted farmer's price	Rs/100 kg	374.78 (1.72)	1,143.72 (1.08)	1,101.00 (1.14)	1,030.00 (1.20)
User's price	Rs/100 kg	425.54 (1.09)	1,319.55 (0.53)	2,000.00 (1.0)	1,873.70 (0.99)
Price magnification	Ratio	1.14 (0.64)	2.34 (2.03)	1.48 (0.79)	1.82 (0.83)
Gross marketing cost					
Per rupee fetch by producer	Rs	0.131 (0.14)	0.34 (0.30)	0.48 (0.42)	0.82 (0.68)
Per rupee paid by user	Rs	0.12 (0.21)	0.03 (0.05)	0.32 (0.60)	0.45 (0.83)

Source: Computed from survey data

Note: Figures in *parentheses* are ratios to corresponding estimates in traditional channels

Table 11.2 Farmer gains from direct marketing

Measures	Units	Andhra Pradesh		Assam	Punjab
		Emerging channel			
		Banana	Brinjal	Orange	Kinnow
Productivity	Qtl/ha	583.38 (0.86)	97.13 (0.80)	163.77 (1.03)	230 (1.11)
Profit	Rs/Qtl	185.3 (1.47)	433.43 (1.08)	1,130.29 (1.67)	815.3 (1.28)
Returns from land	Rs '000/ha	108.1 (1.26)	42.1 (0.86)	1.32 (1.21)	1.87 (1.42)
Marketing cost share of farmer	% marketing cost	100 (1.4)	100 (1.7)	100 (-)	100 (-)
Channel dependence	% marketed	99.75 (1.01)	93.65 (1.07)	96.3 (0.96)	100 (1.0)

Note: Figure in *parenthesis* is ratio to corresponding average of traditional marketing channel. *Blank* is left where there is no positive entry in the traditional channel

higher (Table 11.1). However, the land productivity is lower under DM in Andhra Pradesh, and as a result, the net returns from land are lower under DM than under traditional marketing for brinjal (Table 11.2). In Assam and Punjab where specialization of functions is partly maintained due to the delegation of marketing task to the representative group or to wholesalers, the farmer appears to gain from the new DM model in terms of price received, productivity, returns and profit. Farmers, however, bear large parts of the marketing cost in DM (Table 11.2). In most cases preharvest contracting is the traditional practice in which the trader bears all of the marketing cost. The participants depend on the channel almost entirely.

11.3.2 Do Consumers Gain?

Consumers gain moderately from lower prices under DM as seen in Table 11.1 especially significantly in brinjal, although they pay a premium price in the DM channel for banana in Andhra Pradesh. In Punjab and Assam consumer price is same in both channels. The freshness of product is another aspect of consumer's gain which is reported to be significant.

11.3.3 Price Fixation and Dissemination

In traditional marketing, prices, fixed by open auctions or bids, are in principle decided by the dynamics of demand and supply, though in reality price determination is subject to power equations in regulated markets. In Assam even systematic auctions hardly take place. Preharvest contractors in Assam and Punjab and licensed commission agents in Andhra Pradesh are powerful in setting prices in the traditional channel. In the emerging channels there is an attempt to extricate oneself from the dominance of preharvest contractors or the APMC licensed commission agents.

Price determination in RB in Andhra Pradesh is methodical but not based on bargaining. The estate officer (EO) visits the RB in the early hours every day, notes the prices prevailing in wholesale and retail markets in the city and, in consultation with the market committee, fixes the prices in the RB at a level that is about 20 % higher than the wholesale market but lower than local market rates. The prices are announced through public address system and displayed. There is no auction, but consumer may point out any anomaly in prices.

In Assam the quality of the product and market situation guide mutual negotiation in venues which are generally the regulated markets, but information of prices prevailing elsewhere is crucial for such negotiations to be meaningful. This information is gathered personally by farmers from other farmers and commission agents and traders. There is no report of prior agreement, and prices are determined at the time of sale. However, as groups, farmers have superior information advantage as well as greater bargaining strength. Mutual bargaining or auction is possible in FEM in Punjab, and prices are decided at the time of sale. However, in the FEM traders also act as agents between the purchasing traders and the farmers. These agents, though quite different from the APMC commissioned agents, have a say in the bargaining and their presence is often preferred by the buyers. The AGMARKNET of the government has not served in providing useful information. Thus, the presence of multiple channels including the traders of the regular sort is important in promoting healthy competition by generating price discovery. No conflicts were reported in the channels, and prices were as expected if not higher as in Assam.

11.3.4 Disposal and Rejection

A major difference among cases is evident in the disposal pattern. The effective price can only be measured by the average price over all the marketed amounts taking account of wastage and rejection. If rejection rate is high, the effective price is likely to be far lower than the official price in the specified channel.

In Andhra Pradesh the sample farmers in DM category bring all their surplus products to the RB, but when they fail to sell the whole consignment, the rejected surplus either is sold elsewhere at a lower price or is thrown away. Rejection is common to both types of market channels, and in the case of brinjal, the performance in that respect is better in DM than in traditional marketing (see [Table A.28](#)). In Punjab too there is no channel diversification evident, and all products are brought to the specified channel barring a minimal reservation for home consumption. However, rejection is miniscule in the emerging channel, while a small portion (1.18 % of marketed amount) is sold outside the traditional channel due to rejection. Wastages reported are also low in both channels though insignificantly more in the emerging channel.

In Assam on the other hand, the choice of market channels and the venue of disposal are quite diversified. No sampled farmer in traditional channel actually sold in the regulated market, which is not really surprising given the unsystematic

manner in which the regulated markets are reported to operate in the state, but curiously, over 75 % of the orange farmers under DM sold in the regulated market. Farmers in the traditional channels however sold mostly to the commission agents at their doorstep. The DM farmers diversified their sales, selling only 58 % through the producer group. The rest is sold directly in the local markets. All products are marketed in the first 2 months after harvest in both channels. Although losses are less at 9 % in the emerging channel than 19 % in the traditional one, the small quantity of purchases in the DM remains a leading constraint for the development of the channel.

11.3.5 Wastage

In Andhra Pradesh postharvest losses are more in the traditional channel between the two channels. The lack of on-farm storage facility is a leading cause (especially for banana) followed by losses in transit. Losses occur both before sale and after rejection in the market.

In Assam losses in transit are largest (over 5 % of production) in both channels, and the channels are vulnerable to moderate losses at the retail stage, while on-farm losses are minimal. Marketing losses in storage are substantial (8 %) in the traditional channel. Postharvest losses are mostly attributed to the perishable nature of orange, lack of storage facilities and long distances from the final market. In DM waiting for better prices is an added reason. Although kinnow is vulnerable to several natural factors, the investigation did not report any on-farm wastage. Transit losses followed by retail losses were only reported, but the total loss in the emerging channel was only a little over 1 %.

11.4 Perceptions of Market Agents

Location can be a severe limitation for the success of the DM model as distances from both producing and consuming centres are important for success. The proximity to the market is a key factor influencing the choice to sell in the DM channel. Perceptions of stakeholders and their choice are influenced by the location as well as other associated factors.

In Andhra Pradesh, the farmers surveyed found the market at distances of 10–25 km. It was also observed that due to the development of the real estate business, the city contours are changing over time, and the catchment of the RB is spreading wider as land use in peri-urban area is transformed. The farmers also have started facing labour problem for the same reasons. Road conditions were rated as average by nearly all respondents. In Punjab 60 % of the respondents had to travel more than 50 km to the market, and none of them had the market within 10 km of their reach, but 60 % rated the roads as good and 40 % as average. Half of the

respondents in Assam were located between 10 and 25 km away from the regulated market (where transaction takes place) and the other half even further away, but as in Punjab the road condition was rated between good and average. The traditional channel sellers in Punjab and Assam assigned the marketing task to the preharvest contractor.

The farmers in Andhra Pradesh did not report any access to godown, cold storage and auction facilities in the RB, but the facilities for sorting, weighing and overall supervision were average. Although such facilities were mostly available in the traditional market, their standards were rated average if not bad. Rudimentary facilities of communication such as telephone, banking and computing were available in the traditional markets but not in the emerging channel market place.

In Assam poor facilities for cold storage and godown affected both groups who used the regulated market, but supervision in general and loading, sorting and auction facilities were average. No presence of facilities like telephones, banks and computers was reported. Since preharvest contracting is common in the traditional channel under study, the weaknesses affected the traders more than the farmers, but for the emerging channel participants, the problems were added difficulties to the sellers who had to devote time for farming also.

Respondents in Punjab who used the same APMC market too had poor access to storage facilities, but they rated the auction arrangement and supervision as good and also enjoyed the privilege of telephone, banking and computer facilities. Overall, in all cases, participants in both channels were equally afflicted by the standards of the marketing infrastructure, but the farmers were themselves affected when they resorted to direct selling.

Except only one case in Andhra Pradesh, no one reported taking loan from the traders who purchased their products. In Andhra Pradesh farmers depend on both moneylenders and institutional sources such as banks and cooperatives, but the dependence on moneylenders is more among the small farmers, though this dependence is reduced in the emerging channel. The farmers in either channel in Assam did not report having taken any loan from institutional or non-institutional sources, but 74 % of the producers in the traditional channel reported having taken input advances free of interest of fertilizers and pesticide from the commission agents. In Punjab, all respondents took loan from banks and cooperatives, while moneylenders, friends and relatives were supplementary sources, but none of them in any channel availed credit or input advance from their buyers.

Interactions with traders and commission agents as well as with other farmers and acquaintances brought market information to farmers in Punjab, but AGMARKNET's role was not reported. In the emerging channel the price fetched mostly exceeded their expectations, and there was no evidence of prior agreement. No conflicts were reported and formal receipts were issued. In contrast, some farmers had problems with mediating traders in the traditional channel regarding recovery of due and fulfilment of commitment, but no conflicts on quality were recorded. Reports on market information and experience were similar in Assam.

In Punjab and Assam farmers were aware of the nature of the supply chains and the next links in the chains in which they operated. They were more concerned

about the prices they received than the intermediary's margin. Higher prices attracted most participants in FEM, but habit and social influence were also factors. Besides, longer waiting time and hidden costs discouraged their return to traditional market. They however complained that even in the direct marketing, the buyer preferred to buy from traders and not from farmers. Selectivity of the buyer was also their problem. Perhaps the proficiency of the 'agents' is valuable in substituting the functions of sorting and grading of products that is not possible in the traditional and direct marketing channels. Respondents in both Assam and Punjab expressed that exports could help the market. However, the direct marketing channel was still perceived to be relatively weak and needs to draw participation with government support in storage, transport, credit and promotion of exports and food processing. The main constraints were reported to be small volumes of purchase and quality standards demanded.

Consumers in Andhra Pradesh found the RB was preferable to other sources like the wholesale markets, retailers and street vendors because of the reasonable prices and good quality of products offered. Reliance Fresh (another emerging channel) was their second choice. Both these outlets were located at convenient distances from the respondent buyers' residences. The prices were satisfactory, but they were rising on account of increasing distance from growing areas. The main complaint relates to the demeanour of the farmer-seller towards the customer which falls short of other channels and irritates the consumers. It appears that the lack of training in marketing is a limitation in DM. Also other stalls are mushrooming around the RB illegally, and it is reported that some bulk buyers like hotels are encroaching as buyers to corner the higher-quality products. Some complaints about poor infrastructure (holes in the roads, poor garbage disposal) and weak security (leading to thefts) are already apparent in this emerging market. In the traditional market Purna Bazaar in the same state, the people showed favour of the channel for the quality and variety of products, low prices and the option to bargain which is not there in the RB and most of all for the location (RB was not near at hand). The market however is said to be congested and unclean especially in the rainy season.

11.5 Who Participates in the Emerging Market?

In Andhra Pradesh and Punjab, DM has a greater coverage of small farms. A large farm (above 4 ha) could not even be located among participants in Andhra Pradesh (Table A.24). The average farm size is lowest at 1.22 and 1.24 ha for brinjal and banana, respectively, in Andhra Pradesh and higher at 2.7 ha in Assam and is large at 8.3 ha in Punjab where the average farm size itself is large. However, the average size is smaller in the emerging marketing channels in Punjab and Andhra Pradesh than in the corresponding traditional channels. It is also fairly inclusive in covering households with meagre assets, lower education and female heads. Socially, however, the representation of marginalized groups in terms of religion and caste was poorer than the sample of traditional channel participants.

Table 11.3 Sample households (%) in direct marketing channels with social and economic disadvantages

	Andhra Pradesh		Assam	Punjab
	Banana	Brinjal	Orange	Kinnow
Small and marginal farmers	80.0 (1.7)	80.0 (1.5)	44.0 (0.7)	3.1 (1.4)
Backward/minority	0 (0.0)	0.0 (—)	0.0 (—)	30.0 (0.8)
Not owning a motorcycle	88.0 (1.6)	84.0 (0.8)	70.0 (1.0)	0.0 (—)
Not owning a mobile phone	0.0 (0.0)	0.0 (0.0)	8.0 (1.0)	20.0 (1.4)
Not owning a pump set	4.0 (0.6)	100.0 (1.0)	70.0 (0.9)	50.0 (1.5)

Notes: Small and marginal farmers are farmers operating less than 2 ha land, backward castes are scheduled castes and tribes, and minority is mostly Muslim. In Punjab Sikhs are not included in minority. Figure in *parenthesis* is ratio to corresponding average of traditional marketing channel. *Blank* is left where there is no positive entry in the traditional channel

All the farmers participating in DM own mobile phones in Andhra Pradesh when none in the traditional channel does. In the case of Assam, the gap between the two sets of households is narrow, but the DM households have a minor advantage in many indicators such as the average farm size, asset ownership and coverage of female-headed households. Most households have access to mobile phone in both channels, and although a higher share of DM households own a computer, no access to the Internet is reported in any case. The data in Table 11.3 suggests that the DM channel is largely inclusive in participation, but the differences in profiles are not significant. In Punjab the participants are more inclusive of small farmers and those deprived of mobile phone and farm asset. However, both groups in this state are endowed relative to the other sample states, and 40 % of the participants are found to own a computer, 60 % to own a four-wheeler and all 100 % to own a tractor.

11.6 Farming Practices

Organic fertilizer use is common among farmers in both channels in Andhra Pradesh, but chemical fertilizer is used only by those in the emerging channel (DM) in the case of banana. In Assam all farmers use both organic and chemical fertilizers. In Punjab organic fertilizer use is not reported at all. Labour hiring is more among DM farmers in Assam but less in Punjab where family labour is used more intensely in DM, but there is no report of hiring in Andhra Pradesh.

Land for growing the specified crops is wholly owned in the DM channel in Andhra Pradesh and Punjab, although some leasing is reported by the non-participants. In Assam both groups report nominal (less than 2 %) leasing. None of the farmers in any state report organic certification or using organic pesticides. No farmer also reports using sprinklers or drip for irrigation, but most of them use pump sets in both states. All orange farmers in Assam use sprayers. There is no report of on-farm storage or processing.

Table 11.4 Farming practices of producers under direct marketing

Measures	Units	Emerging channel			
		Andhra Pradesh		Assam	Punjab
		Banana	Brinjal	Orange	Kinnow
Chemical fertilizer	Kg/ha	16.5 (—)	0 (—)	141.6 (0.96)	720 (0.99)
Organic fertilizer	Kg/ha	545.8 (0.42)	29,633 (1.33)	129.6 (1.10)	0 (—)
Hired labour	% of households	0 (0.0)	0 (0.0)	94 (1.15)	76 (0.91)

Note: Hired labour in Punjab is share in total labour cost

11.7 Assessments

In the three states studied, direct marketing is conducted in three different ways and has varying implications. In Andhra Pradesh and Punjab, there is a complete dependence on one channel, even though the rejected products have to be disposed outside the specified channel. Channel diversification is reported only in Assam. The regulated market is used as the venue in Punjab and more remarkably also in Assam. Direct marketing draws small farmers especially in Punjab and Andhra Pradesh and appears inclusive.

The market efficiency is higher in DM despite the fact that the producer bears the entire cost of marketing. Shortcomings of infrastructure and reliable facilities are more important constraints for farmers in DM who replace PHC. Price discovery, in principle, can rely on auctions and mutual bargaining which is a merit of the model, but in Andhra Pradesh the price is set by market authorities using benchmarks from the regulated markets. The lack of training in marketing is a serious shortcoming not only in respect of customer relation but also in functional aspects for which the buyer looks for proficiency. To regain credibility there is a need for training as well as infrastructural support for grading, sorting and assessments of product quality. Nevertheless, lack of specialization remains to be the main limitation of this method of marketing, compromising gains from division of labour especially when marketing has become a developed subject itself. The same limitation is likely to have its toll on productivity. DM however appears as a promising option for those who desire to avoid the traditional channel but cannot join the other emerging channels.

Chapter 12

Contracts with Local Traders in West Bengal

In West Bengal the channel studied as emerging is much less ‘emerging’ in character compared to other states and deviated only marginally from the traditional ones prevailing at least in the same region. The buyers were new but indigenously evolved new traders who are local youths devoted to mitigating farmers’ marketing costs and responsibilities rather than organized bodies.¹ The producers sold without having to negotiate with the familiar preharvest contractors and commission agents and exercised the option of reducing their dependence on the local powers.

12.1 Background

Agriculture in West Bengal is mostly rice based, and cultivation is conducted on small farms by mostly tenant farmers, left in the legacy of the ‘permanent settlement’ land tenure of the colonial government. The eastern region in India was late in being covered by the technological development known as the green revolution but today receives special attention under the ‘Bringing Green Revolution in Eastern India’ programme. West Bengal however witnessed another and not less remarkable revolution that in land reforms termed as ‘Operation Barga’. The tenurial security offered by this movement coupled with technological uplift of irrigation facilities created an environment for agricultural development via higher crop productivity, cultivation of multiple crops and higher farm incomes.

Respondents of the West Bengal study further allude to ‘the implementation of the Fast Track Land Reform Programme (FTLRP) commenced in June 2000’ that has ‘ushered in a new era in terms of markets and marketing channels for agricultural services, inputs and outputs’. The important difference of the path taken by the state of West Bengal from many others and the deviation from the ‘supremacy of

¹ Investigation for collecting primary information is conducted by the Agro-Economic Research Centres (AERCs) in the Visva-Bharati, Santiniketan, West Bengal.

the private sector and minimization of the government' spirit espoused by the proposed APMC Act is clear. West Bengal is thus at variance with most of the other states taken up under this study.

'Marketing during the FTLRP era was one characterized by strong government interventions with partial and sometimes complete regulation along the value chain' (Sarkar and Mondal 2011). With this background, a sketch of possible and potential evolvments is offered by this case study.

12.2 Market and Market Reforms

West Bengal has the same marketing structure in place as that outlined in the APMC Act 1972 and is yet to amend it to allow new innovation to seep in despite several expressions of interest in this direction. It is felt that the New Agricultural Policy 1995, formulated in the wake of liberalization drive in India, to 'encourage private investment in agriculture and promote high value crops for exports', would be at the expense of food crops or food security. While the amendment of the Act is meant to invite domestic multinational companies, whether farmers and others actually involved in agriculture would benefit is doubted.

It is however apparent that latent even in the existing legislation are considerable possibilities of change. That there are loopholes in the marketing system leading to high intermediary margins, poor efficiency and low producer returns and there is a case for bringing professionalism and competition in the market is acknowledged by the state, but confidence in the proposed legislation is lacking (see [Notes](#)).

The market functionaries traditionally include agents like traders, commission agents, brokers, weighmen, measurers, surveyors and warehousemen who carry on business for the specified market with a valid licence. While reformed marketing patterns are yet to be visible, variations are noticed in marketing of fruits and vegetables where the enterprise of local traders and redesigning of the supply chain relieves farmers of marketing cost. Recently, there is an expression of interest in favour of direct marketing and creation of farmer's markets.

12.3 Sample and Methodology

With no amendment of the APMC Act in West Bengal in sight, no alternative channel for marketing has developed yet. No presence of corporate entry was marked by the investigation. The closest we got to was an indigenously evolved channel for marketing a vegetable called arum. It is a far cry from the corporate or multinational company intermediated restructuring of the market chain seen in some of the other states considered in this study.

In this region arum is not a widely consumed food item, and even in the state in this region, arum is marketed only in the specific way. So a traditional channel for the same product could not be studied as a contrast case. The investigating centre however presented the case of mustard, portrayed as the traditional channel, as a reference, although it is hard to compare the two cases in many ways. There is also no emerging channel for mustard that is evident. Due to the absence of a simultaneous prevalence of both an emerging channel and a traditional channel, a complete assessment is impaired. Also, since mustard is converted to edible oil before selling to the consumer, the terminal price considered is the price paid by the processor.

Primary data is collected from Kandi block of Murshidabad district for both the crops. The terminal prices are the prices that the consumer and the processor pay, respectively, in cases of arum and mustard. Details of the crop arum grown in marshy soils and mustard, a major oilseed, are provided in the appendix to Chap. 7. The households in the sample area show preference for kharif and boro rice as the main crops and for arum (kharif) and mustard (rabi) are only minor cash crops. The two crops occupy 13 % and 9 %, respectively, of cropped area in the sample farms. Murshidabad is the largest producer of rapeseed-mustard, though the crop is also grown in several other districts.

12.3.1 Sample District of Murshidabad

The selected district of Murshidabad on the banks of Ganges is fertile and receives copious rainfall in monsoon. The district is famous for its history, culture, tourism, silk and crafts and has a high population density with a large minority community (Table A.4). Rice is the dominant crop grown mostly in the main kharif season, though summer rice (boro) is also important. The average farm size is very small at 0.74 ha, and 95 % of the farmers operate less than 2 ha of land. More than 70 % of the land is irrigated mostly by wells.

12.4 Marketing Method

Any marketing done is mediated by traders in the traditional market, and a large part of the marketing cost is borne by the farmer. The regulated markets are reported to be congested with intermediaries and are trader dominated with weak linkages between producers and consumers, poor road connectivity and underdeveloped infrastructure in the markets. Cooperative organizations are inadequate, and the private sector is not attracted to participate with its own resources. Reformed channels are yet to be formed. Mustard, largely raised as a subsistence crop in the region, is stored in jute or polythene bags in farmers' houses and sold in traditional ways though not through the regulated market.

In some fruits and vegetables, a different type of marketing system is becoming popular in which a farmer sells the product at the field level to a buyer who is a trader who is willing to bear all the responsibilities of marketing, starting from harvest to the ultimate sale of the product. This channel is studied in the absence of development of any sophisticated emerging channel. The channel does not eliminate nor reduce the traders' margins but replaces the existing power blocks by new agents. The farmers 'sell' out their entire arum covering area to the trader at pre-settled price by a contract. The trader then makes all arrangements for lifting, packing and marketing to the wholesaler. The entire crop is sold at the field level, and no storage is required on the farmer's part.

At the stage of maturation, the farmer 'sells' out all the product to the trader at pre-settled prices specified in rupees per hectare. The trader incurs all packaging, lifting and marketing cost and is the main link between the farmer and the buyer who is the wholesaler. The farmer needs no storage facility and bears no part of the marketing cost. Even the cost of harvesting is borne by the trader. The entire crop planted is sold at field level.

12.4.1 Traditional Marketing

The control channel for selling mustard, treated as the traditional channel, involves selling in local *haats* rather than regulated markets, and the crop concerned is mostly subsistence crop supplementary to the staple rice. Any marketed surplus for sale is small. The poor conditions prevalent in the regulated markets, distance from the study area and the long chain of intermediaries have discouraged the sample farmers from selling in the regulated markets.

Thus, admittedly, specifications of both the channels are not entirely distinct. While the emerging channel has desirable properties of reducing marketing cost incurred by farmers by field level disposal, it still involves private and unorganized traders, and the chain merges with the traditional channel at the wholesaler level. The channel deemed to be traditional also involves transactions outside the regulated market.

12.5 Market Performance

Market inefficiency is low for mustard, and even for arum the gross marketing cost does not exceed the net farmer's prices received. Correspondingly, the price magnification is more in the emerging market (Table 12.1). The efficiency difference may be explained by the more experienced, convenient and professional way of marketing mustard which shows up as considerably lower amounts of cost borne by intermediaries and margins generated compared to arum in relation to the respective product prices. It must also be kept in mind that the marketing of mustard

Table 12.1 Marketing efficiency in West Bengal

Measures	Unit	Mustard	Arum
		Traditional marketing channel	Emerging marketing channel
Marketing scale	Rs 00000	6.53	26.27
Total farmer price	Rs/'00 Kg	2,876	548
Net adjusted farmer price	Rs/'00 Kg	2,850	548
Terminal price	Rs/'00 Kg	3,439	1,080
Price magnification	Ratio	1.21	1.97
Gross marketing cost			
Per rupee fetched by producer	Rs	0.21	0.97
Per rupee fetched by user	Rs	0.17	0.49

Source: Computed from survey data

Note: Prices are not comparable between the channels

Table 12.2 Farmer's gains from the channels in West Bengal

Measures	Unit	Mustard	Arum
		Traditional marketing channel	Emerging marketing channel
Productivity	'00 Kg/ha	14.34	242.04
Profit	Rs/'00 Kg	530.93	318.55
Returns from land	Rs 000/ha	7.61	77.10
Marketing cost share of farmer	% marketing cost	24.64	0.00

Source: Computed from survey data

Note: Productivity and profit are not comparable between the channels

in this analysis is truncated at the processor level so that retail level costs and margins (relating to mustard oil) are not considered. The limited commercial motivation of farmers confines them to only the most convenient modes of selling as possible.

Despite the lower price of arum, the scale of marketing per farm household is considerably higher than in mustard whose cultivation is motivated by the need for family consumption. No detailed data on product disposal is provided in this investigation, but it is clear that mustard is mostly consumed at home and only the surplus is sold in local markets, whereas all arum product area is 'sold' out to the traders.

12.5.1 Do Farmers Gain?

The farmer in the emerging channel is altogether relieved of the burden of marketing cost, whereas the mustard farmer shares nearly 25 % of the marketing cost in the chain (Table 12.2). Given the limitation of comparability, no firm conclusion can be made about net farmer price, productivity and even economic gains made by farmers. However, arum marketed in the emerging method appears as a lucrative

option offering Rs 77,000 per hectare, which is 10 times that of mustard. The profit per quintal is however less. The farmer retrieves 51 % of the consumer price in the emerging channel and 83 % in the traditional channel.

12.5.2 Wastage and Disposal

Losses are made mainly at the stage of harvesting and storage. Smaller amounts are lost at the retail level for arum. Wastage occurs in threshing and storing mustard. All farmers attribute losses to the outdated harvesting method and to distance from the market (43 % in emerging channel and 62 % of traditional channel). Waiting for higher prices also leads to delayed harvest and product loss on field for arum.

Field reports mention that mustard is produced mostly for subsistence level and is stored for home consumption in jute or polythene bags. Arum is mostly, if not wholly, sold, the transaction taking place even before the harvest, and the product is disposed off from field. Thus, there is very little need for on-farm storage of products attributed to marketing needs. Long-period storage at home is however important for mustard but is done using traditional methods.

12.5.3 Price Information and Preference

In the emerging market, prices are essentially predetermined based on mutual negotiation over a range of functions (like harvesting, lifting) apart from marketing. Thus, this pricing like in any other contract farming agreement differs from simultaneous bargaining-based spot price determination which tends to be more informed of contemporary demand and supply conditions and relates to the product rather than functional aspects of the service. The investigations have not thrown any light on any dominant source of price information based on which the farmer negotiates. No mention is made of AGMARKNET. Like the choice of the channel itself, interactions with friends and relatives are information sources. Expectations are important for arum as prices are decided in advance.

12.6 Perceptions

It is fairly clear that two crops are grown for quite different reasons by the sampled producers. In both cases the crops under focus are supplementary products only secondary to staple rice. Besides, all the sample households also rely on off-farm employment. Between the two crops, arum has a higher share of the cultivated area in a farm than mustard and is grown to generate cash for sale, while the mustard grown is mostly used for consumption of the oil at home, to be stored and used

during the remaining part of the year. Not surprisingly, farm production value is much higher for arum than mustard despite the price difference. Marketing is thus not an important attribute for mustard cultivation among the respondents. Nevertheless, it is useful to note that marketing through regulated methods is not easy which may be a factor behind the lack of commercial interest. Marketing of mustard is confined only to an incidental surplus of production that the farmer disposes off in the most convenient way available, mostly in the local market.

Similar factors influence farmers in choosing the channels, the important ones being habit, influence of friends and relatives, time constraint (for selling in alternate channel) and for assured sales. In both cases, farmers sell in local sites rather than in the regulated market that is located at a distant place. The regulated market is of little significance to them. Hidden cost, poor infrastructure and distance keep farmers away from the regulated market. None of the farmers take credit, input support and implement from the buyers, and interestingly they have also never availed of credit from any formal or informal sources.

12.7 Who Participates?

The emerging channel participants are more inclusive of those deprived of access to land and farm assets than non-participants (Table 12.3), but the profiles are by and large similar between the groups. West Bengal, Murshidabad in particular, is endowed with a population that is diverse in social composition. In the samples presented, both Hindu and Muslim communities participate in the two channels, but there is an absence of the backward classes, though a large section hails from the newly formed category of other backward classes (OBC). A larger proportion of the emerging channel participants have below poverty line (BPL) entitlement than the traditional channel. The emerging channel farmers also seem to be less privileged with 31 % living in kutchha houses compared to 29 % in the other channel and higher shares of households lacking in assets like bullock carts and pump sets and other farm assets (Table A.33).

Despite these finer differences, both sets of households seem to be drawn from underprivileged sections, operating on tiny plots of less than 1 ha. The two groups are comparable in terms of the average sizes of holdings (0.6 and 0.8 ha) and the

Table 12.3 West Bengal sample profile: inclusiveness of the market channels

	Emerging marketing channel (arum)	Traditional marketing channel (mustard)
Small and marginal farmers	96	95
Backward/minority	21	24
Not owning a motorcycle	95	95
Not owning a mobile phone	45	52
Not owning a pump set	85	37

Source: Computed from survey data

share of marginal farmers which is large at 80 % and 78 %, respectively. Arum is preferred by marginal farmers. No large farms (above 10 ha) could be located, and the maximum farm size is merely 2.7 ha. The shares of female-headed households at 8 % and 7 %, respectively, for emerging and traditional channels are also similar.

Both groups have a similar 5 % share of households owning a two-wheeler vehicle, and no one reported owning a four-wheeler. A higher share of the emerging channel group owns mobile phones, though none has a computer or has access to the Internet at home. Asset ownership in terms of pump sets, tractor trolleys and land ownership is less among the farmers in the emerging channel. The households in both channels rely on both agricultural and nonagricultural incomes, and only about 65 % of the households report agriculture as the main occupation (Table A.34). No significant difference is visible in the age and years of education of the head of household and the education levels of the members.

12.8 Farm Practices

A comparison based on the reported statistics is likely to reflect the differences between the practices and the demands of two different crops and two different classes of people rather than channels. Thus, between the two cases, mustard seems to be cultivated with more intensive uses of chemical and organic fertilizers, irrigation and labour. We noted earlier that the arum cultivators who are also participants of emerging channel only seem to be less privileged in many respects. It is not surprising that these cultivators use less of organic and chemical fertilizers on their farms. However, they hire labour to a greater extent (Table 12.4). Irrigation endowment is more among the emerging channel farmers who also have a slightly higher share of leased land under cultivation, although both groups report leasing of land (Table A.34). Arum occupies 12 % of the cultivated land of the sample farmers in the emerging channel. The share of specified crop mustard in the traditional channel is less at 10 %. Arum is also more intensely irrigated.

Table 12.4 Farming practices of producers in West Bengal

Measures	Units	Emerging channel	Traditional channel
		Arum	Mustard
		West Bengal	West Bengal
Organic fertilizer	Rs/ha	1,135	2,213
Chemical fertilizer	Rs/ha	5,184	5,321
Pump sets	% households	15	63
Hired labour	Rs/ha	15,564	15,154

Source: Computed from survey data

12.9 Assessments on West Bengal

In West Bengal reforms are only nascent, but the channel addressed emerged with new properties even under the existing Act. Contracts are the cornerstones of the channel, although contract farming is highly unacceptable in this state, but the contractors being local traders, they are a far cry from contracts with powerful organized companies. It is not a total departure but a local deviation in the marketing chain. Due to the margins generated in the chain, inefficiency is fairly high. Price determination is also constrained by limited information. The disenchantment with long-standing traders, the faith placed on new entrants and the social value of self-employment prospects are the drivers of the initiative.

Notes

Hazard of Allowing Private Sector/Multinationals in Business

The risks of implementing the proposed reforms are cited as follows:

- (i) Proposed conditionality makes the constitution of the market committees less democratic and easier for contract farmers to gain entry.
- (ii) Local traders will be distanced from the private and special markets due to the requirement of making prescribed deposits to the committee besides the licence and functionaries like coolies, hawkers, transporters, pushcart workers, small and medium financiers and small retailers will be pushed out of the business as multinational and other big companies gain access.
- (iii) Giving multinational companies access to retail trade will jeopardize the employment of numerous street vendors as well as traders, hawkers, coolies and small farmers.
- (iv) While contract farming is meant to attract small farmers who are not in a position to invest in farming, in practice the contracts with big companies will hurt them in the longer run by making them dependent on external sources of food, compromising the ability of their land to produce food when the contract period is over and undermining their technical competency by replacing public extension with external prescriptions. Their poverty and food insecurity will further translate to greater migration to urban areas undermining these places and creating human crisis.
- (v) The demand for raising unfamiliar and new crops and the high standards expected of the producers from contract farming may not be practicable.
- (vi) With the reduced role of the government, the farmers are at the mercy of the sponsor companies especially in times of troubles like that of lower-quality products or overproduction.

- (vii) The powerful companies can manipulate the quality standards required if they desire to reduce purchases.
- (viii) The chances of farmer indebtedness increase as uncertainties due to production problems, possibility of contract violation from powerful sponsors and poor technical advice arise.

Chapter 13

Local Marketing Support in Bihar

Bihar has an open and an unregulated marketing system now, and so there are no emerging marketing channels clearly visible. New new kinds of intermediaries have however entered the marketing chain claiming to reduce the marketing margins and farmer's burden of marketing. As in West Bengal, the selected channel consists of local traders, who are perceived to be more reliable than the regular licensed traders are.¹ Bihar however offered an opportunity to study possibilities that arise in an unregulated market.

13.1 The Progression and Regression of Market Reforms

Several regulated markets with mandated market committees functioned in Bihar, but due to the acute scarcity of resources, attention was focused more on urban markets as farmers too depend on these markets. Traders dominated these markets, keeping producer prices low and volatile. In this circumstance, the small farmers found it particularly difficult to market products, especially horticultural products that were perishable. Nevertheless, initiatives to develop select wholesale markets using international finance suggested signs of progress.

A challenge was imposed when at the national level, emphasis shifted to value-added agriculture with a thrust on processing, marketing and storage, and a Model Act was circulated by the central government. The consequence was paradoxical. In response to the proposal, the state government of Bihar repealed the existing APMC Act in September 2006, but with no new enactment to follow, the regulation system became disbanded and markets became open and unregulated. In this situation, the fate of some of the initiatives already taken up with international finance became uncertain.

¹ Investigation for collecting primary information is conducted by the Agro-Economic Research Centres (AERCs) in the T.M. Bhagalpur University, Bhagalpur.

Meanwhile, the condition of the markets already created deteriorated because of lack of maintenance. Marketing continued to be a difficult process for all classes of producers and especially so for the small farmers.

13.2 Sample Details and Methods

Two blocks, Sultanganj and Nathnagar, in Bhagalpur district in Bihar were chosen as study area, and mango was the fruit crop, the changes in whose marketing were examined. Bihar ranks fifth in the production of horticultural crops in India, and mango accounts for half of the fruit area in the state. The centre identified a new type of intermediation consisting of reliable local traders who were replacing the traditional preharvest contractors and who undertook all responsibility for marketing the product on behalf of the farmers.

Admittedly, this intermediation falls at the border of the two categories delineated as traditional and emerging channels rather than any marked deviation from the traditional channel. Given the absence of emerging channels (like direct marketing, contract, private capital and retail chains) clearly visible in the state where the APMC Act has not been amended, an assessment of the channel can provide some insights on the changes taking place in the state and the alternate potentials of channel structure. As usual, a sample of farmers participating in the traditional channel of conventional type is drawn for contrasting and assessing the emerging channel (see Chap. 4).

13.2.1 Sample Region and Crop

Bihar is a fertile state endowed with river valleys and a subtropical climate supporting horticultural crops. Bhagalpur district in the south-east of Bihar is one of the oldest districts. It is fertile with alluvial soil of the Ganges plain where agriculture is the main occupation. Backward sections have a small share in the population, but over half of the population is below poverty line, and the average farm size is only 0.56 ha, with 83 % of farmers having marginal holdings and 94 % having holding smaller than 2 ha. The land is however mostly irrigated. Bihar has natural endowments suited for mango cultivation (see Chap. 6).

13.2.2 Methodology

Sample farmers are drawn at random stratified by farm sizes from lists formed based on interactions with local authorities and producers. Sample averages with respect to indicators related to socio-economic profiles, market performances and

farming practices are compared across the channels. Focus group discussions and interactions with other market functionaries add to the insight.

13.3 Marketing Mango

The lengths and structures of the chains that evolve in agricultural marketing depend on the type of product sold and the size of the market. Small farmers often sell in village markets or in small towns directly to consumers to avoid intermediaries, but for larger producers, the common practice is preharvest contracting (PHC). A survey finds that PHC accounted for sales by 55 % of the producer followed by merchants and retailers. Only marginal farmers sell directly to consumers. In rare cases, producers sell directly to processors.

In the traditional channel chosen, the preharvest contractors operate. They hail mostly from local or from adjoining areas, visit the mango orchards at the flowering stage to assess the volume of production and strike agreements with growers for a period of 1–5 years on per tree basis. The orchards are ‘sold’ for the period to these traders to enable the products to be sold in urban areas of the state. Besides the contractor, other links in the chain are wholesalers and retailers. Contracting reduces dealing with commission agents, but in turn the buyers sell to traders at the village level, and the product goes through different intermediaries to reach the consumer.

The emerging market channel considered involves contracting in particular with local and reliable individuals often selected from the producers’ own communities. These traders are entrusted to represent the producers, to collect mangoes from different growers, sort, grade and package and transport the products to markets in big cities not only in Bihar but in neighbouring states West Bengal, Jharkhand and Uttar Pradesh. These agents do not generally ‘purchase’ the tree or the orchard as in the case of traditional channel though this practice is not unknown. More commonly, they undertake to facilitate selling to distant buyers. Like the PHC, they pick up the product at farm gate, arrange to store the product often in open air (as they have no facilities of office or godowns) and sell in auctions. On selling the product, they make the due payment to the producers. It is worth mentioning that the development of roads is found to be closely associated with this trend of local contracting.

13.4 Market Performance

The scale of marketing, the net price received by the producer and the terminal price are all higher in the emerging channel compared to the traditional channel, but the channel may not be more efficient as the gross marketing cost per farmer’s rupee is not reduced in this channel relative to the traditional one where more established traders operate.

Table 13.1 Marketing efficiency of emerging channel in Bihar for marketing mango

Measures	Units	Emerging channel	Traditional channel
Marketing scale	Rs '000	76.15	47.11
Total farmer's price	Rs/'00 Kg	1,850.0	1,472.0
Adjusted net farmer's price	Rs/'00 Kg	1,782	1,455
Terminal price	Rs/'00 Kg	2,845.0	2,250.0
Farmer share in marketing cost	%	79.71	31.89
Price magnification	Ratio	1.610	1.550
Gross marketing cost			
Per farmer rupee	Rs	0.56	0.53
Per consumer rupee	Rs	0.35	0.35

Source: Computed from survey data

Table 13.2 Farmer's gain in Bihar

Measures	Unit	Emerging marketing channel	Traditional marketing channel
Marketing cost share	% farmer cost	16.31	4.49
Productivity	'00 Kg/ha	50.2	48.5
Farmer returns	Rs '000/ha	55.74	41.9
Farmer net profit	Rs/'00 Kg	1,433	1,099

Source: Computed from survey data

The intermediaries do undertake the responsibility of marketing the product, but the cost of marketing has to be collected from the producers on behalf of whom they work. The traders are not resourceful enough to exploit the potentials of scale. As a result, the farmer shares a large part of the marketing cost, with the sole intermediary sharing about 20 % whereas in the traditional channel a large number of intermediaries among themselves share over nearly 70 % of the marketing cost (Table 13.1). Crop productivity, the returns and profit fetched are however higher in the emerging channel adding to its charm (Table 13.2).

Thus there is no efficiency gain in the new channel, and the price paid by the consumer is 1.61 times the net price received by the farmer compared to a price magnification of 1.55 in the traditional channel. However, apart from the modest pecuniary implications, market performance may also be related to the farmers' subjective satisfaction of being less reliant on the exploitative relations with the traders.

13.4.1 Price Determination

Negotiating the price is one of the most difficult tasks in all advance contracts. The contracts are made at a preharvest stage when little information is known with certainty on volume and quality of production and on market demand. In some cases, additional leasing of land is done even as a price for availing credit.

Both producers and traders are poor, and the lack of finance and the low scale of transaction add to the costs. In general, the traders appear to be aware of the prices prevailing in market. The producers on their part rely on external sources for price information with other farmers, relative and friends being the prime sources in the traditional contracts and commission agents playing a more dominant role in emerging channels. AGMARKET has not helped anyone. The information on price is gained mostly at the time of harvest.

13.4.2 Perceptions

The traditional traders in PHC provide credit, and it is not unusual to get additional trees in lieu of the support. Generally, these traders offer a way of marketing to larger producers when capital is available, scale is large and location is centralized. They are often required to store the produce for a few days but lack storage space and store products on farm or at home. Finalizing negotiation is also difficult for the traders as prices have to be decided at an early stage when uncertainty is high. Management of the orchard is the responsibility of the contractor, but they have to rely on the producer since security is very important. The cost of watch and guards is a significant component of production cost. There is no report of contractors processing the product.

The local traders in the emerging market channel are a possible way for smaller farmers to dispose products in more difficult circumstances. This is reflected in the average farm size of the participants. However, these traders too face severe difficulties. Even less privileged than the traditional channel contractors, they have little capital and purchase only with advances taken from commercial lenders, and the credit needs to be paid back when the payment is realized. Their scale of operation is constrained by the lack of finance, and as a consequence, they bear higher costs of transport. They negotiate with producers on post-payment basis. Selling at open auctions in distant places, they face competition and resistances from local functionaries. They do not have their own trading places, storages or necessary accessories. They pay the producer by bank draft or by cash. The business is obviously risky and uncertain.

The business of the retailer is also not enviable. Prices are arbitrary, location specific and volatile. The vendors lack storage facilities for this perishable product. They sell at roadsides markets, keep no records and are also not obliged to pay any fees or taxes.

Credit is a most important input in mango production, and given the poor state of affairs in the credit delivery system, none of the agents questioned has reported taking loan from formal sources. Of the sample households, 26 % in the PHC (traditional channel) and 20 % in the emerging channel reported taking loan from the buyer. Intriguingly, these loans are taken not necessarily for production, but the credit also serves to meet family and social obligations.

Infrastructure encountered in marketing is reportedly poor. No storage facility is evident, and while the farmer in the traditional channel sells in nearby markets, emerging channel participants sell in distant markets through traders. In this situation, good roads are important. Transport cost is high owing to the bad roads and low scale of marketing. The farmers and traders desire to have improved communication facilities, refrigerated vans and terminal markets that the government can only create.

In most cases, the price received by the producer is less than expected (reported by 48 % in traditional and 44 % in emerging channels). Price agreement is made at the time of sale in the traditional market where the time of sale is long before harvest takes place, but in the emerging channel, 34 % of agreement is struck just before the sale. Only in very few cases, the agreement was not fulfilled by the trader, but a quarter of the case (24 % in traditional and 22 % in emerging channels) payment was received on several requests. In most cases, the producers expressed satisfaction with the merchants' integrity, but this reporting was much higher in the emerging channel. Receipts were provided in 88 % of the cases in the traditional sale and in 40 % cases in the emerging channel. There were a few reports of conflicts, more in the traditional channel, and these conflicts related to the size of crop, stage of ripening and payment modes. Low confidence on the merchant was expressed by 48 % and 56 % of the producers in the traditional and the emerging channels, respectively.

13.5 Participation

Comparing the two channels, it is noted in Table 13.3 that the emerging channel is more inclusive both in participation of small farmers (92 % against 66 %) and in asset poor farmers. That smaller farmers have chosen to switch to the channel is shown both by the noticeably higher share of small farmers in the channel and the average size of the participant's farm size which is 1.8 ha compared to 2.9 ha in the traditional channel. Participation is however associated with the ownership of

Table 13.3 Sample households (%) in market channels excluded from common privileges in Bihar

Attributes	Mango	
	Traditional marketing channel	Emerging marketing channel
<i>% of households in sample</i>		
Minority community	0	0
Backward classes	6	2
Not owning a pump set	64	78
Not owning a motorcycle	80	66
No mobile phone	40	0
Small and marginal farmers	66	92

Source: Computed from survey data

communication modes both physical (motorcycle) and informational (mobile phone). A more detailed look at appendix Table A.36 suggests that participants in the emerging channel may be more educated as the proportion of higher educated household members exceeds those in the traditional channel. The household head also appears to be more educated and also younger. Ownership of tractors is more among the emerging channel farmers, and the proportion headed by females is less. Interestingly, leasing of land is more common among the participants in the new channel.

13.6 Farm Practices

Cultivation in both channels is reliant on the use of technology including equipment, chemical fertilizers and pesticides. Ground waters being the major source of irrigation, water-saving sprinklers are also used and more in the emerging channel. The use of chemicals as fertilizer and pesticides is comparable between the channels (Table 13.4) and so is hired labour (assuming both sets of farmers face the same prices). Farmers in both channels resort to on-farm storage and on-farm processing. It is worth noting that the emerging channel producers are not only likely to be smallholders but tend to show greater proclivity to leasing in land; spending more on fertilizers; using more machines, fertilizers and storage devices; and hiring services of pumps, sprinklers and labour.

13.7 Concluding Remarks

In Bihar, marketing reforms are not yet legislated, and the market remains unregulated. As in West Bengal, the emerging channel traced in this study is one that comprises of more trustworthy indigenous traders who undertake various functions of marketing mango right from the field. The channel is found attractive especially to small but progressive farmers as it offers a way to escape the traditional preharvest contractors who have lost the faith of the producers and also as a route to reach out to distant markets when road connectivity allows. The efficiency gain over the traditionally experienced trader is however far from confirmed and the new traders appear to be resource poor.

Table 13.4 Farming practices of sample farmers cultivating mango in Bihar

<i>Farming practices</i>	Units	Traditional marketing channel	Emerging marketing channel
Chemical fertilizer	Rs/ha	1,120.50	1,135.00
Pesticides	Rs/ha	545.25	512.00
Hired labour	Rs/ha	2,320	2,395

Source: Computed from survey data

The state of marketing and the plight of the trader were deplorable in either channel. The disgruntlement evident in the traditional channel explains the shift to the emerging channel despite the patent lack of monetary benefits. Economic disadvantage of both farmers and traders including the new buyers and the retail vendors is glaring in situation.

Chapter 14

The Transition in India: An Integrated View

The assembly of empirical findings and insights from groundlevel studies in different areas of India presents the opportunity to take an integrated view to enquire whether different channels emerging in the aftermath of reforms are associated with lower marketing costs and whether shortening the channel can produce savings in the marketing cost. The reach of the new channels towards the relatively disadvantaged farm classes and the implications for associated issues like price determination, postharvest losses and farm practices also deserve a review. The crops, areas and channels under study are detailed in [Tables A.1 and A.2](#). It may be noted that in West Bengal, a state which has not legislated reforms, due to the nature of the data accessible, the two crops could not be compared in terms of all parameters for our purpose. The sample details are explained in [Chap. 4](#) which also outlines the method of analysis followed.

14.1 Variety of Channels

The variety that marks the departure from the familiar is something that is indeed striking. Today the producer takes part directly in the marketing function in a free and official way, but while the transaction takes place between a processor and a group of farmers acting in concert (orange in Assam), farmers in Andhra Pradesh also sell to final consumers individually. Farmers' selling to the next link or any other subsequent link in the chain is yet another variant of the direct marketing model found in Punjab.

Tie-ups as written contracts are made between the producer and the buyer well before the sale takes place, but in two of the cases studied (potato in Uttar Pradesh and Punjab), the buyer is a multinational processing company, while in the other two cases (potato in Assam and aonla in Uttar Pradesh), a local processor is the purchaser of materials. Mediation by a non-governmental agency to protect farmers' interest is yet another variation (potato in Assam) studied.

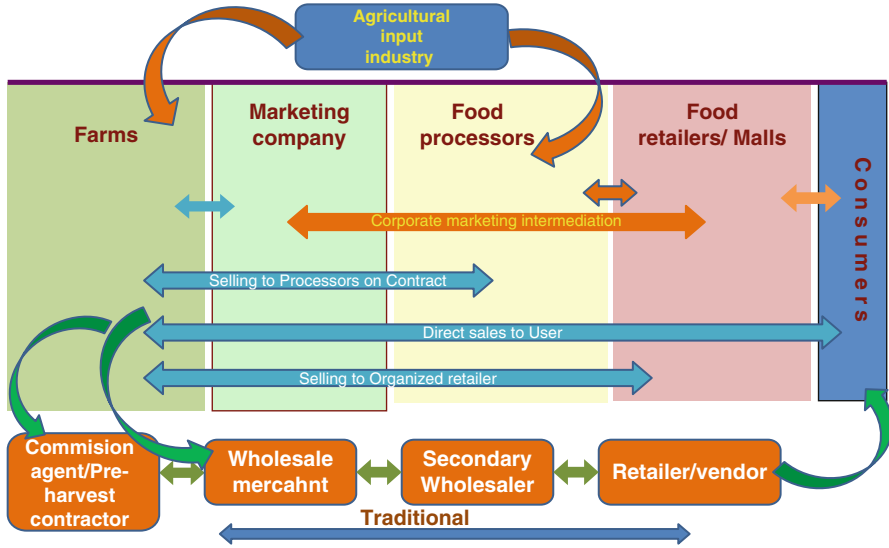


Fig. 14.1 Alternate marketing channels

The traditional channel is not avoided in the emerging market studied in Maharashtra (pomegranate, onion), Himachal Pradesh (apple) and Madhya Pradesh (soya bean) despite the fact that a large marketing company mediates, but in these cases, the sale is made to more resourceful agents in the traditional chain such as malls, processors and exporters, and the product reaches the consumer through a higher-end outlet rather than a typical urban retailer (pushcart vendors, local stores and wet markets). The computerized electronic portal hosted by a private company is the medium in one case (soya bean in Madhya Pradesh). In the two states, West Bengal and Bihar, that have till now not legislated reforms, locating a traditional channel was next to impossible, but nevertheless variant models could be identified in which no organized private companies mediated. Traders who had stepped into these channels enjoyed the trust of the producers rather than the market committees. Our studies on organized retail chains cover a non-profit state-promoted retailing organization as well as a large commercial retail company. The linkage between the producer and the consumer differs widely among the emerging channels studied (Fig. 14.1).

Thus, not in all cases the channel includes a profit-oriented company, nor all the traditional traders are necessarily excluded. The interface the producer faces may be the final user, an organized intermediary or one or more traders in the chain. In the direct marketing cases, the farmers cannot avoid marketing costs, and in fact in two of the cases, the entire marketing cost weighs on them. In some of emerging channels with a private company participating, the burden of marketing is generally taken over by the company, and the producer shares no part of the burden in some of the cases (apple in Himachal Pradesh, Maharashtra) though in others they are not entirely relieved. The first link, namely, the commission agent or the preharvest contractor, is bypassed in all cases.

14.2 Reduction of Marketing Costs and Gain in Efficiency

Marketing cost in the traditional channel depends on the nature of the crop marketed as well as a plethora of other factor including the state order, regional geography and infrastructure and the economic power of the traders.

Figure 14.2a and b shows that the average costs of marketing vegetables and fruits in relation to the price that producers receive (RGMCF) are comparable in our sample if soya bean is treated as a vegetable. Note that arum in West Bengal is not considered for the traditional channel. Muskmelon in Haryana is found to be the costliest for marketing among the select fruits at Rs 1.62 which is less compared to Rs 2 incurred for marketing tomato in Himachal Pradesh among the vegetables. In fact comparing the five leading crops in each channel categories, marketing appears more expensive for vegetables than fruits. Regional variation in the marketing costs comes out starkly when they are compared for the same crop, potato, in the traditional channel in the three different samples (Fig. 14.3).

Efficiency is undoubtedly gained by shifting to the emerging channels as apparent from our survey results. The summarized picture in Table 14.1 shows that savings in marketing costs (SMF, RSMF, SMU and RSMU) are affected in all the emerging marketing channels barring the trader-based ones.¹ Not surprisingly, the efficiency gain over the traditional channel at over 69 % is the largest in direct marketing from the producer's perspective, followed by contract and corporate intermediation. Contract farming performs better if the user's interest is the central concern. In both perspectives, channels made up of unorganized traders in the two slow-reforming states are the worst performing category, and there is a loss

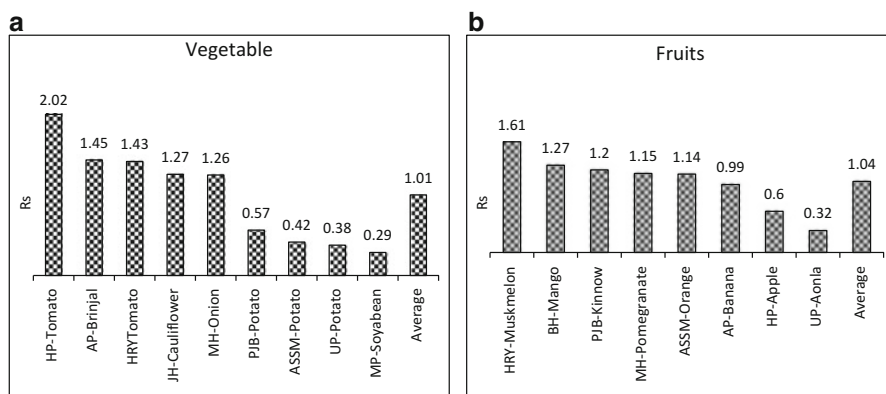


Fig. 14.2 Marketing cost per farmer's rupee in traditional channels

¹ See Chap. 4 for the acronyms.

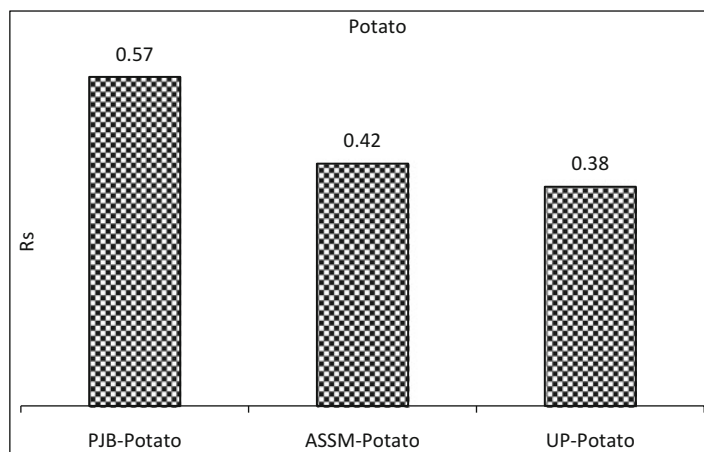


Fig. 14.3 Marketing cost of potato per farmer's rupee in traditional channels

Table 14.1 Gross marketing cost reduction in the emerging channels per farmer's rupee

	Per farmer's rupee		Per user's rupee	
	Quantum	Relative	Quantum	Relative
	Rs	%	Rs	%
Direct marketing	0.83	69.25	0.33	58.93
Corporate marketing intermediation	0.24	28.79	0.09	21.30
Marketing to processors on contract	0.27	63.90	0.18	71.57
Marketing to organized retailer	0.37	23.22	0.08	13.87
Marketing by local traders	-0.33	-44.59	-0.16	-44.93

Source: Computed from survey data

Notes: Marketing cost includes trader's margins and is expressed in value and also as value relative (%) to that in traditional channel. The figures are averages of channels

of efficiency in the emerging channel. Comparisons across channels showed that price magnification is higher in the traditional channel in all cases, onion in Maharashtra being the only aberration. However, the farmer's load is not always lessened. Farmers bear a higher share of marketing cost in some channels as in direct marketing where they are required to carry the product in person to the buyer without the support of middlemen. It is pertinent to note that the farmer's burden may not be fully captured by these monetized measures.

The averages shown in Table 14.1 however hide the variations across cases within each category of channels (Fig. 14.4). In contract all the cases reported suggest positive gains in efficiency though varying from 15 to 38 paise per each farmer's rupee, the most modest performance being presented in the case of potato marketing in Assam. Direct marketing too uniformly presents favourable impact on efficiency with more than Rs 1.40 being saved for every farmer's rupee in Andhra Pradesh. In corporate marketing, the performance is more varied, and interestingly,

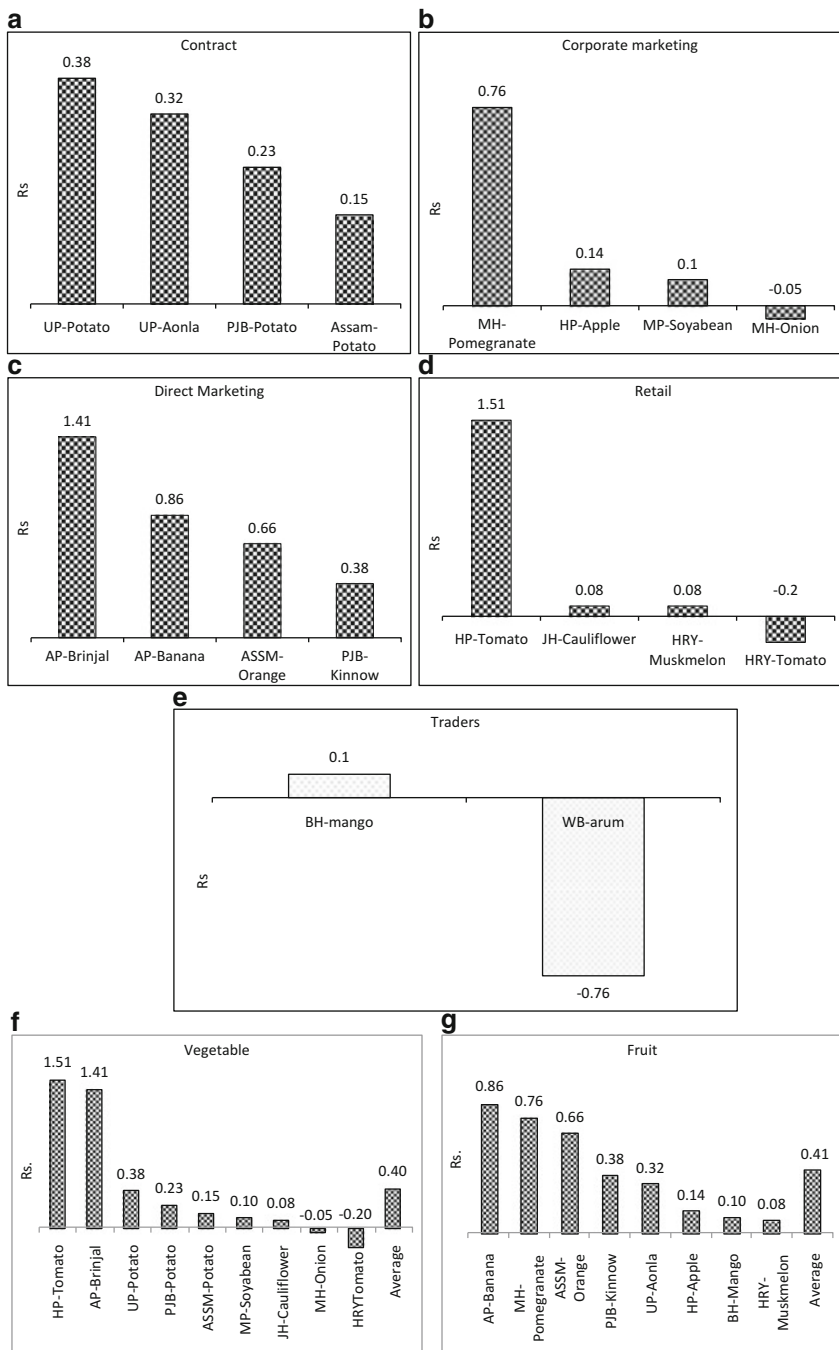


Fig. 14.4 Savings in marketing cost per farmer's rupee

even in the same state of Maharashtra, the same buying company offers higher efficiency gain opportunities for the fruit pomegranate, while the gain is actually negative for onion. This can perhaps be explained by the large, developed and even export-oriented market that already exists for onion in the state. Similar variation is also observed in the case of organized retail. In the trader-operated channels, the poor average performance is attributable mostly to West Bengal (where two reference crops are different) since Bihar shows a small gain.

The average savings are nearly same for fruit and vegetable (Fig. 14.4f and g), but variation is much larger among vegetables. While all the fruits under study showed positive efficiency gains from the new channel, in the case of vegetables, there are two cases in which emerging channels proved more costly for marketing than the corresponding traditional ones. Gains are also high about 140–150 % for some vegetable, while the maximum gain observed in this study was of 86 paise of marketing cost saved per each farmer's rupee for fruits.

14.3 Shorter Channels and Traders' Productivity

Shortening of channel length is associated with higher levels of development (Chap. 2). Vertical coordination within the chain will make many intermediaries with limited ambits of specialization redundant. In a labour surplus economy, therefore, vertical integration can be a double-edged sword which has the potential to displace the existing middlemen and create serious unemployment problems. Whether these displaced agents would be absorbed in the organized space created for the new entrant and its ancillaries is another question.

In India, the situation in the traditional and the emerging channels is diverse, and market performances are far from uniform. Between the two types of channel functioning in a place for a product, it is not easy to infer the relative superiority of any channel over the other. To the extent that emerging shorter channel serves in reducing marketing costs, it is likely to drive out the traditional functionaries. Table 14.1 shows that reduction of marketing cost per farmer's rupee ranges from nearly 70 % in the direct marketing channel to 23 % in the retail, but there is no savings in the local trader-based channel. These figures however are averages, but the disaggregate picture too largely spells out the same story (Table A.39) in Appendix 9.

Channels can be grouped by the degree of presence of private traders as reflected by the structure of the channel (Table A.38). Figure 14.5 shows clear ranking in both absolute and relative savings. Direct interface without intermediation produces the maximum savings, followed by channels only comprising of one organized private company indulging in marketing. Channels having a blend of both organized and unorganized private traders yield lesser savings, and channels with no presence of organized companies show the least savings. The saving in the cases of Bihar and West Bengal are actually negative, so in this group, the positive gain is brought about by the inclusion of the Farmer's Evening Market of Punjab.

14.4 Economic Gains for Agriculture

Net farmer price after deducting marketing costs incurred is relatively higher in the emerging channel (Table 14.2), but it is more important to note that the profit and the returns from land are higher in comparison to the corresponding traditional channel in the area. Productivity in agriculture is also higher though by a small margin.

Between fruits and vegetables, the returns are higher in the former case in both channels (Fig. 14.6), but the average returns are higher in the emerging channels, nearly twice in the case of fruits compared to 1.6 times in vegetables. Among the vegetable crops studied, tomato in Himachal Pradesh and onion in Maharashtra are most lucrative for cultivation for the new channels, but in the traditional channel, tomato in Himachal Pradesh yields low returns, while onion yields high returns in both channels. Interestingly, the same two states, Maharashtra and Himachal

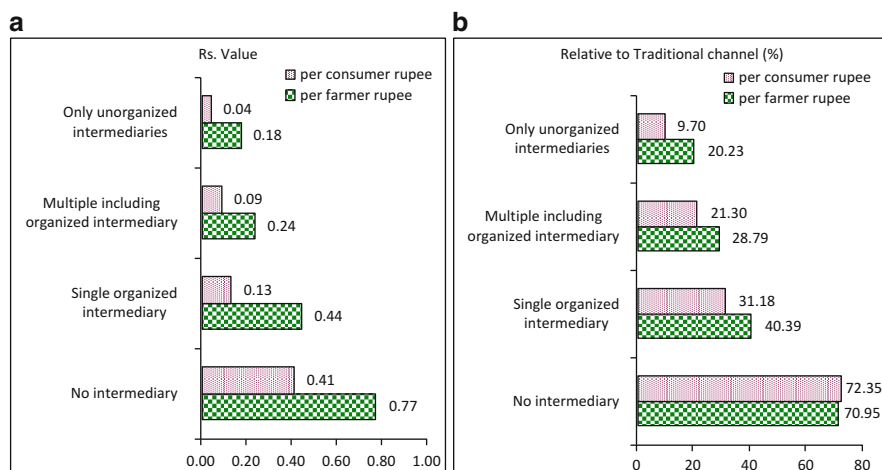


Fig. 14.5 Reduction in gross marketing cost in the emerging channels by channel length

Table 14.2 Average gains to agriculture across cases in channels (ratio to traditional channel)

	Farmer price	Marketing scale	User price	Productivity	Profit	Returns from land
Direct marketing	1.28	1.46	0.90	0.95	1.37	1.19
CMI	0.97	1.85	0.98	1.43	1.31	1.02
Contract	1.20	1.53	1.00	0.99	2.03	1.98
Retail	1.24	1.19	1.09	1.01	1.81	1.78
Trader	0.60	2.68	0.79	1.04 ^a	1.30 ^a	1.38 ^a

Source: Computed from survey data

Note: Comparison is not meaningful in West Bengal

^aIncludes only Bihar

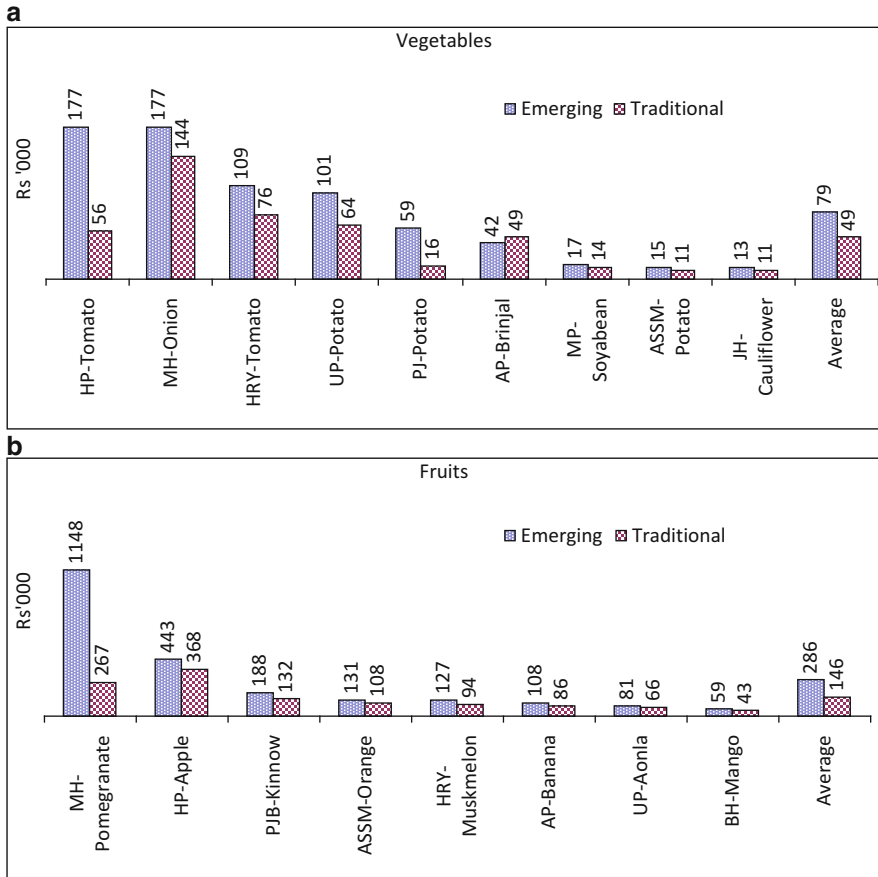


Fig. 14.6 Returns from farming per hectare of land cultivated

Pradesh, are found to lead in terms of returns from growing both fruit and vegetables in the emerging channel.

The terminal price is not necessarily lower, but whether consumers find the product cheaper or dearer than in the traditional channel is subjective and may be affected by the quality of the product purchased and the ambience of sale. Due to differential value addition and our specification, they are not essentially comparable.

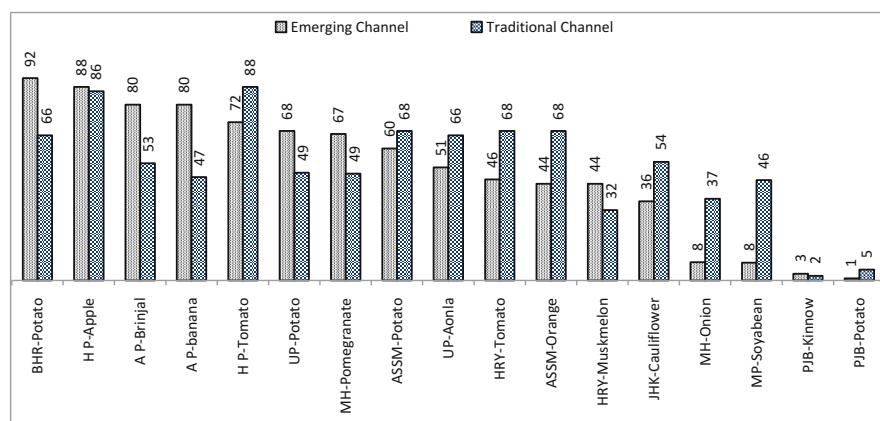
14.5 Participation of Farm Classes

The inclusion of smallholder farmers in any beneficial programme is a serious question for Indian agriculture as most farmers hold less than 2 ha of land. However, landholding is only one of the indicators of class among farmers, and it

Table 14.3 Inclusion of disadvantaged farmers in the emerging channels (share as ratio to corresponding share in the traditional channel)

	Smallholder	Backward classes	Not owning mobile phone	Not owning motorcycle	Not owning pump set
Direct marketing	1.31	0.38	0.61	1.15	1.00
Retail	0.88	0.84	1.07	0.97	0.94
Contract	0.81	1.26	0.43	0.82	1.28
Corporate intermediation	0.70	1.68	0.35	0.40	0.74
Trader	1.20	0.60	0.43	0.91	1.76

Source: Computed from survey data

**Fig. 14.7** Households (%) operating small farms

is important to consider ownership of assets other than land. Treating landholding as a main indicator of disadvantage, the assessment produces a mixed result (Table 14.3) with Direct marketing and Trader based marketing appearing as more inclusive. The channels are not biased in any direction if comparison is made with the traditional channel within the same region. Direct marketing and trader-based channels are significantly more inclusive of small farmers, but corporate intermediation has a lower share of small farmers than the corresponding traditional channel of the region. The inclusion of disadvantaged farmers also falls short in the emerging channel with respect to other indicators in most cases.

Looking at a more disaggregate picture (Fig. 14.7), the inclusion of small farmers is less in the emerging channels in 9 of the 17 cases listed. Except for the group-based direct marketing to processors studied in Assam, the rest are in the organized retail (i.e. tomato in Himachal Pradesh and Haryana and cauliflower in Jharkhand), contract (potato in Assam and Punjab and aonla in Uttar Pradesh) and corporate mediation (onion in Maharashtra and soya bean in Madhya Pradesh), all of which involve participation of private companies.

14.6 Sensitivity of Farm Size in Participation

Since regions vary in farm size distributions and not all channels emerged in all states, there is a case for associating the average farm size with emergence of individual channels. Average farm sizes follow a similar pattern between the two sets of samples drawn from the emerging and traditional channels across different emerging channels (Fig. 14.8) since landholding pattern has its regional dimension based on history and soil fertility. It is not surprising that the average farm sizes observed for potato and kinnow in Punjab are large in both channels and those for tomato and muskmelon in Haryana are also relatively large, while in both channels, the average farm sizes reported for Andhra Pradesh are small. The average farm size of the participants in any channel thus reflects the regional farm size distribution too, and the comparison between the channels in any region may not reveal much.

A comparison across different cases within the emerging channels shows a lack of uniformity within each such channel type among the different states. Within the category of the corporate marketing intermediation (CMI), the farm sizes in Madhya Pradesh (3 ha) and Himachal Pradesh (1 ha) are smaller relative to that among onion growers in Maharashtra (5.9 ha). On the whole, the CMI model in Maharashtra and all the contract farming cases involve relatively larger farms (Figs. 14.8 and 14.9), and farm size exceeds 2 ha in all the cases. In the retail chain, the Jharkhand case differs from the Himachal Pradesh case in reflecting a far larger average farm size of the participants. In direct marketing too, the farm size is larger in the Assam case of group selling to processors than in Andhra Pradesh. The average farm size seen in Himachal Pradesh is relatively small in the CMI category, but there are reports of popular pressure in the state on the intermediating company on procurement.

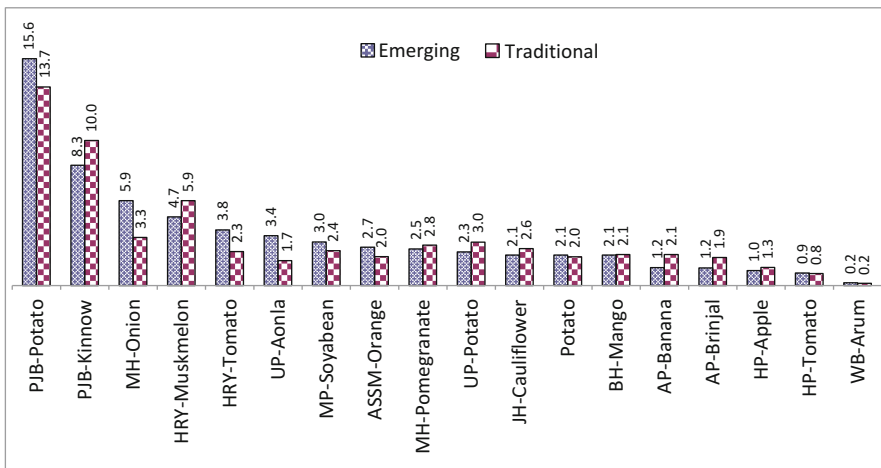


Fig. 14.8 Average farm size of participants in emerging and traditional channels

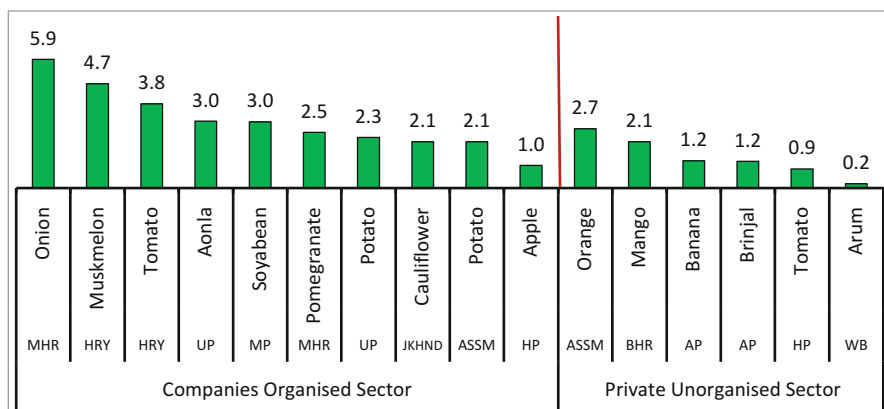


Fig. 14.9 Average farm size (hectares) of sample households in emerging channels (excluding Punjab)

There is an overall impression at the country level that average farm sizes of participants tend to be higher when profit-oriented private companies are the buyers (Maharashtra (DFPCL), Jharkhand (RF), Assam (Private Processor) and Uttar Pradesh (PepsiCo)) than otherwise (Himachal Pradesh (Mother Dairy), Andhra Pradesh (Rythu Bazaar), Madhya Pradesh (e-Choupal)), though this can in no way be firmly concluded from this study. It may be noted that in the direct marketing channel in Assam, processors are major bulk buyers. This possible linkage indicates that private participation may not be expected to emerge with success uniformly across the country.

14.7 Farm Practices

Farm practices do not seem to be seriously influenced by the participation at this stage (Table 14.4). There are indications that the participants in the emerging channels do use more chemical and organic fertilizers, but this difference is negligible and could be due to their economic superiority as a basic trait. Both contract- and trader-based channel are exceptions. There is no indication that the participating farm is likely to be organically certified or more inclined to use water-efficient irrigation methods.

Channels accommodating an organized company (corporate involvement) tend to favour practices of using both types of soil amendment relatively more so that any ecological adversity due to profit motive is weak. In contract however the use of chemical fertilizers is comparable to the reference traditional channel, but manure use is nearly half the reference channel. The use of family labour is by and large more intense in the emerging channels. The use of on-farm storage facilities, hired

Table 14.4 Farm practices of emerging channels (ratio to traditional channels)

Averages	Average farm size	Fertilizer use	Manure use	Hired labour	On-farm storing	Use of sprinkler or drip	Use of tractor	On-farm processing
Direct	0.85	1.00	0.81	0.69	None	None	1.02	None
Retail	1.08	1.04	1.23	0.77	2.4	2.2	None	None
Contract	1.24	0.97	0.55	0.89	None	None	0.67	None
Corporate intermediation	1.19	1.48	1.65	1.07	1.15	1.21	None	11.67
Trader	1.12	0.99	0.51	1.03	1.15	2	None	0.9
Corporate involvement	1.18	1.17	1.17	0.95	1.46	1.54	None	11.67
Private	0.95	1.01	0.77	0.77	1.15	2	None	0.9

Source: Computed from survey data

Notes: Figures are averages of the ratios across channels. Average farm size is measured in hectares, use of fertilizer, manure (organic) and hired labour in Rs/ha and use of other facilities as percentages of farm households using the facilities

or owned, is also more common among these participants. This is not surprising as the collection by buyers' convenience is facilitated by this privilege. Usually, this facility also enables farmers to wait for improved prices although in contracts, such storage would not have any effect on the price fetched. In our cases, the use of on-farm storage is not reported by participants in the contract channels. The facility is apparently not needed in most cases due to timely collection of produce, but such a perception may be misleading as over time the facility may make entry into the channel easier. Preliminary on-farm processing is observed only in the CMI and trader-based channels.

14.8 Implications of the Changes

The transitions witnessed in the marketing regime of Indian agriculture at this point are enough to mark a sharp departure from the past and signify that the static system was waiting for an overhaul. Although in many cases producers were found to depend on a single channel, be it an emerging one or not, there were also instances of channel diversification as in Maharashtra and Assam. More relevantly, farmers sought alternate channels for disposing products that are rejected or deemed unsuitable for another channel. In many cases, particularly where the producer faces the task of carrying the product physically to the buyer, the proximity of the market is a critical parameter. The existence of multiple channels including the traditional channels is of importance not only for offering greater option and convenience to the producers but also for reducing product wastage, to save on fuel cost, to reduce automobile pollution and to overcome market failures legitimately when the regulated markets function leading farmers to poorly prefer to and in actual practice to sell in local markets outside the mandated precincts.

Since the efficiency is found to improve when new channels are resorted to, there is considerable saving on social capital translating to welfare gains for producers and consumers. However, these new channels are shorter, and the social cost of displacing the traditional traders cannot be wished away. It is also known that traders serve significantly useful functions in the rural economy and have gained knowledge through years of on-the-job experience that should only be made use of and not frittered away. It is hoped and evidences have also shown in this study that trader's performance and the regulated markets respond to competition and the traders will be encouraged to modernize their operation through the demonstration created by the modern entrants. Indeed examples of direct marketing in Punjab and Andhra Pradesh highlight the importance of proficiency required for marketing. While it is difficult to train farmers fully at this job, this could be easier in respect of traders who specialize in this particular function. Experiences around the world suggest that traders are not necessarily displaced by market developments, and in the models that we followed in Maharashtra and Punjab, users have acknowledged; trader's knowledge, their understanding of ground realities and appreciation for the

qualitative differentials among similar products. However, the regulated markets also need to be more equipped especially with grading and sorting facilities to enable product differentiation as also the incentives that come from the threat of competition.

A noteworthy finding from these surveys is the role played by the traders in disseminating price information even among the participants of the emerging market. Moreover, such information has its roots in auctions in regulated markets which still remains as the basic price discovery mechanism. Over time as the market transits to complex relations between the seller and the buyer and among the buyers themselves, price discovery will become a critical issue for which the option of selling in auctions should be retained with some effort. The development of the derivative market for agricultural products also deserves utmost attention. Being another objective, transparent and auction-based method, the future market harnesses information from around the world and disseminates it widely to create the environment for informed but subjective decision making on part of the transactors. The derivative market for agricultural products market should be encouraged with various policy measures, but at the same time, its efficiency needs to be enhanced to free it from the effects of baseless speculation, corruption, corporate misgovernance and misinformation. Once again creation of storage facilities such as warehouses and silos is important, and modern cold storage facilities could help to widen the coverage of the futures market. The government needs to invest on these facilities or create fiscal and other incentives to draw in private initiatives.

Food wastage is fast-gaining global consideration and censure, and the company-driven markets share their blame in the growing incidence of product wastage and rejections. While on the whole the emerging channels in our findings seem to be marginally superior in this respect mostly by dint of their improved technology, resources and ownership of appropriate vehicles, it is also observed that they too are victims of losses. In fact, the organized retail chain surpasses the corresponding traditional channels in respect of retail-level losses of products for which possible monitoring and penalty may need to be eventually attracted. However, our estimates suggest that between 10 % and 12 % of production is wasted in both channels, and in both cases, considerable wastages occur either on farm, in storage or in transit. Private initiative on part of the buyer will not be a complete answer to these problems, and producers have to be encouraged to improve their harvesting methods, workers to improve their ways of product handling, packaging industries to rise to the occasion, roads require upgradation and more storage facilities are called for. While the private sector needs to do its part of the job, the traders and the farmers are dependent on the government for support on the required facilities, and the direct marketing producers are primarily vulnerable to state inactions. The private sector too would look forward to public support in certain aspects of infrastructure and for the incentive structure to induce other private enterprises to fill up the gaps and could be morally discouraged if intentions are not visible in a reasonable time frame.

Producers are most frequently found to depend on a single channel for product disposal although there are instances of channel diversification as in Maharashtra

and Assam (direct marketing). In most cases, the emerging channel and its conveniently located collection centres help farmers save the time and trouble of selling products, and the marketing scales are therefore moderately high. Procurement from the field is particularly helpful to farmers. However, the situation with the traditional system varies.

In Maharashtra and Madhya Pradesh, markets were fairly developed to start with, and the regulated markets have obviously improved with competition, but being large markets, there is enough space for traditional and emerging markets to function together. The competition is fairly even if not favorable for traders. In the large onion market, the traditional channel in fact performs more efficiently than corporate intermediation which however is especially successful in the case of pomegranate. In other cases such as Assam, Himachal Pradesh and Jharkhand, there is a huge scope of improving the traditional markets and strengthening the supervision. The emergence of new channel has not only been a boon to farmers in these cases but also provides demonstration for the traditional markets in moving forward. The regulated market needs to be more flexible to meet the needs of the people, and the reforms have been especially demonstrative in the case of Assam.

Despite the merits of the emerging channels, it appears to be important that the traditional markets survive the competition in the current state of affair. The size of the market is one reason in certain cases where there is sufficient supply and demand to allow expansion of channels with variety to meet different requirements. Rejections and selectivity by rigid norms in emerging markets also require additional options to be offered to farmers for disposal of rejected products and the traditional channels be socially useful in providing the outlet. Keeping in view that consumers too have the need for optional sources related to price and quality considerations, the traditional channels are especially useful.

That the traditional trader continues to be a prime source of market information to sellers in both channels is a most noteworthy feature of the markets. Sellers in retail chains (Jharkhand and Himachal Pradesh) are the only exceptions, who rely only on their own buyers which is undesirable in the long run. The practice puts undue pressure on the buyer in price setting and more undesirably can lead to unhealthy power relations or even trigger desertion of sellers, leading to market failure if the price process persistently proves to be faulty. Public market intelligence AGMARKNET is not found to be effective in enlightening the producer directly except in the two agriculturally advanced northern markets of Punjab and Haryana although whether the traders benefited informationally from the scheme or from futures markets is not revealed by the studies.

As of now it is important to have a policy to sustain the traditional channel based on regulated markets and the auction mechanism to protect the interest of the final user and original seller and to facilitate the new class of buyers in their pricing process. For this investment is needed to upgrade the regulated markets as enlightening venues for transaction to enable traditional traders to compete with, support and collaborate virtuously the emerging channel agents.

Despite all the promise, it is useful once again to keep the inequality implications of the development in mind. While the fear of traders being displaced may be

downplayed or even mitigated by modulating the models, it may be too much to expect all farmers to participate in private marketing right away and even for all regions to be equally interested and suit the new forms. It may take time for the right channels to evolve in different regions and suit different sections and/or even possibly to adjust regions and sections their economic activities to the demands of the time, but pressures on producers and violence will need to be controlled by state mandate and incentives.

Chapter 15

Reconsidering Agricultural Marketing in India

The new genre of marketing promoted in India to reduce the unjustified gap between producer's price and the consumer's price would be not just about selling products. With more space given to incentive and professionalism in marketing, a blend of varied services is expected to arise all along the supply chain. Yet much of these reforms raise apprehensions for the political economy of the intensity that few other policy initiatives do. Contentious issues of efficiency and equity as well as those between efficiency and sustainability slow down the progress justifiably.

At a stage when reforms are only nascent and battle with resistances, channels that are highly diverse in their way of operation but limited in number have been found to emerge in different parts of the country for different products, and they function in tandem with the long-standing traditional channels. This confluence of ideas presents a vital opportunity to study the relative merits of the path of reforms and rethink the policy option. The broad method followed is the integration and meta-analysis of evidences brought forward by exploration of official documents, interaction with knowledgeable authorities and field surveys conducted by ten Agro-Economic Research Centres in India.

15.1 Looking Forward

A vision of a developed rural sector in India is shaped by expectations of technology flowing into farming, higher incomes reaching farmers and development of infrastructure all facilitated by private capital. Higher prices passed on to the farmers, reduced marketing costs and margins, greater value addition to products and improved productivity in agriculture will be associated with an alignment of production patterns more with market demand and global price tendencies than with state mandates, bringing an end to the era of urban bias of development. Hinged on private capital, people's enterprise and higher productivity, the method is likely to be more sustainable than rural employment programmes as the

MGNREGA¹ which are based on the public budget. Emerging reality on other fronts also requires greater flexibility of adaptation. Advancing technologies in farming and postharvest practices, better understanding on nutrition and hygiene, the potentials of cold chains and the rising significance of biofuels need to be accommodated in keeping with external issues such as rising energy prices and climate changes. The potentials of regional sourcing and appropriate transportation and logistics can only go with a more flexible marketing order (Sanyal 2009).

15.2 Misgivings and Political Economy Implications

Misgivings and resistances have become a 'part and parcel' of reforms. A key criticism of the marketing changes is that they cater only to a small section of urban milieu who benefit from economic growth brought about by reforms, are known to visit malls and prefer ready-made and processed food. The large bunch of semi-skilled traders and the small and poorer farmers are feared to end up as losers. By this argument, the traditional marketing system is implicitly viewed as a reservoir for semi-skilled workforce still not absorbed in the organized sector of the economy, and the spectre of open unemployment creates serious political fears. Question also arises why cooperative bodies are not promoted to a greater extent rather than private profit-oriented one.

Vertical integration, a cornerstone of the emerging channels, essentially effects shortening of market chains often replacing a large number of trading intermediaries specialized with limited ambits by a single organized and specialized entity or a conglomeration of entities that combines multiple functions with modern, technology savvy and strategic innovations. This contestation from resourceful players is likely to come as an onslaught to the traders, even eliminating them. Especially likely to be hurt among them are the urban retailers like the roadside and the pushcart vendors.

In the underdeveloped rural milieu, the services of the middlemen were valuable for their personal and informal nature, their respect for trust, their willingness to take the risk and deal with small volumes under uncertain conditions as well as their multifarious functions such as emergency money lending, input supplies and information transmission. Only their archaic system of accountancy failed in evaluating these services. At the initial stages of development, the services of these agents cannot be underestimated. The question arises whether India has reached the stage of departure.

The new agents in the chain would be powerful traders, some of whom are multinational corporate bodies with greater experience, resources, legal power and connections at higher places. They are likely to buy from the cheapest sources, even outside the country, depressing producer prices. Corruption and bribing in order to get a foothold on foreign grounds is not unknown among them though actively

¹ Mahatma Gandhi National Rural Employment Guarantee Act.

discouraged in today's international market. The damage inflicted on local entrepreneurs could be irreversible (Swamy 2012).

Discrimination against farmers is a fear, borne out of historical evidences and combated through greater public involvement and tougher regulation of private economic activities. With regulations being relaxed and greater leeway offered to the private sector, the opportunity again arises of farmers being exploited, this time in the hands of entities that are far larger in size and far more resourceful than the privileged party of the bargain in earlier times.

Inequality even among the farming classes is yet another though less discussed issue. Buyers whose products ultimately sell in upper-end markets such as malls and supermarkets or reach the exporters or the processors would be inclined to procure only higher-quality products. The quality of the produce would depend partly on the economic power of the farmer to adopt technology and partly on the geographical and inherited advantages of the soil and not on farmer's efforts. Coupled with the transaction costs of procuring in small lots, this will encourage large buyers to prefer larger producers. Unfair contracts and contract violation can further hurt farmer's welfare and stimulate the exit of the small and poor farmers who are unable to compete in the emerging market. The socio-economic consequences favourable or otherwise of this development can be unfathomable.

Ecologists around the world are concerned about adverse effects like the degradation of land, excessive use of chemicals and soil exhaustion as the objective of farming increasingly becomes making short-term profit from land. With the recipe-driven and menu-based cultivation practices, the contract farming producers are likely to be reduced to mechanical assembly line entities from intelligent decision-making entrepreneurs who practiced judgment-based holistic method of farm management. Public and interactive modes of extension that are increasingly emphasized today will decline in importance with dictates coming from processing and retailing companies. Their capability of traditional foodgrain farming and longer-term food security can be compromised as farmers shift to lucrative cash crops.

The neoclassical understanding of price determination will be challenged as open auctions get replaced by closed-door mutual bargaining sometimes in advance under contract. Conditionality of other aspects like inputs, extension and technology, specificity of the products under transaction and differentiation of technology makes comparison across transactions and arriving at common average prices meaningless. Transparency will be a victim as the private parties would tend to conceal the information for various bargaining advantages and public market information system can be seriously compromised.

Even if producers' collectives are developed, the growing number of disputes over contracts will impose enormous burden on the judicial system of the nation. The growing expectations of farmers from the companies, the complexities of the contracts and the specificities of agrarian reality and different possibilities of contract violation on either side will need a well-designed and highly prepared judicial system dealing with altercations and disputes.

On the downstream end too there are misgivings that consumers will be reoriented towards less nutritive, obesity inducing, processed food and that even

in urban areas, large sections of consumers will not be able to join the chain owing to high prices. The more powerful trading agents will be capable of holding on to stocks and dictate prices at both ends.

15.3 Markets and Marketing Channels

Markets, celebrated in folklores, ballads and history of societies, evolved from forces of development manifested in specialization, division of labour, urbanization, industrialization, the growth of physical communication and today in the advancement in information, technology and Internet. Marketing becomes an organized subject matter in the broader discipline of managerial sciences and displays dynamism with the inflow of technology and new ideas.

Experiences have varied across countries, but the relation between development and channel length largely reflects non-linearity. Multiple single intermediaries give way to organized marketing firms at higher development levels. In the inverted U-shaped relation with development perceived, the turning point in the channel length connotes that vertical integration has set in. The question arises whether India has reached that stage of development today and whether it is ready for that stage.

15.4 Experiences from Other Countries

India is a latecomer in the scene although reforms in the economy at large commenced more than two decades ago. Many countries around the world, bearing traditional systems based on either state monopolies or chains of middlemen operating under state regulations like India, launched reforms in the 1980s and 1990s sometimes as a natural process but more commonly as a conditionality of aid taken from international agencies or compulsions from domestic fiscal imbalances and food insecurity. Experiences of reforms from different countries fail to generate a uniform picture, but success has at best been limited in the developing countries. Even assessments of developed countries generate optimism as well as doubt.

15.5 Progress of Reforms in India

Under the Indian Constitution, the state governments have the final say on how marketing of agro-products would operate. The central government can only suggest and advise. Many believe that with the sociopolitical diversity in the large country, the states are the best judge of what policy will be appropriate. Contrarily, a unified policy to enable movement of commodities across space within the country is favoured for being more consistent in context of a globalizing market. Views remain highly divided.

Existing laws (APMC Acts) provide for regulation of agricultural markets by building up, restoring and institutionalizing a network of physical markets and creating self-employment opportunities for a fleet of traders in market chains. Open auction, supervised by democratically created market bodies, was the recognized mode of transaction to ensure fair prices. The reality is far more complex, and little option was left for producers in marketing, thus defeating the purpose of the regulation. Supervision was poor, even corrupt and in most cases bureaucratic rather than representative. The states varied widely in the densities and performances of the markets. Globalization in the wake of India's formally joining the WTO made the existence of a vibrant and dynamic marketing system even more compelling.

A model APMC Act finalized in 2003 and circulated by the central government was meant to reform the market by allowing more competition and encouraging innovative new marketing methods to evolve.

15.6 Reforms in States

Given the diverse political realities prevailing in the states, it is hardly surprising that the state of marketing reforms in India is highly varied in character and progress. Some states reformed fast, some are slow and some are reluctant even today if not completely obdurate. Possibly the stand taken by a state to the reforms reflects the extent and incidences of the effects of reforms it anticipates on the livelihood and welfare of the people of the states. In the field studies reported in this report, we will find that actual change has been remarkable even in a state that has not legislated reforms, while new channels are difficult to come by in progressive states and certain states are steadfast in averting changes that are in principle possible even under the existing laws.

15.6.1 *Reforms in Traditional Marketing and the Role of Traders*

It is important to note that despite the APMC Act, the regulated markets in many cases did not suit the local marketing requirements and the traditional systems that actually prevailed often departed significantly from the legislated norms and varied among themselves to meet with local exigencies. As things stand, the regular state-run channels, far from being eliminated or phased out, are also proposed to be changed in tune with the rising contingencies and the pressures of competition. Even in non-reforming states, channels are undergoing changes in response to stimulus coming from the centre, other states and the overtures of the private companies under the existing regulation.

Flexible market intervention scheme (MIS), e-trading, establishment of derivative exchanges and computerizations are some of the development that are impinging on the traditional channels too. Agricultural Marketing Research and Information Network (AGMARKNET) is a central sector scheme of the Ministry of Agriculture for linking regulated markets spread all over the country, entrusted to National Informatics Centre (NIC), Department of Information Technology, the Government of India on turnkey basis.

There has been a strong competitive response from the traditional retailer to the coexisting organized retailer through improved business practices and technological updation. An inter-ministerial group on inflation in 2011 suggested that perishable products should be exempted from the purview of APMC Act providing farmers the freedom to make direct sales to aggregator and processor. Introduction of electronic auction platforms in all *mandis*, replacement of the licences of the APMC market by open registration and electronic display of prices for short-duration vegetables crops were also suggested. Organized marketing and greater private sector participation were emphasized. To promote integrated value chains, exempting vegetable from market fees is in process. The states of Madhya Pradesh and West Bengal already implemented the waiver. The Ministry of Agriculture is facilitating the display of spot and futures prices in *mandis* in collaboration with Forward Markets Commission.

The services of the traders of the traditional channels are an unresolved issue. Trading is perceived to be an easy option in employment due to the low level of skill required. There is argument that even a handful of trading organization can have the same outcome as perfect competition if there is a threat of competition in a 'contestable' market. There is little doubt that a credible threat for their existence from competition in a free market situation also pushes the regulated market and the traditional trader to rise to the occasion and improve their outdated practices. The tangible possibility of upgrading the regulating markets and the traders functioning exists and is already being observed in the course of our field studies.

15.7 Empirical Findings from Primary Data and Field Information

Sample survey of participants in about two emerging channels was conducted in 11 states. Defining an emerging channel was not easy, but our specification implied a channel that differed from the common traditional channels familiarly seen in the region. Typically, the emerging channel was shorter than the corresponding traditional channel, which consisted of a commission agent or a preharvest contractor, wholesaler, trader and retailers. The way of marketing operation was generally different in the emerging channel and sometimes involved strategically located clearing houses or market structures.

Although the emerging channels studied did not always involve commercial and organized companies in the chain and in some cases even coalesced with the traditional channel at a point, in all cases, they involved a shorter channel and bypassed the first link usually the commission agent or the preharvest contractor. The channel length varied from very short (no intermediary) to one consisting of single organized intermediary, to a mixture of organized and formal intermediaries and finally to the longest channel with a fairly large number of functionaries.

15.7.1 Functioning of Emerging Channels

This report presents the cases of the following emerging channels: (i) direct marketing in Andhra Pradesh, Punjab and Assam; (ii) contracts in Punjab, Assam and Uttar Pradesh; (iii) corporate market intermediation in Maharashtra, Himachal Pradesh and Madhya Pradesh; (iv) organized retail in Jharkhand, Haryana and Himachal Pradesh; and (v) trader-based channels in slow-moving states of West Bengal and Bihar.

The buyers from producers include both commercially organized entities and individual traders. Organized companies also cover large national companies, smaller local processors and giant multinational entities. Procurement by a non-profit but organized company is also covered as also intermediation by a non-governmental agency in a tripartite transaction involving the producer and a commercial buyer. The channels are not always distinct. Sometimes the emerging channel merges with a traditional channel, and in other cases the emerging channel is a modified form of the traditional channel.

15.7.2 Why Participants Choose the New Channel

Social influences coming from friends, relatives and neighbouring farmers are generally observed to be influential in the dissemination of new technology among cultivators. In the matter of marketing and the choice of a new channel, marking a major shift in traditional practice, social influence along with habitual acceptance is found to be only of moderate importance and hardly played a role in the acceptance of contract farming. The charm of reaping higher prices has attracted many farmers. The security of assured sales also draws participation, but the same attraction also retains participation in the traditional channels owing to rejections in the other channel, so the superiority in this appeal is not established and perceptions remain important. In contract farming, low marketing cost and superior services are powerful forces that draw farmers. Among other factors, shorter distances to be travelled and input support from buyers were mentioned, while hidden costs like demands for bribes and long waiting periods weakened farmers' attachment to the traditional channel.

15.7.3 Marketing Costs and Gains in Efficiency from Switching

Efficiency is undoubtedly gained by shifting to the emerging channels as revealed by our data. Large gains are made in direct marketing in the Rythu Bazaar of Andhra Pradesh where there are no intermediary margins. Fruits and vegetables are similarly benefited although savings in marketing cost are relatively high for certain vegetables. The private trader-based channels fail to show superiority owing to the poor economic conditions of the new kind of traders in the states concerned.

There are qualitative sides to the efficiency gains also, perhaps not fully captured by a quantitative treatment. Direct marketing is devoid of the gains from specialization where producers take time out of productive activities, so that productivity can suffer as is seen in case of Brinjal in Andhra Pradesh. There are complaints from customers of rude behaviour from sellers who are untrained in marketing functions. In all cases of retail marketing, farmers expressed satisfaction in being able to lessen marketing responsibility, and in Himachal Pradesh, the excluded producer even exerted pressure to extricate himself from his ties with traders to join the chain, thus revealing his preference.

15.7.4 Gains to Agriculture

Even after deducting marketing costs and accounting for wastage and rejection, the net price is relatively higher in the emerging channel though there are exceptions. It is more important to note that the profit and the returns from land are higher in comparison to the corresponding traditional channel in the area. Effects on returns are higher in fruits than vegetables. Productivity in agriculture is also higher in the emerging channel. Farmers evince satisfaction with services and the relief from marketing burden in most cases although a hint of suspicion of powerful payers is evident. There is an open expression of interest that state should support marketing and cooperative could be a better alternative. Traders however face problems of local movements resisting the organized retailers. Financial pressures and problems of pricing and reliability of suppliers weigh on the organized retailer and in particular the non-profit retailer under study, since agreements are oral.

15.7.5 Political Economy Implications

As could be expected, direct marketing interface produces the largest savings both in absolute and relative terms. A channel in which only one organized private company participates is the next most cost-saving group followed by the blended composition of private traders and a corporatized body. It appears that the fear of

displacement of individual traders is real when the powerful organized entity steps into the market and there is a search for efficiency. Channels with no presence of organized companies show the least savings.

In the two slower states, not only is the producer distressed by the encounters with the comparatively more powerful licensed traders and look for alternatives, there exists also a pool of unemployed youth force who can potentially step in to replace the vested trading power and provide more alternatives. However, the financial poverty and lack of experience of the new trading agencies even relative to the traditionally operating traders also deserve attention. The economic strength of the trader for onion in Maharashtra where the traditional market is developed is also borne out in the comparative study. In such cases, the traditional channel cannot escape the same critical lens that the emerging channel is viewed with.

As far as small-sized holding is considered as a main indicator of disadvantage of farmers, our assessment produces a mixed result. Direct marketing and trader-based channels that eschew organized marketing bodies are significantly more inclusive of small farmers relative to the traditional channels in the regions. Contract farming especially in Uttar Pradesh where a large multinational is the contractor is also more inclusive of this class. Corporate intermediation has a lower share of small farmers than the corresponding traditional channel of the case. However, with respect to other indicators of disadvantage, in most cases, the participation of disadvantaged farmers falls short in the emerging channel. Preference for higher-altitude orchards for apple in Himachal Pradesh shows that discrimination can be related to geography. Ownership of on-farm storage facility by producers of onion in Maharashtra is marked as an advantage for inclusion as buyers procure at their own convenient time. Ownership of a mobile phone appears to be important and even necessary for inclusion everywhere. In most cases, the participant in the emerging channel is moderately more educated as measured by the level of schooling of the heads and the proportion of higher educated among the family members. The participants also tend to cultivate their owned land rather than leased land, the incidence of which is very low.

Although strict quality standards lead to rejections, the participating farmers found outlet for disposing their rejected products in other channels so that the proportion of unsold product was minimal. Rejection is not a serious problem for the channels due to the coexistence of multiple channels.

15.7.6 Sensitivity of Farm Size in Participation

The average farm size of the participants in any channel thus reflects the regional farm size distribution too. On the whole, the CMI model in Maharashtra and all the contract farming cases involve relatively larger farms. The average farm size seen in Himachal Pradesh is relatively small, and this reflects the regional reality, but there are reports of popular pressure for inclusion. An overall impression at the country level emerges that average farm sizes of participants tend to be higher when profit-oriented private companies are the buyers.

15.7.7 Farm Practices

No significant difference is noted with regard to farm practices between the channels. There is no perceptible shift towards water-saving methods of using sprinkler and drip irrigation which is more a regional aspect of farming. No farm in either channel was found to be certified as organic. Farmers in the emerging channels use family labour more intensively.

15.7.8 Marketing Practices

Producers are mostly found to depend on a single channel, and instances of channel diversification are few (as in corporate intermediation in Maharashtra and direct marketing in Assam). In most cases, the emerging channel and its collection centres help farmers save the time and trouble of selling products. The marketing scales are higher in the emerging channels. Even in the traditional channels, the farmers do not always go through the regulated market. In fact in Assam, the regulated market is used more actively by the participants of the emerging channels, while the traditional sellers dispose goods in the local markets. In Bihar too, the practice is similar, but larger farmers may carry products to urban markets that are more developed.

15.7.9 Other Services Provided by the Buyer

Producers do not generally avail of other facilities like inputs and credit from buyers in emerging channels although borrowing in cash or as inputs from traders is reported albeit in rare cases in the traditional channel. In contracts, however, farmers do get inputs, input advances or technical advice and specifications as well as extension and have expressed high levels of satisfaction with this service.

15.7.10 Innovations of Organization

The government provides the space and infrastructure, and an institution is created for the participation and transactions in Andhra Pradesh and Punjab. This has not been attractive to all classes of producers, and large farmers are rather disinterested. These markets at times merely form an additional avenue of product disposal.

Collective sale by farmer group are found to be successful in Assam in overcoming the challenges of remoteness, small-sized lots and weak bargaining strength vis-à-vis powerful processors. Intermediation of contracts by an NGO in

Assam also shows innovative possibilities where the advantages of dealing with processors are exploited while averting the disadvantages of being small producers. Mother Dairy in organized state-promoted venture predated the amendment of APMC Act.

15.7.11 Traditional Markets

In Maharashtra and Madhya Pradesh, the regulated markets have obviously improved with competition, but being large markets, there is enough space for traditional and emerging markets to expand and function. The traditional traders also operate in high-end and larger markets. In other cases such as Assam, Himachal Pradesh and Jharkhand, there is a huge scope of improving the traditional markets by strengthening the supervision and allowing the system to suit local needs. Punjab too has a well-developed and large traditional market, but the system is geared for grains, and the need for a marketing system suitable for the specificities of horticultural products is clear.

In fact, despite the merits of the emerging channels, it appears that the survival of the traditional markets in the competitive environment is important for welfare and efficiency in the longer term. One reason is the large size of market as in Maharashtra where the presence of multiple channels is essential. Second, rejections and selectivity in emerging markets require additional options to be offered to farmers sometimes for disposing of the rejected products. Third, the possibility of extinction of the traditional channel raises apprehensions of diabolical monopsonistic complexities. The traditional channel should be an option of disposal to farmers. It serves as a threat of competition to emerging channels until the market is more developed but itself requires to face competition from other channels.

Finally and most notably, the traditional trader continues to be a prime source of market information to sellers in both channels. Sellers in retail chains are the only exceptions, who rely only on their own buyers. Public market intelligence AGMARKNET is not found to be effective in enriching the producer directly although it is difficult to conjecture if the traders benefited from the scheme or from future markets. AGMARKNET however has been of some service only in Haryana and Punjab, but it draws from transaction in regulated market. Price determination and intelligence remain as unresolved issues for market evolution.

15.7.12 Changing Rules of Price Determination and Significance of Traditional Marketing

Price determination by the forces of demand and supply in an objective manner lies at the heart of the market mechanism, underlined in the theories drawn from Smith and Ricardo to Bhagwati. Implicit in the notion of the invisible hand envisioned in

the market mechanism is the idea of an 'auctioneer' who equilibrates demand and supply through an automated adjustment process.

While auctions, even though inappropriately implemented through poor supervision, are still the way of price discovery in traditional marketing, this is rarely the case in the emerging channels. The case of sales by farmers' groups in Assam where information sharing is substantial and the place of sale is the regulated market is perhaps an instance of price determination that is aligned with conventional theory drawn from neoclassical economy. In Punjab too, the regulated market is the place for direct marketing practice. In all other cases, the negotiation is largely between the transacting parties in isolation and even by contract when the price is decided even before the transaction is done. In Punjab, the prices are fixed exclusively by the transacting parties with no reference to mandi prices.

These methods of price determination unless conducted in reference to an objective benchmark information will not probably reflect the actual demand and supply situation. Bargaining strength rather than market information will be the basis of pricing. Even if market information is incorporated into the pricing process, it relates only to past events that transpired elsewhere. In fact, the price is deeply related to the recent price fetched in the traditional market in the vicinity and clearly shows that traditional market still remains important. While the government's AGMARKNET is not found to be effective in our study cases, this public intelligence will also draw from traditional market transactions.

In this context, not only is the parallel presence of the auction-driven traditional marketing channel imperative, the futures market too can be extremely important as it is an objective and transparent indicator of market price that assembles information from around the world through fair and informed bargaining though at a different level involving a set of transactors who are not likely to be producers.

15.7.13 Wastage

One of the motivations for reforms is to reduce postharvest losses of products. The incidence of product wastage is gaining international censure. The study suggests that losses are seen to occur mostly at the stage of harvest and in transit though wastage at retail level is also not insignificant more notably in the organized retail. Long distances, poor condition of roads and waiting for higher prices are also reported to be leading reasons for losses. It is worth noting that the presence of the traditional channel is also important as an alternate channel to prevent discard of rejected products.

Product wastage is less in the emerging channels owing to the presence of company's cold storage in proximity, their timely collection, their possession of refrigerated vehicles and also their selective choice of producers with their own facilities. Marketing reforms may however not be a solution to the problem. Excessive selectivity observed in the new marketing system can be a new route

to product discard. In direct marketing, unsold products are reported to be discarded.

Poor infrastructure, a principal factor behind wastage, affects both channels. Government still needs to address the requirement for storage facility for which the private companies do not always help. Similarly, there is a need to improve farm practices to avoid damage while harvesting, picking and culling, but when private extension is involved, the onus is on the emerging marketing channels to suggest ways and means of doing that, but it remains to be seen if training and technology imperative are addressed by the buying private company adequately. Probably, the state role will need to continue.

15.7.13.1 The Woes of the New Traders

The emerging channels are grappling with their initiation as infant enterprises. Producers, used to long years' familiarity with the existing systems, need to be weaned away for expanding their market. Social influence coming from demonstration effects is not playing a significant role. Rather, the disaffection with the traditional traders and the travails of transacting in the regulated market is a more powerful force drawing the sellers. Yet most respondents agree that the traditional trader serves to bring information, helps with timely credit or inputs to farms and is generally deemed reliable.

The larger private players have the daunting task of creating their image as fair, reliable and helpful to producers. Political and popular pressures are the greatest irritants. Pressures, resistances and compulsions forced against commercial rationale are regular problems. While difficulties are expected at the teething stage of a momentous change, it is important for them to exhibit their social concern and create higher-quality employment opportunities to allay the apprehensions and also to leave space for other segments of market to exist based on their own capability. The private corporate players too face the pricing challenges and would realize the importance of the coexistence of traditional channels for sustainability. Also both groups of traders share common interests such as the development of infrastructure for which they should act together as partners.

15.8 Policy Directions

An urge to cut down on marketing costs and reduce the farmers' lack of options is a feature that is observed in all states, regardless of legislated changes in marketing rules. It is also useful to note that even under the pre-existing legislations, significant changes in rules are possible provided the state governments have the political will. Legally or otherwise states are showing a movement even if slow. A large variety of marketing channels are emerging in different parts of the country, which are generally shorter than the prevailing traditional channel in the area. It is also

observed that the traditional system too showed variety and local specificities in practice as the regulated marketing system did not suit regional circumstances. Marketing practices traditionally prevailing are not true to the rigid rules of the APMC Acts, and aversion to sell in the regulated market is a frequent observation.

The gain in efficiency from a switch over to an emerging channel is hard to deny. In most cases, there are also nonmonetary aspects such as shorter distances, convenient and farm-gate transactions and avoidance of unnecessary formalities and bribe payment. Above all there is a perceptible satisfaction of escaping the clutch of the village middleman. The new channels can also be associated with increases in productivity, profit and returns from farming. Distributional implications are a concern, and channelizing the displaced manpower to productive employment will be a challenge. It is sensed that gains from high prices and return would reach an exclusive section. The gainers being biased against the resource poor can exacerbate rural inequity. Participation bias in favour of the larger farmers and regional dimension of farm sizes indicate that same channels may not be relevant or suitable for all states. Indeed there is a possibility of enhancing regional disparity.

Agricultural markets are large and could expand with new technology, processing and globalization. There is space for multiple channels to operate and provide farmers with options. What is inappropriate in one channel is acceptable in another reducing wastage and monetary losses. It is important that the traditional market too rises in standard to face competition and exists alongside the emerging markets. In this context, in states like Himachal Pradesh and Jharkhand, the poor performing traditional markets need special attention.

Pricing mechanism as understood from neoclassical economic theories is increasingly coming under onslaught which underscores the importance of sustaining the auctions and a need for rethinking on market intelligence.

Appendix 1

Table A.1 Distribution of samples by farm size classes

States	Emerging marketing channel			Traditional marketing channel		
	Small	Medium	Large	Small	Medium	Large
Andhra Pradesh (banana)	80.00	20.00	0.00	53.33	33.33	13.33
Andhra Pradesh (brinjal)	80.00	20.00	0.00	53.33	33.33	13.33
Maharashtra (onion)	8.30	75.00	16.70	37.10	53.20	5.70
Maharashtra (pomegranate)	66.60	33.40	0.00	48.60	48.60	2.80
Himachal Pradesh (apple)	88.00	12.00	0.00	86.00	14.00	0.00
Himachal Pradesh (tomato)	72.00	20.00	8.00	88.00	8.00	4.00
Madhya Pradesh (soya bean)	8.11	48.65	43.24	45.71	31.43	22.86
West Bengal (arum/mustard ^a)	96.00	4.00	0.00	95.00	5.00	0.00
Bihar (mango)	74.00	18.00	8.00	42.00	24.00	34.00
Jharkhand (cauliflower)	54.00	28.00	18.00	36.00	44.00	20.00
Assam (orange)	44.00	36.00	20.00	68.00	20.00	12.00
Assam (potato)	60.00	32.00	8.00	68.00	24.00	8.00
Haryana (tomato)	46.00	24.00	30.00	68.00	14.00	18.00
Haryana (muskmelon)	44.00	24.00	32.00	32.00	22.00	46.00
Punjab (potato)	10.00	20.00	70.00	14.30	28.60	57.10
Punjab (kinnow)	3.10	25.60	71.30	2.20	31.00	66.80
Uttar Pradesh (potato)	68.00	16.00	16.00	48.60	31.40	20.00
Uttar Pradesh (aonla)	72.00	16.00	12.00	66.00	28.00	6.00

^aOnly emerging channel is reported for arum and traditional channel for mustard

Table A.2 Sample areas, crops and sizes

State	Crop	District	Block/taluka		Sample size
			Emerging marketing channels	Traditional marketing channels	
Andhra Pradesh	Banana	Visakhapatnam	Anandapuram, Payakaraopeta, Kasimkota,	Seeta-nagaram, Tuni, Ambajipeta, Eluru, Chagallu, Pulletikurru	15
Assam	Brinjal	Visakhapatnam	Sabbavaram	Anandapuram	15
	Orange	Tinsukia	Hapjan, Kalapathar	Hapjan, Kalapathar	50
	Potato	Nagaon	Pakhimoria, Juria	Pakhimoria, Juria	50
Bihar	Mango	Bhagalpur	Sultanganj, Nathnagar	Sultanganj, Nathnagar	50
Himachal Pradesh	Apple	Shimla	Rohru	Rohru	50
Jharkhand	Tomato	Solan	Kandaghat	Kandaghat	50
	Cauliflower	Ranchi	Kanke	Kanke	50
Madhya Pradesh	Soya bean	Sehore	Sehore	Sehore	35
Maharashtra	Onion	Nashik	Baglan (Satana)	Baglan (Satana)	35
	Pomegranate	Nashik	Baglan (Satana)	Baglan (Satana)	35
Utter Pradesh	Potato	Agra/Hathras	Sadar	Khandauli	35
	Aonla	Pratapgarh	Sadar	Khandauli	35
West Bengal	Arum	Murshidabad	Kandi	Kandi	100
Haryana	Tomato	Kurukshetra	Gurgaon, Not reported	Not reported	50
	Muskmelon	Sonepat			50
Punjab	Kinnow	Firozpur	Abohar	Abohar	35

Appendix 2

Crops Covered in the Study: Fruits

Mango (Bihar)

Mango is a tropical fruit tree native to India, from where it spread to other parts of the world. Considered by many as delicious, the fleshy stone fruit is highly perishable. Initially, in the seventeenth century, mangoes had to be pickled before export due to the lack of refrigeration technology. India is the largest producer of mango but, being a major consumer herself, contributes less than 1 % in international trade. Mango is also grown in Spain, Central America and Africa. It is widely used in Indian cuisines mostly in chutneys, pickles and side dishes. Mango can also be made into mango drink, jelly and other processed products. Ripe mangos are typically eaten fresh.

The mango tree is long lived with wide-spreading feeder roots. The fruit varies in size and colour with a resinous sweet smell. Chemicals in the peel can be allergens, and mango itself is susceptible to diseases. Alphonso is a popular mango exported from India, but typically in a mango orchard, several cultivars may exist. In the current world market, a variety called Tommy Atkins, initially developed in Florida, USA, is known for its high productivity, disease resistance and shelf life.

Mango is one among the four most important fruits (litchi, banana, guava and mango) grown in the state of Bihar. Bihar has natural endowments suited for mango cultivation, and a number of varieties are grown in the state. Mango is grown in all 38 districts of the state, but Bhagalpur is one of the top six mango producing districts in the state and accounts for more than 5 % of the state's mango area.

Banana (Andhra Pradesh)

Bananas are native to tropical South and Southeast Asia. They were possibly domesticated first in Papua New Guinea, but there are indications of their independent origin in Southeast Asia and in the Middle East. They were introduced into the Americas by Portuguese sailors. Today they are cultivated throughout the tropics and grown in 107 countries primarily for the fruits and also for the fibre, wine and for beauty of the trees. In India the banana flower and the stem are also used in edible cuisines, and banana leaves are used on domestic cultural occasions.

Banana, usually mistaken for a 'tree', is the largest herbaceous flowering plant with tall and sturdy 'pseudo-stem' producing generally a single inflorescence resulting in a single bunch of bananas. The leaves of the plant are spirally arranged and the plant itself may be perennial though the 'pseudo-stem' dies after fruition. Cultivated bananas are sterile and unable to produce viable seeds. Lacking seeds, tissue culture is a good option for farmers though propagation typically involves farmers removing and transplanting part of the underground (actual) stem called a corm.

There are many cultivars of banana, but the ease of transport and long shelf life rather than superior taste make the 'Dwarf Cavendish' the main export variety. Together with coffee, bananas were exported from Central American countries by companies like United Fruit Company in the nineteenth century, making the description of these countries as 'banana republic' popular. Even today bananas are a source of disagreement in the Doha negotiations on trade liberalization, and the growers, typically the small and poor farmers, of developing economies are known for the low price received for this widely demanded crop. Bananas are rich in starch, vitamin B6 and potassium and are good for controlling blood pressure and protecting the heart and nervous system. Because of high potassium content, bananas are slightly radioactive. Banana is a nonseasonal crop with year round availability.

India is the topmost banana producer (25 %) in the world followed by the Philippines, China and Ecuador. The major banana producing states of India are Tamil Nadu, Maharashtra, Karnataka, Gujarat, Andhra Pradesh, Assam and Madhya Pradesh. The plant thrives in humid climate with a temperature between 25 °C and 35 °C. Most soils are suitable provided they are deep and well drained. Planting on ploughed land both by propagation of suckers and by tissue culture is done in India. Banana is intercropped with soya beans and other crops. Growing of organic banana would avoid exposure to chemicals right from the planting material to the final postharvest handling and processing. Organic banana cultivation is under promotion in India. Banana is grown in East Godavari and Visakhapatnam among other districts in Andhra Pradesh. Banana yield in the state fluctuates significantly from year to years.

Aonla (Uttar Pradesh)

Aonla is a medicinal plant, containing high level of vitamin C and minerals, and is used for producing ayurvedic medicines and other health-care products. The aonla or the amla is a medium-sized tree, with greenish-yellow flowers and nearly spherical, light greenish-yellow fruits that are quite smooth and hard on appearance. Ripening in autumn, the berries are harvested by hand after climbing to upper branches bearing the fruits. The taste of amla or the 'Indian gooseberry' is sour, bitter and astringent, and it is quite fibrous. The Indian gooseberry is a common constituent in ayurvedic polyherbal formulations used as a premier rejuvenative compound. This fruit called yuganji, used for curing throat inflammation, is also included in Chinese traditional therapy. It is also used to straighten hair and is an ingredient in many inks, shampoos and hair oils.

The plant bears fruits 4–5 years after planting and harvest is done in October–January. It grows best in sandy loam soil and alkaline soil. Uttar Pradesh, Madhya Pradesh, Gujarat and Tamil Nadu are producers. In UP, which ranks first in production and area, aonla is grown in Pratapgarh, Allahabad, Azamgarh and Mathura. It is seasonal but can be easily preserved although the prices are susceptible to fluctuations.

Aonla can be processed into sweets, jam, jelly and pickles. Several established companies along with a few local units procure aonla from Pratapgarh, the studied district, and well-known brands (Dabur, Baidyanath, Patanjali) result from processing the aonla, Chyawanprash being produced from 70 % of the arrivals in the market.

Apple (Himachal Pradesh)

Apple is a fruit known for its beauty, taste and nutritive value, but it is suited for temperate climates. In India cultivation of apple is therefore limited to high-altitude mountain areas where temperature is low. Apple cultivation was initiated in India by the British since the time an apple orchard, now designated to be a Regional Research Station, was set up in 1887 in Mashobra, Solan. Further efforts were made by Stokes, a missionary to promote apple production in India in 1918. Gradually, as production of apple spread across the hill regions, transportation of the harvest was arranged in empty packing boxes sourced from tea industry using mules as draught animals. The process was slow and the Shimla city served as the nearest approachable market centre for the produce in the entire region which got transformed into a major apple-growing belt. In earlier days the farmers formed two distinct groups, those producing fruits and those producing vegetables, but the distinction is fading as tendencies for diversification grow.

Apple retains a top place in the state of Himachal Pradesh due to high returns, but production depends on weather conditions, elevation and age of plant and is highly variable. It constitutes around 60 % of area and 82 % of production of all

fruits in Himachal Pradesh. Growth in production is highest in Kinnaur district, but in many of the districts like Kangra, Solan and Sirmour, growth of production has slowed down. Shimla district has a high growth rate of 3.7 % per annum, though the productivity is modest compared to other apple producing countries.

Pomegranate (Maharashtra)

Pomegranate, an ornate shrub, sometimes referred to as the ‘apple of Granada’ and possibly a word derived from Latin and related to garnet for the ‘deep red colour’ of the fruits, is a deciduous shrub originated in Iran. It is grown in Syria, Armenia, Afghanistan, India and also Southeast Asia. It was introduced to Latin America and California by Spanish settlers in 1769. The fruit is consumed as juice, as syrup in cocktails and as a spice (anaar dana in India and Pakistan), and different parts of the fruit and the plant are inputs for ayurvedic medicines.

Pomegranate grows easily from seed but is commonly propagated from hardwood cuttings to avoid the genetic variation of seedlings. Pomegranates are drought-tolerant and can be grown in dry areas with either a Mediterranean winter rainfall climate or in summer rainfall climates. In wetter areas, they can be prone to root decay from fungal diseases but they are tolerant of moderate frost. Insects and pests of the pomegranate can include the pomegranate butterfly, *Virachola isocrates* and the leaf-footed bug *Leptoglossus zonatus*.

This fruit has gained recognition for its nutritive and medicinal properties. Research on the health benefits of consuming pomegranate in various science laboratories are producing evidences of the fruit helping in reducing blood pressure, improving metabolism, preventing heart disease and certain types of cancers. It is thought to have beneficial antioxidants and prevent viral infections. It is rich in vitamin C, calcium and phosphorus. The entire tree has economic value, and besides for making fresh fruit juice, the product can be used for other processed food items, wine, leather and dying industry and pharmacy. India is a large producer of pomegranate, and Maharashtra is the largest producing state in India followed by Karnataka, Andhra Pradesh, Gujarat and Tamil Nadu.

Pomegranate is gaining importance in Maharashtra with cultivation becoming popular in districts like Nashik, Solapur and Ahmednagar. The two districts Nashik and Solapur account for over 73 % of the state’s pomegranate area. There are three main seasons for growing this fruit, and the main varieties in the state are Bhagwa and Ganesh. It is highly vulnerable to pests like the oily spot especially when the weather is moist and is highly perishable.

Orange (Assam)

Orange is a seasonal fruit. In the species of Blanco and reticulate, mandarin is an orange with thin, loose peel. It is consumed in raw form or in fruit salads and juice.

Mandarin is a native of Southeast Asia and the Philippines. It was taken to North Africa and South Europe in the middle ages and then to the USA by Spaniards. It is abundantly grown in Asia. Orange is rich in vitamins C, A, B, calcium, ascorbic acid and phosphorus and is a source of peel oil, acid and cosmetics. Citrus industry is the third largest industry after mango and banana in India.

In Assam, orange is grown in Tinsukia, Karbi-Anglong, Kamrup and Jorhat. In Tinsukia it is grown in all blocks mostly by the Moran community. The local variety is called Khasi mandarin or more commonly Humthira, Kamala and Ronga Tenga. A mature tree gives fruits for 15–20 years. The flowering season is July–August and harvesting session is November–January. The variety is bigger in size, has a loose jacket and is more juicy than others. The average orchard is 2–120 bighas in size.

Tinsukia is the largest orange producer district in Assam. Recently improper planting material, poor management and a problem called ‘citrus decline’ caused poor health of orchards and move growers towards tea plantation. However, because of labour-related issues in tea cultivation and due to technological support of Assam Agricultural University for horticulture, the area under Humthira increased. Most small tea growers intercrop tea with orange. There are no organized marketing arrangements and exploitation by commission agent and traders is common. Group and direct marketing of orange by farmers is a new initiative.

Muskmelon in Haryana

The fruit muskmelon (*Cucumis melo*) whose marketing is studied for Haryana is native to hot valleys of Southwest Asia. It is a warm season crop, requiring a long growing period to develop from seed to marketable fruit. It is sensitive to cold temperatures. The fruit is round, firm and orange colour and is moderately sweet by taste. It is commonly grown in tropical region and cultivated in India in the summer season from April to July. For best quality, these melons, also widely known as cantaloupe, are produced in hot dry conditions. The plant is annual and needs light watering. Sandy and light soil and dry river beds are suited for their cultivation although manure and fertilizer uses are essential for health of the plant. Rich in potassium muskmelon has numerous health benefits.

Kinnow in Punjab

Kinnow is a citrus fruits that originated as a hybrid of King and Willow leaf mandarins at Riverside, California. These fruits are medium, oblate, flattened and deep orange-yellow in colour and are very juicy. Having considerable market potential, kinnow has been promoted in India to enhance farm incomes. Punjab is noted to have potential for growing these crops and has become a leading producer

though cultivation is concentrated in a few districts. The southwestern region of Punjab comprising of Ferozepur, Muktsar, Bathinda and Mansa is considered as the kinnow belt accounting for 70 % of the area in the state. Ferozepur accounts for more than 50 % of kinnow area and production in the state.

Crops Covered in the Study: Vegetables

Potato (Assam, Uttar Pradesh, Punjab)

Potatoes were mostly grown and consumed in Europe, Northern America and the former Soviet Union at one time. Native South Americans started cultivation of potato, but later on, it was introduced to India by the Portuguese in the seventeenth century. It then was further spread by the British. Since the 1990s, potato production and the demand for potatoes in Asia, Africa and Latin America increased dramatically. According to the FAO, potato production in the developing countries exceeded the potato production in the industrial states for the first time in 2005. China is the largest potato producer today and nearly one third of all potatoes are harvested in China and India.

Potato is known for its edible energy and protein content. The protein in potato has biological value higher than cereals and even better than milk, and it is a wholesome food and has great potentials as a vegetable and a food item of the Indian population. Besides containing a high quantity of starch, potato is also rich in vitamin C, minerals and fibres. It can be processed into a number of tasty snacks such as chips and flakes. In India several tasty snacks are based on potato as a key ingredient. It is consumed by most Indians both as main food and snacks.

It is a short-duration crop mostly grown in the rabi season with maturity coming in 110–120 days. Bihar, Punjab, Haryana and West Bengal are among the producing states besides Assam and Uttar Pradesh. Potato is sown across Uttar Pradesh and is a commercial crop. Uttar Pradesh ranks first in area and second in production in potato. It is sown in October and November. A small proportion is exported or processed. In Uttar Pradesh, Agra is followed by Firozabad, Kannauj and Hathras as major producers. The price of potato is highly volatile. It reaches in maximum in rainy session and is low in January to March.

Potato cultivation is promoted in Assam. It is grown in sandy loam soils rich in organic matters. Seeds and pesticides are made available from local agencies and State Agricultural Department provides extension services to farmers. Export guidance is from Regional Agricultural Research Station, Shillong near Nagaon, but mostly potato is sold in different markets at Naltoli, Sonaibali, Kaliabor and Nagaon wholesale markets. Cultivation of sugar-free potato is becoming lucrative. Potato is an important cash crop in Nagaon in Assam, contributing to 5 % of the state production. Ideal time for sowing is October to November.

Potato is important among the vegetables grown in Punjab, and Jalandhar and Hoshiarpur are the leading districts to produce potato.

Onion (Maharashtra)

Bulbs of onion family along with figs and dates have been consumed since 5000 BC but, actual cultivation of onion possibly started 2,000 years later along with that of leeks and garlic in ancient Egypt. Cultivated onion was introduced by Columbus after his visit to Hispaniola to North America where the native Americans were already consuming wild onions found in the ecology. Although onion consumption is forbidden in some sects especially in India, many medicinal properties of onion are identified by research. They may have anticholesterol, anti-inflammatory and antioxidant properties and be effective against common cold, heart disease, diabetes, osteoporosis and head and neck cancer. Onions act as irritants to eyes. China, India, the USA and Turkey are major world producers of onions.

‘Bulb’ or common onion is cultivated in gardens and fields, and the fruit appears as yellow, red or white onions. Onions can be taken both as mature crops or as immature crops, and the young plant can be harvested before bulbing as summer onion. It can be canned or pickled. Onions may be grown from seed or, more commonly today, from stunted plants with small bulbs or ‘set’s started from seed the previous year. Seed-bearing onions are day-length sensitive. Most traditional European onions are ‘long-day’ onions. ‘Short-day’ onions, which have been developed in more recent times, are planted in mild-winter areas in the fall and form bulbs in the early spring and require only 9–10 h of sunlight to stimulate bulb formation. Either planting method may be used to produce spring onions or green onions, which are the leaves of immature plants. The tree onion produces bulblets instead of flowers and seeds, which can be planted directly in the ground. There are different varieties suited to diverse conditions.

Onion is in demand all over India as a major item in most food preparations for its flavour, taste and its pungent smell arising from a volatile oil. The significance of onion in the Indian diet has time and again been manifested by the political implications of a rise in onion price. Onion was brought under the Essential Commodities Act (ECA) 1955 after the price rose to a peak in 1998–1999, and the ECA was invoked. In 2004–2005 onion was taken out of the list of essential commodities by the Ministry of Consumer Affairs. India is the second largest onion-growing country in the world. Indian onions are famous worldwide for their pungency. The gulf countries are the main importers of the onion bulb, and neighbouring Pakistan and China are India’s main competitors in the global market. Onion-producing states include Maharashtra, Gujarat, Uttar Pradesh, Orissa, Karnataka, Tamil Nadu, Madhya Pradesh, Andhra Pradesh and Bihar. Maharashtra ranks first in onion production with a share of 18 %; however, in terms of productivity, Gujarat ranks first. It is grown both in the kharif and rabi seasons but mostly as a rabi or a late-kharif crop in Maharashtra.

Brinjal (Andhra Pradesh)

Brinjal or *Solanum melongena* is actually a fruit that is widely consumed across the world as a vegetable. The word brinjal is possibly derived from Portuguese 'beringela', but the vegetable has many alternate names like aubergine used in France; eggplant used in the USA, Australia, New Zealand and Canada; meloongen used in the Caribbean; and vengan, baingan and melongene used in countries like South Africa, Malaysia, India and Singapore, most of the names being of Arabic and north African origin. The plant is native to the Indian subcontinent, and its earliest mention is found in ancient Chinese agricultural treatise. Probably the vegetable reached the western world no earlier than 1500 BC. The vegetable's various names are generally related to its colour that can be purple (aubergine, baingan) or yellow and white (egg plant of the eighteenth century).

Brinjals were once erroneously believed to be poisonous and traditionally cooked after slicing, careful rinsing and salting to reduce fat absorption, but modern purple varieties do not need this treatment. Brinjals come with different colours from green to dark purple but are more commonly purple and elongated ovoid in shape. They are used in cuisines of different countries from East Asia to the USA and from Japan to Spain. The raw fruit is bitter but becomes tender and rich when cooked, and like tomato, its seeds, peel and flesh can all be eaten. Low in calorie, brinjals have strong nutrition value due to its high content of vitamin B complex, fibre, minerals and antioxidants and can help combat high cholesterol, aging, neurological anomalies and obesity.

A very wide range of shapes, sizes and colours are found in Indian brinjals, and the fruit can be as heavy as 1 Kg as in North India though smaller varieties and even miniature ones are also grown elsewhere. A particular variety known as Matti Gulla is grown in Karnataka. Dishes like baigan ki bharta in North India, gojju, begun pora in West Bengal and Bangladesh and its use in sambhar (in the south), dalma (Orissa) and achar demonstrate its versatile character. Although it is grown in temperate regions, sowing needs to be carefully planned as frost is extremely harmful. Brinjal being highly vulnerable to pests, some of which are common to other vegetables, sowing in land previously occupied by these related plants and sowing brinjal in quick succession need to be avoided. Good sanitation and rotation are important to avoid fungal diseases. Human intervention is required in spacing of plants, mulching and pollination.

Brinjal is a vegetable that is grown around the year and in both dry and wet areas of Andhra Pradesh. It is the third most important vegetable in Andhra Pradesh. Other brinjal-growing states are West Bengal and Orissa. Within Andhra Pradesh, East Godavari district is the leading district, followed by Kurnool and Chittoor. With 92 % moisture content, brinjal is rich in minerals.

Tomato (Himachal Pradesh)

Tomato, considered as a vegetable and alternatively also as an acid fruit, was first grown in South America from where it spread around the world following the

Spanish colonization of the Americas. Its many varieties are now widely grown, often in greenhouses in cooler climates. It is not known how it came into India. Tomato is a herb with a weak stem. In India the fruit varies in size between varieties from cherry tomato to beefsteak tomato. It is the most grown vegetable after potato and sweet potato but is leading among vegetables that can be canned.

The tomato fruit is consumed in diverse ways, including raw, as an ingredient in many dishes and sauces and in drinks. The tomato is now grown worldwide for its edible fruits, with thousands of cultivars having been selected with varying fruit types, and for optimum growth in differing growing conditions. Most cultivars produce red fruits, but a number of cultivars with yellow, orange, pink, purple, green, black or white fruit are also available. Tomatoes grown for canning and sauces are often elongated and have a lower water content. The fruits are harvested depending on the purpose of use. On the average fruit bearing takes 35–60 days. Tomatoes are spoilt easily due to high temperature, humidity, oxygen pressure and fruit firmness. Waxing reduces weight loss and increases shelf life.

China, the USA, India and Turkey are top producers. It is used in diverse ways, including raw in salads, and processed into ketchup or tomato soup. Unripe green tomatoes can also be breaded and fried, used to make salsa or pickled. Tomato juice is sold as a drink and is used in cocktails. In India tomato is used as an ingredient in most cuisines for taste. It is a food with considerable nutrient values including vitamin and antioxidants. Medicinal value of tomato has been of interest in recent times. The fruit is rich in lycopene, which may have beneficial health effects such as prevention of aging and prostate, urinary tract and breast cancers and protection from UV rays and is good for the heart. Tomato can be a source of certain toxins in the leaves though small in quantity and of salmonella. They can be stored for a short time at room temperature when raw, but ripe tomatoes need to be refrigerated.

Tomato accounted for 31 % of production of all vegetables in India. It is grown in tropical and subtropical climates with moderate rainfall and well-drained soil. Winter crop is planted in August–September. It can be organically cultivated in rotation with pulses and legumes. Andhra Pradesh, Orissa and Karnataka are major producers but Gujarat, Karnataka and Maharashtra have high crop yield. Shimla, Kullu and Solan in Himachal Pradesh are among the major producing districts. Himachal mostly produces off-season tomatoes because of its special climatic conditions. Tomato can also be produced in controlled conditions under greenhouses.

Arum (West Bengal, Emerging Market Channel Only)

Arums are bog plants, well known in North America for decorative varieties Arum is a genus of about 25 species of flowering plants native to Europe, northern Africa and western Asia, with the highest species diversity in the Mediterranean region. They are herbaceous perennial plants. The plants are mostly poisonous, only a few

members are significant as food. Taro, probably native to the wetlands of Malaysia, has been spread by Polynesian settlers throughout the Pacific Islands and as far as Hawaii. It has long been an important food for these peoples because it is one of the few starchy vegetables that thrive in a hot and very wet environment. In more modern times it has been carried to all tropical and near tropical areas including Africa and Central America. Cold-tolerant varieties are grown in China and Japan.

Taro corms (called taro root) are short underground stems rich in starch. Unlike most starchy vegetables, they are high in amylose, a starch soluble in hot water, and contain 3 % sugar which makes them somewhat sweet. Taro is indigestible when raw and can cause severe gastrointestinal distress if not properly prepared and cooked. In India taro corms and stems are used in some curries. In some areas young leaves are also cooked and rarely also the flowers. In Hawaii corms are used to make poi. Taro leaves are used for treating asthma, kidney disorders and gout. No secondary data on arum cultivation is available in India. Arum is raised as a minor cash crops in West Bengal where rice is the major choice. Arum is grown in the kharif season in a few districts for commercial reasons.

Cauliflower (Jharkhand)

Cauliflower may have originated in ancient Asia Minor with a different appearance from what it is now. It went through many transformations and reappeared in the Mediterranean region. It is an important vegetable in Turkey and Italy since at least 600 B.C., gained popularity in France in the sixteenth century and came to be cultivated in Britain and north Europe subsequently. Today global producers of this vegetable include the USA, France, Italy, India and China.

Cauliflower, a plant of the same family as broccoli and cabbage, consisting of a compact head (curds) made of underdeveloped flower buds, is a popular vegetable with taste and nutrient value and is a common item in the food platter of many communities. It is a rich source of antioxidant, vitamin C, vitamin K, vitamin B5, minerals and foliate though there may be some adverse health complications for individuals susceptible to gout and goitre. In India cauliflower is a common item of many cuisines as a main dish or snacks especially in the winter season. A few processing options are also emerging.

The crop requires great care. It is highly responsive to temperature so that choosing the right time, right variety and right sowing time is important for its cultivation. An early variety called Kunwari which is available in June–October, a middle season variety called snowball available in November–March and a late variety known as the late snowball available in March–June are common examples in India. Cauliflower is grown in cool and moist climate, and the climate of Ranchi district is congenial for its production. The seed is sown in raised nursery beds and

transplanted to well-prepared and intensely manured fields. Plant protection is essential. The amount of irrigation required depends on the level of moisture content in the soil.

Soya Bean (Madhya Pradesh)

Originated in China and East Asia many centuries ago, the legume soya bean is now grown in crop rotations worldwide due to advantages like geographical adaptability, nutritional value (it is protein rich), functional health benefit (good for heart), various end uses and processing possibilities and its environment-friendly nitrogen-fixing properties. Although it is a bean and merits inclusion among pulses, The Food and Agricultural Organization (FAO) classed it as an oilseed crop. Major world producers are the USA (35 %), Brazil (27 %), Argentina (19 %) and China (6 %). India contributes 4 % of the world soya bean production.

Soya bean is grown in climates with hot summers, and on a wide variety of soils, soya bean cultivation has incessantly gained popularity for use as health food, snacks, feed and even biodiesel, but environmentalists have blamed the spread of its cultivation in Brazil for destroying Amazonian rainforests, but soya bean can be cultivated using organic methods.

Fat-free soya bean is a primary and low cost animal feed, but it can be processed into a number of products including soya oil, nuggets, tofu and soya milk. Soya bean is a relatively new and minor crop in India in the oilseeds group in which groundnut and rape mustard are traditionally dominating, but its cultivation has increased phenomenally since the 1980s. It contributes 23 % of area under total oilseeds in India. The cultivation has however remained geographically confined. Madhya Pradesh, often called the 'soya state', accounts for 55 % of area and 57 % of production in the country. Soya-growing districts in the state of Madhya Pradesh include Ujjain, which is the leading one, Shahjahanpur, Sagar, Dewas, Rajgarh and Sehore. Soya bean is grown also in Uttarakhand.

Mustard (West Bengal, Traditional Market Channel Only)

Romans probably experimented with mustard as condiments and carried the seeds to Gaul centuries ago. Today China, India and Canada are major global producers. It is one of the earliest crops domesticated by man. Mustard seeds in India were found in the sites of Harappan civilization. Oil extracted from mustard seed is a common cooking medium in the country. Most states grow mustard, Rajasthan, Uttar Pradesh, Haryana and Madhya Pradesh being the largest producers. West Bengal accounts for 5 % of India's mustard production though it is raised as a subsidiary cash crop in winter supplementing boro rice.

Markets in Emerging Channels

Rythu Bazaar in Andhra Pradesh MVP Colony: Direct Marketing

Farmer's markets under the brand name Rythu Bazaar are located on government lands. They are equipped with parking facilities, shades, drinking water supply and toilet facility. Vegetables arrive at Rythu Bazaar (RB) throughout the year from local producers and also to an extent from remote areas. Transport and storage facilities with zero energy chambers for unsold produce add to sellers' convenience. There are 105 RB in Andhra Pradesh, and increasing arrival of vegetables is observed in 17 out of 23 districts of the state.

The RB operates outside of preview of Agricultural Market Committee, and the joint collectors of the concerned districts are responsible for the effective functioning of RB. Their duties are appointment of estate officers and horticulture consultant, holding weekly meeting with estate officers and the inspection of at least one RB every week in the district. Joint collectors are also responsible for arranging farmers' transport. Estate officers are responsible for allotment of stalls, providing weighing scales, formation of price fixation committees and prevention of the entry of middlemen. They are also responsible for the proper supply of power and water, transport facility, recording of daily arrivals and sales and conducting of meeting of all farmers once in a week to solve problems. The estate officer reports to the joint collector/director of marketing every week.

The outlet of Rythu Bazaar under study is located in the MVP Colony (or MVPRB henceforth). Established in 1999 along with 13 other RBs in Visakhapatnam district, MVPRB is established on 2 acres of government land and is well connected by roads. MVPRB has now become self-sufficient. It was awarded a rolling cup during 2002 by the state government.

The MVPRB has several stalls, out of which about 20 % are allotted on commercial basis for recovering the maintenance cost. The majority of the stalls are allotted to the farmers who come to sell vegetable grown only by them on a first come, first served basis daily. In addition, millers, physically handicapped (PHCs), cooperatives (forest produce) and super bazaar (grocery) also get allotments. Some of the shops are also allotted to DWCRA group, SGH groups and government agencies just to ensure availability of all vegetables to consumers in all the seasons whether grown locally or not.

Farmers come from distances up to 150 km from 33 villages around Visakhapatnam city. On the average, 20 farmers are known to come to MVPRB daily. Consumers are resident in a radius of 10 km. around the market. An estimated average of 25,000 potential buyers come to MVPRB on weekdays, and 4,000 people come during the weekend so that the customer arrival is well distributed. The MVPRB employs staff like estate officers, sub-staff, watchman, sweeper and

gardener. It provides reasonable infrastructure, telephone and computer facility for communication but no Internet and fax is available.

The process in which this market operates is as follows. 'Genuine farmers who are willing to have marketing link at Rythu Bazaar' from a cluster of 10–15 predominantly vegetable growing villages in the vicinity are identified by a team of Tahsildar, horticulture officers/agriculture officers who visit the villages. The member farmers are issued with photo identity card, containing the name of the farmer, his or her address, extent of landholding, the variety of vegetables grown and a photograph of the farmer/farmer with family members and farm servants that must be attested by horticulture consultant. The validity of identity card is 6 month from the date of issue though renewal is possible within about 15 days of expiry. No seller is allowed to enter into the Rythu Bazaar without photo identity card. Transport facility to pick up and drop is provided to registered farmers. The farmers are allowed to sell only vegetables grown by them although self-help groups (SHGs) are allowed to sell vegetables which are not grown by the farmers in the Rythu Bazaar. These SHGs are identified by the District Collector of the respective districts.

Prices are fixed by the market committee in consultation with the farmers committee on the basis of the communication received from the wholesale market of vegetable. The prices are fixed higher than the regional wholesale prices and lower than local retail prices in the area and announced through the public address system. Weighing scales are supplied to farmers temporarily without cost.

Farmer Groups in Assam

The major orange-growing pockets in Tinsukia are mostly located in remote rural areas where infrastructure facilities like road communication are very poor. Because of the economic condition, most of the orange growers could not afford to carry their produce in bulk quantities to the markets. Direct marketing by farmers, farmer's representative groups or self-help groups is being encouraged as an innovative emerging channel. Some of the growers are taking initiatives for formation of self-help group or growers' representative groups among them in their respective localities through group marketing in bulk quantities.

Adani Marketing Group in Himachal Pradesh

Adani Enterprises Ltd., is a large Indian business group with diverse interests in edible oils, ports, logistics, special economic zones, power, oil exploration and coal mining. An integrated storage handling and transportation infrastructure for fresh produce is set up in Himachal Pradesh under its wholly owned subsidiary 'Adani Agrifresh Private Limited'. The group managers have interacted with farmers

across the state which is suited for apple production and signed agreement with thousands of farmers for direct procurement.

The Adani group constructed three cold storage facilities in Shimla, and with the other major operator, the Indian Railway Board, gradually restricting itself only to Kinnaur district, the Adani group has emerged as the biggest trader in Shimla district. This group enrolls certain agents in the apple-growing areas, who in turn enrol members among apple producers who would be willing to sell the produce to the group. The members are supplied with plastic crates free of cost for collection of apple. The members are selected from high elevation apple-growing areas in the district to ensure high quality. The collected apples are brought to Adani stores. Due to popular pressure, the Adani group procures all grades of apples but keeps only 'A' grade apple for distant markets. The remaining grade apples are sold to local traders who further dispose apples through traditional channels.

PepsiCo: Contracting with Potato Farmers in Uttar Pradesh

PepsiCo India Holding Private Limited (PHIPL) founded in 1981 is one of the fastest growing companies dealing in food and beverages in the country. As a US-based multinational investor, the company has brought foreign investment into different food products including its soft drink and introduced healthier oils for its snacks like Lay's potato chips and Kurkure. More than 150,000 people were economically associated with the company. PHIPL provides the extension services and inputs like seeds, fertilizers and pesticides at reasonable rates to enable production of higher-quality potato. It has established a model of partnership with farmers (22,000) nearly half of whom are small and marginal farmers. The PepsiCo services are associated also with disease control packages, bank loans and weather insurance.

In Uttar Pradesh PepsiCo provides the seed of 'Chipsona and LR' varieties of potato along with other inputs to potato growers to produce the best quality of potatoes suitable for the preparation of chips, bhujias, etc. The beneficiary grower has to bring potato to PepsiCo's cold storage bearing the transportation cost. The price paid by PepsiCo was higher than the price prevailing in the regulated market. The purchased potato is stored in cold storage in Agra from where it is sent to processing units.

PepsiCo India Private Ltd. had started to purchase Chipsona variety of potato from farmers of Hathras district of Uttar Pradesh in 2009. It provides seeds of the Chipsona variety potato to growers on cash payment. Kits of pesticides along with a package of practices have been provided by the staff of PepsiCo. Two systems of purchasing of potato were adopted, (i) direct purchase from farmers from field and (ii) farmers bring the potato to cold storages where the staff purchase the potato. All the purchased qualities of potato are sent to its processing units located at Patiala, Pune and Kolkata for the preparation of chips, Lay's, Uncle Chips and Lehar Potato Bhujia. All these products are consumed within the country. The export of

processed product has not been done yet. The staff of PepsiCo is very much conscious about the quality of potato. They buy only Chipsona and LR variety of potato and nothing else.

Kishlay Snack Products and Bengena-Ati Surovi Gram Vikash Samity in Assam

A registered partnership firm under the Indian Partnership Act, 1932, the KSP has its registered Head Office at Dewan Path, Fancy Bazar, Guwahati, and its processing unit at Lokhra Chariali in Guwahati. A 'buy-back' agreement for potato cultivation, the first of its kind in Nagaon district as well as in the Northeast India, was initiated in October 2006 with the assistance of State Agriculture Department.

In a tripartite arrangement, a non-government organization (NGO), namely, Bengena-Ati Surovi Gram Vikash Samity, has made an agreement with the M/S Kishlay Snack Products (KSP) to buy special processing variety of potato seeds, namely, Kufri Chip Sona-I, II, LR-1533 and Atlanta from KSP at a pre-agreed price. The KSP in turn buys back all the produced potatoes as per stipulated terms and conditions and at a mutually agreed price from the Bengena-Ati Surovi Gram Vikash Samity.

The NGO has to bear all the expenses on the inputs supplied to the respective potato farmers registered with them, in advance. The input activities include land preparation, seeds, irrigation, manures and fertilizers, plant protection measures, grading, packing and loading. The value of the input supplied to the farmers in kind or cash are to be adjusted at the time of procurement of the product after harvest. Finally, the company on receipt of consignment at their factory makes the payment to the NGO. KSP provides full technical support to the farmers for a particular crop season of potato.

Satkar Fruit Products (Pratapgarh) in Uttar Pradesh

Established in 1987–1989 and located conveniently near the main road, Satkar Fruit Products (SFP) is one of the best known processing units in Pratapgarh district in Uttar Pradesh. The unit was registered from Fruit Processing Order (FPO) in 1990–1991. Murabba is the main product manufactured, but pickles, jams, squash and sweets are other items processed in the factory. The factory is situated close to Pratapgarh city and has its own equipment, machineries and other infrastructure required for the processing activities.

The unit processes more than 250 quintals of aonla in a year. It also has limited capacity to preserve the raw material allowing round the year processing, i.e. it buys the fruit aonla both as contracted purchases from orchards and direct purchases

from orchardists and traders of regulated markets. The processed products are in demand in other cities of Uttar Pradesh and in other states. There is competition from larger processing companies like Dabur, Baidyanath and Patanjali that also procure aonla from the area, and only 20 % can be procured by local processing units. The processed product is mostly sold via commission agents.

Deepak Fertilisers and Petrochemicals Corporation Limited (DFPCL)

DFPCL was initially specialized in manufacturing fertilizers, but the company has diversified through its Agri-Business & Farm Solutions (ABFS) division and is one of the corporate entities which has entered into agricultural markets both with backward and forward linkage activities. The agri-service division of DFPCL is known as 'Saarthie' whose main aim is to provide a complete basket of solutions and techno-commercial services to farmers to ensure higher yields and profitability. DFPCL has seven *Saarthie* centres in Maharashtra, namely, Nashik, Aurangabad, Pune, Solapur, Sangli and Ahmednagar.

Each *Saarthie* extension centre operates from a centrally located office managed by an agronomist who is assisted by a team of supervisors and technical assistants. Its agri-laboratory is equipped with modern instruments and GIS, and it has developed eleven soil fertility maps for testing micronutrients along with nutrient blending map for six districts in the state. Diagnostic facilities such as soil, water and plant testing and advisory services with field visits, video shows and crop guidance are provided on chargeable basis. Dissemination is arranged through audio-video training aids and seminars.

DFPCL also provides marketing links through food processing industries, facilitates farmers in obtaining crop loans and crop insurance and provides information about agriculture development programmes. The ABFS helps farmers obtain Global Gap certification to capitalize on the opportunity to export high-value items in European and US market and imparts training to create awareness about integrated crop and pest management, hazard analysis and critical control points and worker health and safety and in postharvest handling, grading and packaging of produce.

The ABFS also offers services to domestic and international buyers and addresses marketability of products of farmer members. Exports of agricultural commodities from India enjoy substantial prospects but require compliance with certain demanding standards. The supply chain of ABFS is well developed to fulfill the needs of overseas buyers on time. It has its in-house R&D facilities to provide effective solution for improving quality. The ABFS serves customers from the Middle East, Europe and the UK. It has its specialized fruit processing facilities and provides solutions in washing, selecting, crushing, pulping, vapour heat treatment of raw fruits and packaging and provides technical guidance to prevent spoilage when the client is a juice and pulp processor.

Farmers can be enrolled as a member in Saarrthie on payment of a lifetime membership fee and have a photo identity card. Services such as soil, water and plant testing are available on charged basis. For marketing service, the corporate intermediary procures fruits and vegetables and sells them to exporters and organized retailers operating in malls and supermarkets. Export market includes Europe, the UK and the Middle East, especially Dubai in case of onions. Supply chain of ABFS is well developed to fulfill the needs of overseas buyers on time. The DFPCL purchases products from farmers, packs them and transports them in refrigerated trucks to the buyer or to the port. The margin is between 10 % and 20 % in these outlets, but products can be sold at a loss or under a 'reduce to clear' code depending on demand and quality. The DFPCL does not have its own retail outlets although it has been involved in building a multi-format store and projects on expanding its agri-trade.

ITC and its e-Choupal in Madhya Pradesh

The e-Choupal initiative of the large company ITC Ltd. provides farmers access to the Internet. Earlier a tobacco giant but today highly diversified, ITC has been providing different services to Indian agriculture and processing agro-products for consumer satisfaction. Formed in 1910, as Imperial Tobacco Company of India Limited, ITC started producing cigarettes but later diversified extensively into paper board, IT, packaging, hotels, food and agribusiness. The ownership of the company was gradually Indianized, its name changing to India Tobacco Company Limited in 1970 and then to ITC Limited in 1974 although the British major BAT has substantial holding even now.

In 1990 ITC took advantage of its agri-sourcing competency to set up the agribusiness division for export. Its foray into food business began in 2001 in the 'kitchens of India' ready-to-eat Indian gourmet dishes and with the brand 'Mint-O' in 2002, *Aashirvaad Atta* in 2003, *Sunfeast* biscuit segment and Bingo snacks, so that 8 years down the line the food business became sizable with 200 products and 6 brands, growing market share, and impressive distribution. IT entered retailing and garment business with *Wills* sport range wear, for which it plans to produce cotton. Interestingly ITC's diversification included information technology (ITC Infotech India Limited) generating IT-enabled services.

The agribusiness of ITC is one of India's largest exporters of agricultural products and biggest foreign exchange earners. The e-Choupal initiative enhanced competitiveness of Indian agriculture by providing farmers access to the Internet. The initiative began in 2000 with soya farmers in Madhya Pradesh. Indian farmers typically buy at retail price (high) and sell at harvest price (low), but e-Choupal brings the power of scale to small farmers who pool their demand. Farmers compare price and place order on the net. Although farmers sell through e-Choupal whosoever they wish to, the company also purchases products leading to a rise in demand.

With ITC's entry as a purchaser, farmers, even who are not selling to ITC, gain and find mandi rates more favourable than otherwise owing to the force of competition. The farmers sometimes also prefer ITC because of accurate weighting, better testing and timely spot payment they offer. At the same time high-yielding seeds, other input and provisions can be conveniently purchased through e-Choupal. By this method, the ITC also provides a conduit to several other agro-companies to take their products into rural India. For selling through e-Choupal, the trader is charged a fee. Each e-Choupal covers between five and six villages. It is also launching a chain of giant rural malls.

Internet is now used by the farmers not only to check (local and global) prices but also information on weather, soil testing, farming techniques and inputs. The e-Choupal is equipped with personal computers connected to the Internet via VSAT, a printer and power backup and is managed by a 'Sanchalak'. This has meant overcoming infrastructural problems to build up the network and training the manager and the farmers with computer skills, building up trust and providing a Hindi (local language)-based website and user-friendly keyboard. It is by far the biggest Internet-based intervention in real India.

The ITC e-Choupal therefore helps farmers to access unbiased price information not only from local market but also distant once. Farmers also check price movements of soya bean prices in Chicago Board of Trade from their village in the local language. At the same time, the farmer in Sehore acquires information on weather, improved farm practices, gets extension and soil testing services and demonstration and purchases quality inputs and consumable goods at the hyper-market called Sagar Choupal established in the yard at fare prices. Their produce is also purchased at standard norms defined by the Choupal's standardization and grading facility. The minimum prices are fixed the day before sale and there is some element of risk protection. Computerized weighting facilities are available to the sellers along with ATM banking. There is no tax or fees on infrastructure in the form of market yard, canteen, parking and drinking water. There is no arrangement for staying overnight and no warehousing facility.

Mother Dairy

Mother Dairy was set up in 1974 under the Operation Flood Program and is now a wholly owned subsidiary of the National Dairy Development Board (NDDB). Under its brand, the Mother Dairy sells dairy products like liquid milk (toned and fresh cream), ice creams, cheese and butter, edible oils of Dhara range and fresh and frozen vegetables and fruits as well as fruit juices at the national level. It has its own distribution network.

Significant part of its requirements of liquid milk is sourced from dairy cooperatives and that of fruits and vegetables from growers' associations. As a parastatal endeavour, Mother Dairy is not profit driven; rather empowerment of farmers and milk producers, equity, fair prices for both producers and consumers

and maintaining quality standards are dominant objectives addressed with the help of automation, state-of-the-art technology and accreditation of quality. It derives significant competitive advantage from its unique distributional network of bulk vending booths, retail outlets and mobile units. An array of fresh fruits and vegetable products are sold under the brand name SAFAL through a chain of over 400 shops and over 20,000 outlets in various parts of the country.

Reliance Fresh in Jharkhand and Haryana

Reliance Fresh (RF) is a wholly owned subsidiary of Reliance Industries Limited (RIL) and is the first foray into retailing by the giant. The aim of this initiative was to take advantage of the flaws in the system of marketing food by creating a large retail network, to enter into the business of food a most important product in any country and to build up profitability. Thus, the reliance market chain represents an intermediation by a private company that works for profit and has its own retail outlets. RF was born in 2006 when the first store was open in November in Hyderabad. It evolved from ranger farm RF a model that pre-existed the RF.

The business model is based on operating small- and medium-size stores and aims to bring high-quality and fresh vegetables to consumers at affordable prices. Reliance's retail supply chain in the Ranchi district links a few thousand farmers through its collection centre with Reliance Fresh outlets that sell to consumers. The produce is marketed by farmers in this chain almost from the farms, storage provisions being available at the collection centres. Product is also stored in 28 stock-keeping units at the village level, the catchment area being Pithoria collection centre of Kanke block in Ranchi. In contrast no storage facility is available in the traditional marketing channel in the state.

RF today has initiated a new retail culture in the National Capital Region (Delhi and designated surrounding areas) by opening a numbers of food stores that compete with pushcard, vendors and kirana stores. Stores in Noida, Gurgaon, Ghaziabad and Faridabad sell fruits, vegetables, grocery and dairy products (source from peri-urban farm land). All the stores are owned by the company but varied in size and format. A typical RF store is managed by a 'professional manager' and several staff members. Stock-keeping unit occupies store space. A City Processing Centre (CPC) for fruits and vegetables is located in Naroda. Fruits and vegetables are classified into categories such as leafy vegetable, basic vegetable and sprouts. A small percentage is also cut and packed. The stores place demands on the CPC which in turn consolidates the indents and places the final demand on the collection centres (CC). The CC buys from farmer at 'offer prices' on a voluntary basis. These agreements of purchase from producer are oral contracts and are not obligatory commitments. The pricing process is set to be 'messy' and delivery at that price is uncertain. The RF procures high-quality (grade A) fruits and vegetables, and higher price is paid for better quality products. The task of sorting and grading is undertaken by farmers prior to delivery, and the products are only visual test for

damage, quality standard and size at the CC. Customer arrival is measured by 'footfalls' which increase in the weekend. On the average fruits and vegetables account for only 2.5 % of the sales. Some of the products are pre-packed but with 'expiry dates'. Often the prices in the stores are lower than those charges by unorganized retailers. The sales are promoted by leaflet and banners. Stocks are often 'cleared' at lower prices and unsold fruits and vegetables are dumped. Farmers reported 23 % of tomatoes they offered were rejected.

Markets in Traditional Channels

APMC Naveen Fruits and Vegetables Market, Agra in Uttar Pradesh

This market was established in 1999 but the marketing activity was started on 12 April 2001 in this market. It is an exclusive market of fruits and vegetables. There is no Market Board at present. The area of this mandi is around 7.30 ha. The fruits come from different states in the market, while potato and vegetables come from the adjoining villages of Agra district. Almost all the basic amenities such as business shops, electricity, canteen, telephone, bank and water are available in the market yard, but the quality of service leaves much to be desired. The infrastructure facilities are not up to the mark. The condition of internal roads is in poor condition. The sewer system was very poor in the market. Telephone was mostly found dead. The banking facility was also not good to fulfill the needs of buyers. The auction of potato is generally done in open places. The price of the potato was determined on the basis of quality and size of potato.

APMC, Krishi Utpadan Mandi Pratapgarh, Uttar Pradesh

The Krishi Utpadan Mandi, Agra, is the selected traditional marketing channel for potato. One among eight markets in the district, the Agra Mandi was established in 1977, under APMC Act 1964. Spread over 39 acres of land and operating on 6 days a week, it offers amenities like farmer guest houses, bank, veterinary hospitals, canteen, shed, drinking water and lighting of the parties. Cleaning, grading and owning facilities are available for the sale and purchase of commodities like potato, bajra and wheat. Mandi fee and development charge help to meet the cost. All the aonla-growing villages of this district are attached with this market. It is totally exclusively devoted to fruits and vegetables marketing.

The market has been fully constructed. The condition of roads and sewer system are in good condition. The price of aonla depends upon the quality and size of aonla. However, the price of aonla was fluctuating on the basis of arrival of aonla in the

market. The auction of aonla takes place in the night and sales are mostly through open auctions in the market.

Purna Market in Andhra Pradesh

Among the four regular markets in Visakhapatnam, Purna Market is the oldest one with 1 multistoried building, 94 stalls, 3 gates and a small space for parking. It has an experience of 60 years in dealing with all agricultural commodities under the supervision of Greater Visakha Municipal Corporation. There is no cold storage facility and sellers have to store their products in stalls. Retailers purchase vegetables from wholesalers or commission agents in Gnanapuram wholesale market, 3 km away from this market. The market has small lanes, electricity, water supply and sanitation, while banking facility is located outside the market. The seller may have landline telephone or mobile facilities.

Satana APMC Market

The APMC-regulated market in Satana has operated since 1948 catering to 165 villages. At that time of survey, it had a Market Board and an elected Market Committee. The market is endowed with sheds, godowns, canteen, communication means and other infrastructure. About 37 commodities including foodgrains are auctioned in the Satana market which also has a livestock market. The average arrivals are stated to be 0.14 million quintals (100 Kg) of onions and 7,704 crates (of 20 Kg carrying capacity each) of pomegranate as of 2009.

e-Choupal of ITC

The e-Choupal is an initiative of ITC Limited which is a large multi-business conglomerate in India. In Indian agriculture, characterized by fragmented farms, weak infrastructure and the involvement of numerous intermediaries, it is a means to link the market directly with rural farmers via the Internet. The programme involves the installation of computers with Internet access in rural areas of India to offer farmers up-to-date marketing and agricultural information. Procurement of agricultural and aquaculture products like soya beans, wheat, coffee and prawns is facilitated by the model.

ITC trains a local person usually a farmer as an e-Choupal *sanchalak* to manage the Internet kiosk in the village. The computer is housed in the sanchalak's house and is linked to the Internet via phone lines or by a VSAT connection. Each installation serves an average of 600 farmers in the surrounding 10 villages

within about a 5 km radius. The *sanchalak* bears some operating cost but in return earns a service fee for the e-transactions done through his e-Choupal. The warehouse hub is managed by the same traditional middlemen, now called *samyojaks*, but with no exploitative power. Indeed these middlemen make up for the lack of infrastructure and fulfill critical jobs like cash disbursement, quantity aggregation and transportation.

The e-Choupal scheme creates community of e-farmers with access to daily prices of a variety of crops in India and abroad including mandi prices. Farmers can directly negotiate the sale of their produce with ITC Limited or other buyers. The access to internet helps farmers not only to get the best prices but also to find out about many other important things – weather forecasts, the latest farming techniques and crop insurance – and to place orders for agricultural inputs like seeds and fertilizers. The exposure motivates farmers to improve the quality of their products and is in fact an instrument for farmers to change the quality of life and their entire outlook.

Table A.3 Agricultural and Land use statistics on sample districts in 2000s decade

District Name	State Name	Irrigation Source	Main food crop Name	Cropping intensity Ratio	Irrigation intensity %	Average farm size Hectare	Small farm %
Murshidabad	West Bengal	Well, canal, tanks	Rice, wheat, oilseeds, jute	2.35	70	0.74	95.43
Visakhapatnam	Andhra Pradesh	Canals, tanks, tube wells, dug wells	Rice, maize	1.23	34.9	0.9	89.54
Bhagalpur	Bihar	Well, canal	Rice, maize	1.18	35.8	0.56@	94.00@
Ranchi	Jharkhand	Well, lift irrigation, others, ponds	Rice, maize	1.13	9.4	-	-
Shimla	Himachal Pradesh	Kuhl, canal, tube wells	Wheat, maize, fruits	1.32	3.9	1.13	84.42
Solan	Himachal Pradesh	Kuhl, canal, tube wells	Wheat, maize, vegetables	1.69	33.5	1.73	71.78
Sehore	Madhya Pradesh	Well, tube wells, canals	Soya bean, wheat, chickpea	1.63	62.1	2.71	55.11
Nashik	Maharashtra	Well	Rice, fruits, onion,	1.09\$	20.9	1.67#	74.00#
Tinsukia	Assam	No irrigation	Rice, oilseeds, vegetables	1.4	0	1.73	79.13
Nagaon	Assam	Other sources	Rice, oilseeds, jute	1.27	4.8	1.07	80
Agra	Uttar Pradesh	Ground water	Wheat, bajra	1.46	90.2	1.13	90.3
Pratapgarh	Uttar Pradesh	Ground water	Wheat, bajra	1.37	88.3	0.59	97.8
Hathras	Uttar Pradesh	Ground water	Wheat, bajra	1.6	99.6	1.02	80.5
Sonepat	Haryana	Canal, tube wells	Cereals, fruits and vegetables, pulses	1.94	96.2	1.57	81.4
Kurukshetra	Haryana	Tube wells	Cereals, fruits and vegetables, sugarcane	1.94	100	2.6	70.2
Gurgaon	Haryana	Tube wells	Cereals, oilseeds, fruits and vegetables	1.39	93.4	1.57	83.3
Ferozepur	Punjab		Wheat, rice, cotton, fruits	1.85	99.9	5.8	17.6
Jalandhar	Punjab		Wheat, rice, potato	1.78	98.2	4.56	25

Notes: # Figures are for 2001 as survey was not conducted in 2005-06 and @ figures are from Economic Survey of Bihar 2009-10. \$ figure are corrected. Cropping intensity = Total cropped area/Net sown area, Irrigation Intensity= Net irrigate area/Net sown area. Small farms are up to 2 hectares in area. Source: Ministry of Agriculture (2008), and Agricultural Census 2005-06.

Table A.4 Population statistics in the sample districts in 2000s decade

District Unit	State	Forest land (%)	Population		Scheduled caste %	Scheduled tribe %	Hindu*		Below poverty line**		Employed in agriculture**	
			Density	Rural %			%	tribe %	%	%	%	%
Murshidabad	West Bengal	0.14	1,102	87.5	12	1.3	35.9	31.9	54.4	56.7		
Visakhapatnam	Andhra Pradesh	39.53	343	60.1	7.6	14.5	96.2	11.1	60	55.1		
Bhagalpur	Bihar	0.03	946	81.3	10.5	2.3	82.2	44.3	49.5	58.5		
Ranchi	Jharkhand	20.02	362	64.9	5.2	41.8	50.2	44.3	64.6	74.5		
Shimla	Himachal Pradesh	25.63	141	76.9	26.1	0.6	97.5	7.9	70	39.3		
Solan	Himachal Pradesh	11.21	259	81.8	28.1	0.7	95	7.9	77	39.3		
Sehore	Madhya Pradesh	26.32	164	82	20.5	10.8	89.1	37.1	63	75.9		
Nashik	Maharashtra	19.91	322	61.2	8.5	23.9	86.2	23.7	67.8	66.4		
Tinsukia	Assam	34.72	303	80.5	2.7	5.8	89.5	40	63.3	59.8		
Nagaon	Assam	21.42	583	88	9.3	3.9	47.8	40	61.7	59.8		
Agra	Uttar Pradesh	8.94	896	56.7	21.8	0	89.6	31.2	60.9	56		
Pratapgarh	Uttar Pradesh	0.16	735	94.7	22	0	85.9	31.2	62.9	56		
Hathras	Uttar Pradesh	1.22	721	80.2	25.2	0	89.4	31.2	64.1	56		
Jalandhar	Punjab	2.1	747	52.5	37.7	0	96.8*	6.4	73.9	47.7		
Ferozepur	Punjab	2.24	328	74.2	22.8	0	98.3*	6.4	45.3	47.7		
Sonepat	Haryana	0.4	603	74.9	18.1	0	96.5	8.3	72.8	44.9		
Kurukshetra	Haryana	0.38	540	73.9	20.5	0	98.2*	8.3	69.9	44.9		
Gurgaon	Haryana	2.96	717	77.8	11.3	0	62.2*	8.3	62.9	44.9		

Notes: *Hindus include Sikhs in Punjab Haryana. **Figures are at state level.
Source: Census 2001, NSSO (2007-08)

Appendix 3: Sample Details: Corporate Market Intermediation

Table A.5 Maharashtra sample profile of onion and pomegranate growers

Attributes	Onion		Pomegranate	
	TMC	EMC	TMC	EMC
<i>Inclusiveness of the market channels (% of households in sample)</i>				
Hindu community	100	100	100	100
Scheduled caste	2.9	0	8.6	0
Scheduled tribe	0	0	0	0
Below poverty line (BPL) card	25.7	0	11.4	0
Living in kutcha house	28.6	0	31.4	0
Female headed	2.9	0	0	0
<i>Ownership of assets (% of households in sample)</i>				
Owning tractor	37.1	75.0	40	33.3
Owning harvester	14.3	16.7	2.9	0
Owning pump sets	100	100	100	100
Average farm size (ha.)	3.3	5.9	2.8	2.5
<i>Ownership of communication facilities (% of households in sample)</i>				
Owning motorcycle	65.7	100	88.6	100
Owning four wheeler	22.9	33.3	14.3	66.7
Owning at least one mobile phone	91.4	91.7	97.1	100
Owning Internet	2.9	0	2.9	0
<i>Education of the household members (%)</i>				
Primary or less	30.3	34.9	37.4	38.5
Secondary	30.9	26.98	31.6	38.5
Higher education	38.8	38.1	31	23.1
Years of education	8.6	7.9	7.6	7.6
<i>Education and age of head</i>				
Average age (years)	47.6	49.8	47.3	37.3
Average education (years)	9.3	9.7	10.6	11.3
<i>Farm classes (% sample holdings)</i>				
Operating small/marginal holding	37.2	8.3	48.6	66.6
Operating medium holding	28.6	25.0	28.6	0.0
Operating large holding	34.3	66.7	22.9	33.3
Operating larger holding (>10 ha)	5.7	16.7	2.9	0.00

Table A.6 Himachal Pradesh sample profile of apple farmers

Attributes	Traditional marketing channels	Emerging marketing channels
<i>Inclusiveness of the market channels (% sample households)</i>		
Hindu	100	100
Scheduled caste	4	24
Scheduled tribe	0	0
Female headed	0	0
With income from salary	19.8	100
Below poverty line	12.0	0
<i>Education of the household members (% sample household members)</i>		
Illiterate	9.37	19.91
Up to primary	29.9	32.6
High school education	54.0	54.2
Higher education	16.04	23.1
Computer trained	0.95	0.89
<i>Age and education of head of sample household (years)</i>		
Age of head	53	51
Education of head	9	10
<i>Ownership of communication facilities (% sample households)</i>		
Computer	8	10
Mobile phone	72	100
Motorcycle	0	0
<i>Ownership of assets</i>		
Average farm size (ha)	1.25	1.03
Pump set	0	0
Tractor	0	0
<i>Farm classes (% sample holdings)</i>		
Operating small holdings	86	88
Operating medium holdings	14	12
Operating large holding	0	0

Table A.7 Madhya Pradesh sample profile of soya bean farmers

Attributes	Traditional marketing channels	Emerging marketing channels
<i>Inclusiveness of the market channels (% sample households)</i>		
Hindu	91.4	89.2
Scheduled caste (SC)	11.43	2.7
Scheduled tribe (ST)	2.8	2.7
Below poverty line (BPL)	11.4	0
Female headed	0	0
Kutcha house	31.4	51.3
<i>Ownership of communication facilities (% sample households)</i>		
Mobile phone	48.6	78.4
Internet	2.9	8.1
Telephone landline	25.71	10.81
<i>Education and age of head (years)</i>		
Age of the head	53	47
Education of the head	6	9
<i>Education of the household members (% sample household members)</i>		
Members with primary education	52	49
Members with secondary education	28	10
Members higher education	20	42
<i>Ownership of assets (% sample households)</i>		
Tractor	25.7	35.1
Motorcycle	68.6	81.1
Four wheeler	0	8.1
Pump sets	94.3	97.3
Average farm size (ha)	2.40	3.01
<i>Farm classes (% sample households)</i>		
Small holding	45.71	8.11
Medium holding	31.43	48.65
Large holding	22.9	43.2

Table A.8 Disposal of product in the corporate market intermediation channel (%)

Attributes	Himachal Pradesh	Madhya Pradesh	Maharashtra	Maharashtra
Crop	Apple	Soya bean	Pomegranate	Onion
Marketed	97.1 (1.01)	85.84 (0.98)	100 (1.0)	100 (1.0)
Home/farm consumption	2.93 (0.84)	14.16 (1.16)	0 (—)	0 (—)
Wastage ^a	2.6 (0.77)	3.55 (1.17)	9.7 (0.49)	4.98 (0.40)
Sold in specified market	97.26 (1.01)	95.86 (0.99)	90.37 (14.37)	18.65 (2.25)
Marketed but sold elsewhere	0 (—)	0 (—)	0 (0.0)	76.4 (1.12)

^aExpressed as percentage of marketed amount. Marketed share and home consumption are expressed as percentages of production. Sold in specified market and in other markets are percentages of total marketed amount. Except in the case of onion, all products are marketed only in the specified channel where wastages are suffered but no rejection is reported. In the case of Maharashtra, voluntary diversion to other markets constitutes the item marketed but sold elsewhere. Rejection data is not separately provided.

Table A.9 Farm practices among sample farmers of Maharashtra (onion and pomegranate)

	Onion		Pomegranate	
	Traditional marketing channels	Emerging marketing channels	Traditional marketing channels	Emerging marketing channels
% households				
Using chemical fertilizers	97.1	83.3	97.1	100
Using organic fertilizers only	2.9	16.7	2.9	0
Hiring labour (labour)	72.9	83.4	73.6	85.8
Using pump sets	100	100	100	100
Using sprinklers	0	0	0	0
Using drip	5.7	8.3	34.3	33.3
Using tractors	37	75	40	33
Using own storage	54.3	66.7	28.6	33.3
Using micronutrient (Rs/ha)	1,989	1,884	8,000	6,789
Owned land	99.7	100	96.4	100
Irrigated land	91.6	86.3	91.8	100
Cropping intensity	139.8	135.6	138.2	152.6
Main source of irrigation	Well	Well	Well	Well
Main crops	Onion, maize	Onion, maize, pomegranate	Pomegranate, maize	Onion, maize, pomegranate
Main source of irrigation	Well	Well	Well	Well

Table A.10 Expenses on inputs among sample farmers of Himachal Pradesh (apple)

	Unit	Traditional marketing channels	Emerging marketing channels
Machinery used	Rs/ha	72	117
Chemical fertilizer	Rs/ha	5,802	14,500
Organic fertilizer	Rs/ha	6,260	12,325
Insecticide/pesticide	Rs/ha	6,448	13,592
Cost of seeds/plants	Rs/ha	4,860	11,271
Hired labour	Rs/ha	17,383	19,995
Leased land	% operated land	0	0
Irrigated land	% operated land	0	0
Land under specified crop apple	% operated land	100	100

Table A.11 Farm practices among sample farmers of Madhya Pradesh (soya bean)

Households (%)	Traditional marketing channels	Emerging marketing channels
Using pump sets	94	97
Using sprinkler	0	0
Using tractor	0	0
Drip	0	0
Own storage	94	100
Unirrigated land (% land)	40	27
Hiring labour	100	100
Using organic fertilizer	100	100
Using fertilizer	100	100
Using micronutrient	27	9
Insecticide	100	100
Own land (% operated land)	60	73
Irrigated land (% operated land)	100	100

Appendix 4: Sample Details: Contract Marketing

Table A.12 Sample profile of potato farmers in Punjab

Variables	Units	Emerging marketing	Traditional marketing
		Channel	Channel
<i>Social</i>			
Hindu	% households	0	0
Sikhs	% households	100	100
SC or ST	% households	0	0
Below poverty line	% households	0	0
Female headed	% households	0	0
Age of head	Years	49.6	47.6
<i>Economic assets</i>			
Kutcha house	% households	0	0
Owning motorcycle	% households	94.14	100
Owning four wheeler	% households	68.57	50
Owning tractor	% households	94.29	100
Owning pump sets	% households	100	100
Average farm size	Hectare	12	14.8
Education of head	Years	63	55
Members with higher education	% households	25.7	30
Owning mobile	% households	94.25	100
Owning computer	% households	56.14	50
<i>Farm classes</i>			
Average farm size	Hectare	15.6	13.7
Small and marginal	% households	10	14.29
Medium	% households	20	28.57
Large	% households	57.14	70

Table A.13 Sample profile of potato farmers in Assam

Attributes	Emerging marketing channels	Traditional marketing channels
<i>Social attributes % households in samples</i>		
Hindu community	14	10
Muslims community	86	90
SC by caste	8	4
Below poverty line	36	34
Kutcha house	20	26
Female headed	6	6
Age of head (years)	51.7	51.8
<i>Farm assets % households in samples</i>		
Owning tractor	0	0
Owning tiller	26	24
Owning harvester	2	0
Owning trolley	60	60
Owning pump sets	76	84
Average farm size	2.1	2
<i>Education (% of household members)</i>		
Education of head	4.9	4.8
Illiterate	9.7	11.5
Primary	44.9	48.1
Higher education	21	18.4
<i>Ownership of communication facilities (% households in samples)</i>		
Owning motorcycle	24	34
Owning mobile	84	86
Owning computer	8	4
Internet	4	0
<i>Farm class (% households in samples)</i>		
Small and marginal (0–2 ha)	60	68
Medium (2–4 ha)	32	24
Large (>4 ha)	8	8

Table A.14 Sample profile of farmers in Uttar Pradesh

Attributes	Emerging	Traditional	Emerging	Traditional
	Potato		Aonla	
<i>Social attributes % households in samples</i>				
Hindu community	100	94.29	96	100
SC or ST by caste	4	14.29	8	2.86
Below poverty line (BPL) card	0	5.71	0	5.71
Living in kutcha house	72	82.86	68	74.28
Female headed	0	2.86	0	0
Age of head (years)	53	52	52	52
<i>Farm assets % households in samples</i>				
Owning pump set	60	68.57	7	14.29
Owning tiller	24	2.86	0	0
Average farm size	2.3	3.0	3.4	1.7
<i>Farm class % households in samples</i>				
Small or marginal holding operators	68	49	51	66
Medium holding operator	16	31.43	16	28.58
Large holding operator	16	20	12	5.71
<i>Ownership of communication facilities % households in samples</i>				
Owning motorcycle	84	80	84	88.57
Owning at least one mobile phone	80	54.29	96	65.71
Owning computer	8	2.9	4	0
<i>Education % of household members</i>				
Education of head (years)				
Primary or less	9.16	26.85	9.35	–
Secondary education	54.2	60.4	51.8	–
Higher education	19.1	12.8	2	–

Note: – not reported

Table A.15 Method of potato cultivation in Assam

Particulars	Unit	Marketing channels	
		Traditional	Emerging
<i>Machinery used</i>			
Owning tractor/ power tiller	% households	78	100
Sprayer	% households	100	100
<i>Plot irrigated</i>			
By pump sets	% households	100	100
By sprinkler	% households	0	0
By drip	% households	0	0
<i>Fertilizer use</i>			
Using chemical fertilizer	% households	100	100
Using compost	% households	100	100
Using organic pesticide	% households	0	0
<i>Storage</i>			
Having own storage	% households	0	0
Hiring storage	% households	0	0
<i>Other</i>			
Sources of seeds		Purchased	Purchased
Hired labour	% households	65.7	70.5
Own land	% households	98.9	98.1
Leased land		1.1	1.9
Irrigated land	% households	100	100
Cropping intensity	Ratio	1.8	1.8
Source of irrigation		Ground water	Ground water
Share of potato in cropped area	% households	9.2	9
Other horticulture crops		Banana, lemon, acrenut	Banana, lemon, acrenut
Main crops		Kharif and boro paddy, jute, potato, vegetables	Kharif and boro paddy, jute, potato, vegetables

Table A.16 Disposal of potato in Assam

Disposals	Unit	Contract sales to processor	Traditional marketing channel
Home consumption	% production	2.69	3.06
Marketed	% production	95.61	95.47
Sold in channel	% marketed	59.97	77.99
Sold elsewhere	% marketed	39.69	20.71
Not sold	% marketed	0	0
Sold total	% marketed	99.66	98.7
Wastage total	% production	2.71	2.03
Sold at farm gate	% sales	60.18	0

Table A.17 Farm practices in Madhya Pradesh (potato and aonla)

	Emerging	Traditional	Emerging	Traditional
	Potato		Aonla	
Main source of irrigation	Ground water	Ground water	Ground water	Ground water
Owned land (% operated land)	87.9	100	100	100
Irrigated land (% operated land)	86	100	100	100
Crops	Potato, bajra, wheat		Aonla, wheat, arhar, rice	
Cropping intensity	2	2	1.3	1.4

Table A.18 Farm practices in Punjab (potato)

Variables	Units	Emerging marketing channel	Traditional marketing channel
Own land	% land	100	100
Leased land	% land	74.29	80
Irrigated land	% land	100	100
Cropping intensity	Ratio	2.32	2.57
Source of irrigation		Ground water	Ground water
Main crops		Wheat, paddy, maize	Wheat, paddy, maize

Appendix 5: Sample Details: Organized Retailing

Table A.19 Sample profile of farmers in Jharkhand and Himachal Pradesh – tomato and cauliflower

Attributes	Jharkhand	Himachal Pradesh	Jharkhand	Himachal Pradesh
	Cauliflower	Tomato	Cauliflower	Tomato
	EMC	EMC	TMC	TMC
<i>Household characteristics(% sample households)</i>				
Hindu community	98	100	84	100
Muslims community	0	0	0	0
Christian community	2	0	16	0
SC by caste	0	38	0	42
ST by caste	6	0	12	0
Below poverty line	4	NR	12	NR
Kutcha house	52	NR	44	NR
Female headed	0	0	0	0
Age of head (years)	44	0	35	0
<i>Ownership of communication facilities (% households in samples)</i>				
Households owning at least one mobile phone	82	0	60	0
Computer	6	0	4	0
Households having an Internet connection at home	0	0	0	0
Owning motorcycle	20	0	16	0
Owning four wheeler	4	0	0	0
<i>Farm assets (% households in samples)</i>				
Owning tractor	14	0	8	0
Owning tiller	0	0	0	0
Owning harvester	0	0	0	0
Owning pump sets	14	0	10	0
Average farm size	2.95	0.87	3.13	0.83
<i>Education (% of household members)</i>				
Non-school goers	16.18		18.28	
Illiterate	4.62	91.2	2.28	87.6

(continued)

Table A.19 (continued)

Attributes	Jharkhand	Himachal Pradesh	Jharkhand	Himachal Pradesh
	Cauliflower	Tomato	Cauliflower	Tomato
	EMC	EMC	TMC	TMC
Primary	46.82	37.8	39.43	39.8
Matriculation	12.14	56.2	21.14	59.2
Higher education (matriculation and above)	32.38	56.2	40.01	59.2
<i>Farm class % households in samples</i>				
Small farmers	36	72	54	88
Medium farmers	44	10	28	4
Large farmers	20	4	18	2

Table A.20 Sample profile of farmers in Haryana – tomato and muskmelon

Particulars	Tomato		Muskmelon	
	TMC	EMC	TMC	EMC
<i>Ownership of communication facilities (% households in samples)</i>				
Hindu households	100	100	84	74
Muslim households	0	0	16	26
SC households	22	22	14	18
ST households	2	0	0	0
OBC households	22	38	50	44
BPL households	44	50	34	44
Kutcha and semi-kutcha dwelling	0	4	12	24
Female headed	0	0	0	0
<i>Ownership of communication facilities (% households in samples)</i>				
Mobile phone	76	88	92	82
Computer	0	6	10	18
Internet	0	0	10	6
<i>Age and education of the head of the household (years)</i>				
Average age of the head	42.78	42.06	43.44	42.12
Average education of the head	6.18	7.24	7.7	6.5
<i>Education of the household members (% of members)</i>				
Average education of the household members (years)	6	6.48	5.78	5.04
Up to primary education	18.78	17.98	17.2	25.17
Matriculate education	34.29	41.23	32.97	30.42
Higher education	19.18	17.11	17.57	12.24
<i>Ownership assets (% households in samples)</i>				
Tractor	22	36	54	40
Trolley	14	18	48	36
Tiller	8	6	8	8
Pump set	34	42	30	34
Motorcycle	34	48	76	72
Average farm size (ha)	2.34	3.83	5.85	4.74
<i>Farm class (% households in samples)</i>				
Small and marginal	68	46	32	44
Medium	14	24	22	24
Large	18	30	46	32

Table A.21 Disposal of products by participants

	Cauliflower		Tomato		Muskmelon		Tomato		Cauliflower		Tomato		Muskmelon		Tomato	
	Jharkhand	Himachal Pradesh	Himachal Pradesh	Haryana	Haryana	Haryana	Himachal Pradesh	Haryana	Jharkhand	Himachal Pradesh	Himachal Pradesh	Haryana	Haryana	Haryana	Haryana	Haryana
Home consumption	6.31	1.12		0	0	0		0	5.68	0.17		0	0	0	0	0
Marketed	93.7	98.9		100	100	100		100	94.3	99.8		100	100	100	100	100
Sold in channel	78.9	97.3		98.2	97.9	98.2		97.9	87.3	96.5		97.6	97.6	97.6	96.8	96.8
Sold elsewhere	18.3	0		0.7	0.7	0.7		0.7	8.27	0		0.8	0.8	0.8	2.5	2.5
Not sold	2.81	2.64		0	0	0		0	4.41	3.51		0	0	0	0	0
Sold	97.2	97.3		100	100	100		100	95.6	96.5		100	100	100	100	100

Notes: Home consumption and marketed are as percentages of production. Others are as percentages of total marketed amount

Table A.22 Farm practices for Jharkhand and Himachal

Attributes	Jharkhand	Himachal Pradesh	Jharkhand	Himachal Pradesh
	Cauliflower	Tomato	Cauliflower	Tomato
	EMC	EMC	TMC	TMC
Leased land (% land)	25.75	0	29.5	
Dry land farmers	71		56	
Irrigated from ground water (% farmers)	37.25		22	
Irrigated from surface water % farmers	11.5		3	
Irrigated % farmers	48.75		25	

Table A.23 Farm practices for Haryana

Particulars	Tomato		Muskmelon	
	TMC	EMC	TMC	EMC
Leased-in land (% operated land)	34.62	50.13	39.66	39.52
Irrigated (% operated land)	100	100	100	100
<i>Agriculture</i>				
Agriculture as main occupation	100	96	90	90
Main source of irrigation	Pump sets and electric tube wells			
Main crops	Paddy, wheat, tomato, cauliflower		Paddy, wheat, muskmelon	
Share of selected crops	13.7	1.67	15.26	9.49
Cropping intensity	2.2	2.3	2.1	2.3

Appendix 6: Emerging Channel Is Direct Marketing

Table A.24 Andhra Pradesh sample profile of brinjal and banana farmers

Attributes	Brinjal	Banana	Brinjal	Banana
	Emerging marketing channel		Traditional marketing channel	
<i>Social attributes (% of households in sample)</i>				
Hindu community	100	100	100	93
SC	0	0	0	20
OBC	64	60	46.67	20
Below poverty line (BPL) card	100	100	100	33.3
Living in kutcha house	20	24	0	0
Female headed	36	60	0	0
<i>Ownership of assets (% of households in sample)</i>				
Owning pump set	0	96	0	93.3
Owning harvester	28	20	100	0
Average farm size (ha)	1.22	1.24	1.94	2.14
<i>Farm class (% households in samples)</i>				
Small or marginal holding	80	80	53.3	50
Medium-sized holding	20	20	33.3	36
Large-sized holding	0	0	13.34	14
<i>Ownership of communication facilities (% of households in sample)</i>				
Owning motorcycle	16	12	0	13.33
Owning at least one mobile phone	100	100	0	0
Owning bicycle				
Owning four wheeler	0	0	0	13.33
<i>Education and age of head (% of households in sample)</i>				
Age of head between 25 and 50 years	100	72	100	100
Age of head between <50 years	0	20	0	0
Primary or less	92	64	53.33	33.33
Secondary education	0	36	46.67	66.67
Higher education	8	0	0	0
<i>Education of the household members (% of members in sample)</i>				
Primary or less	62.8	48.6	50	55.4
Secondary education	22.3	36.2	27.3	32.1
Higher education	14.9	15.2	22.7	12.5

Table A.25 Sample profile of orange farmers in Assam

Variables	Units	Emerging marketing channel	Traditional marketing channel
<i>Social</i>			
Hindu	% households	100	100
SC or ST	% households	0	0
Below poverty line	% households	22	32
Female headed	% households	8	10
Age of head (average)	Years	54	56
<i>Economic assets</i>			
Kutcha house	% households	62	15
Owning motorcycle	% households	30	28
Owning four wheeler	% households	12	10
Owning tractor	% households	4	4
Owning pump sets	% households	30	26
<i>Information and education</i>			
Education of head	Years	8	7
Members with higher education	% households	28.8	31
Owning mobile	% households	92	92
Owning computer	% households	10	6
<i>Farm size and use</i>			
Average farm size	Hectare	2.7	2
Small and marginal	% households	44	68
Medium	% households	36	20
Large	% households	20	12

Table A.26 Sample profile of kinnow farmers in Punjab

Variables	Units	Emerging marketing channel	Traditional marketing channel
<i>Social</i>			
Hindu	% households	70	71
SC or ST	% households	0	11
Below poverty line	% households	0	0
Female headed	% households	0	0
Age of head	Years	52.2	52.4
<i>Economic assets</i>			
Kutcha house	% households	0	0
Owning motorcycle	% households	100	100
Owning four wheeler	% households	60	54
Owning tractor	% households	70	94
Owning pump sets	% households	50	66
<i>Information and education</i>			
Education of head	Years	7.4	7.8
Members with higher education	% households	89	32
Owning mobile	% households	80	86
Owning computer	% households	40	3
<i>Farm size and use</i>			
Average farm size	Hectare	8.3	10
Small and marginal	% households	3.1	2.2
Medium	% households	31	25.6
Large	% households	66.8	71.3

Table A.27 Marketing costs: Andhra Pradesh

Measures	Units	Banana		Brinjal	
		Traditional marketing channels	Emerging marketing channels	Traditional marketing channels	Emerging marketing channels
Total marketing costs	Rs/quintal	108.59	49.19	257.74	43.28
Borne by farmers	% marketing cost	71.16	100.00	57.61	100.00
Borne by intermediaries	% marketing cost	28.84	0.00	42.39	0.00

Table A.28 Disposal of products by sample farmers in Andhra Pradesh and Assam

Amount	Unit	Assam					
		Orange		Andhra Pradesh		Brinjal	
		Emerging channel	Traditional channel	Emerging channel	Traditional channel	Emerging channel	Traditional channel
Total production	100 kg	78.61 (100)	75.03 (100)	5,594.62 (100)	3,706.29 (100)	587.63 (100)	435.83 (100)
Marketed in other channels	100 kg	18.88 (24.0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Home consumption	100 kg	1.04 (1.3)	1.07 (1.4)	2.77 (0.1)	3.82 (0.1)	2.46 (0.4)	6.14 (1.4)
Wastage on farm	100 kg	0.53 (0.7)	0.51 (0.7)	11.20 (0.2)	30.0 (0.8)	34.84 (5.9)	48.00 (11.0)
Marketed in specified channels	100 kg	58.16 (74.0)	73.45 (97.9)	5,580.85 (99.7)	3,672.46 (99.1)	550.33 (93.7)	381.69 (87.6)
Sold in specified channels	100 kg	56.01 (96.3)	73.45 (100)	5,567.11 (99.8)	3,634.73 (99)	506.72 (92.1)	320.68 (84.0)
Rejected or sold elsewhere	100 kg	2.15 (3.7)	0 (0)	13.74 (0.2)	37.73 (1.0)	43.61 (7.9)	61.01 (16.0)

Notes: Figures in *parentheses* are percentages. Percentages are in relation to total production in the *first five rows* and in relation to marketed in specified channel in the *last two rows*

Table A.29 Disposal of products by sample farmers in Andhra Pradesh and Assam

Amount	Unit	Andhra Pradesh					
		Punjab		Brinjal			
		Emerging channel	Traditional channel	Emerging channel	Traditional channel		
Total production	100 kg	6,992.2 (100)	30,576.0 (100)	5,594.62 (100)	3,706.29 (100)	587.63 (100)	435.83 (100)
Marketed in other channels	100 kg	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Home consumption	100 kg	28.1 (0.41)	116.3 (0.38)	2.77 (0.1)	3.82 (0.1)	2.46 (0.4)	6.14 (1.4)
Wastage on farm	100 kg	0.0 (0.0)	0 (0.0)	11.20 (0.2)	30.0 (0.8)	34.84 (5.9)	48.00 (11.0)
Marketed in specified channels	100 kg	6,964.1 (99.59)	30,459.0 (99.62)	5,580.85 (99.7)	3,672.46 (99.1)	550.33 (93.7)	381.69 (87.6)
Rejected and damaged	100 kg	14.9 (0.21)	24.7 (0.08)				
Sold in specified channels	100 kg	6,949.2 (100)	30,076.5 (98.82)	5,567.11 (99.8)	3,634.73 (99)	506.72 (92.1)	320.68 (84.0)
Rejected and sold elsewhere	100 kg	0 (0)	358.5 (1.18)	13.74 (0.2)	37.73 (1.0)	43.61 (7.9)	61.01 (16.0)

Notes: Figures in parentheses are percentages. Percentages are in relation to total production in the first five rows and in relation to marketed in specified channel in the last two rows

Table A.30 Farm practices of brinjal and banana farmers in Andhra Pradesh

Attributes	Brinjal	Banana	Brinjal	Banana
	Emerging marketing channel		Traditional marketing channel	
Large-sized holding (% of sample farms)	0	0	13.34	
Land owned (% operated land)	100	100	79.7	96.23
Irrigated (% operated land)	73	83	65	58
<i>Crops</i>				
Other horticulture crops	Mango, banana	Mango, vegetables		Vegetable, mango, cashew
Sources of irrigation	Ground water	Ground water	Vegetables	Ground water
Main crops	Vegetables	Vegetables, paddy, cashew		Paddy
Share of specified crop (% of cropped area)	16.82	31	12.13	14

Table A.31 Farm practices of orange farmers in Assam

Variables	Units	Emerging marketing channel	Traditional marketing channel
Own land	% land	98.5	98.2
Leased land	% land	1.5	1.8
Irrigated land	% land	100	100
Cropping intensity	Ratio	1.2	1.2
Share of orange	% cropped area	24	23
Other horticulture crops		Banana, lemon, acrenut	Banana, lemon, acrenut
Source of irrigation		Ground water	Ground water
Main crops		Kharif paddy, tea, mustard, potato	Kharif paddy, tea, potato

Table A.32 Farm practices of kinnow farmers in Punjab

Variables	Units	Emerging marketing channel	Traditional marketing channel
Own land	% land	100	93
Leased land	% land	0	7.0
Irrigated land	% land	100	100
Cropping intensity	Ratio	1.61	1.57
Share of kinnow	% cropped area	36.14	26.75
Other horticulture crops		Guava, malta	Guava, malta
Source of irrigation		Surface water	Surface water
Main crops		Wheat, Bt cotton kinnow	Wheat, Bt cotton kinnow

Appendix 7: Sample Details: Marketing Through New Traders

Table A.33 Sample profile of farmers in West Bengal

	Emerging marketing channel (arum)	Traditional marketing channel (mustard)
<i>Socio-economic attributes (% of sample households)</i>		
Hindu community	79	76
Muslim community	21	24
SC or ST by caste	0	0
Other backward	73	40
Below poverty line (BPL) card	56	19
Living in kutcha house	31	29
Female headed	8	7
<i>Farm class and agriculture (% of sample households)</i>		
Operating up to 1 ha	80	78
Operating up to 2 ha	96	95
Operating more than 4 ha	4	5
Owning land (% operated land)	98.9	99.2
Farmers with unirrigated/dry land	18.8	28.4
Irrigated area (% of total area)	82.2	71.6
Major source of irrigation	Ground water (82 %)	Ground water (72 %)
Area under specified crop (% cultivated area)	11.7	9.9
Crop area irrigated (% specified cultivated crop area)	81.9	72
Agriculture as main occupation	65.5	64
<i>Asset ownership (% farm households)</i>		
Owning pump set	15	63
Owning tractor/trolley	0	3
Average farm size (median in hectares)	0.66	0.8
<i>Ownership of communication facilities (% of sample households)</i>		
Owning motorcycle	5	5
Owning at least one mobile phone	55	48
Owning computer	0	0

(continued)

Table A.33 (continued)

	Emerging marketing channel (arum)	Traditional marketing channel (mustard)
Owning Internet	0	0
Owning four wheeler	0	0
<i>Head of household (years)</i>		
Average education	3.44	3.01
Average age of head	50	49
<i>Education of the household members (% members)</i>		
Primary or less	49	48
Secondary education	16.8	17.2
Higher education	5.5	5.9

Table A.34 Farming practices of producers in West Bengal

Crop	Arum	Mustard
	Emerging marketing channel	Traditional marketing channel
Average area (ha)	0.66	0.8
% farmers using chemical fertilizer	100	100
Use of chemical fertilizer ('00Kg/ha)	46.02	58.94
Farmers using organic fertilizer (%)	71.12	81.92
Farmers using irrigation (%)	82.2	71.9
% ground water	100	100

Notes

Hazard of Allowing Private Sector/Multinationals in Business

The risks of implementing the proposed reforms are cited as follows: (i) proposed conditionality makes the constitution of the market committees less democratic and easier for contract farmers to gain entry; (ii) local traders will be distanced from the private and special markets due to the requirement of making prescribed deposits to the committee besides the licence, and functionaries like coolies, hawkers, transporters, pushcart workers, small and medium financiers and small retailers will be pushed out of the business as multinational and other big companies gain access; (iii) giving multinational companies access to retail trade will jeopardize the employment of numerous street vendors as well as traders, hawkers, coolies and small farmers; (iv) while contract farming is meant to attract small farmers who are not in a position to invest in farming, in practice the contracts with big companies will hurt them in the longer run by making them dependent on external sources of food, compromising the ability of their land to produce food when the contract period is over and undermining their technical competency by replacing public extension with external prescriptions. Their poverty and food insecurity will further translate to greater migration to urban areas undermining these places and creating human crisis;

(v) the demand for raising unfamiliar and new crops and the high standards expected of the producers from contract farming may not be practicable; (vi) with the reduced role of the government, the farmers are at the mercy of the sponsor companies especially in times of troubles like that of lower-quality products or overproduction; (vii) the powerful companies can manipulate the quality standards required if they desire to reduce purchases; and (viii) the chances of farmer indebtedness increase as uncertainties due to production problems, possibility of contract violation from powerful sponsors and poor technical advice arise.

Table A.35 Marketing efficiency of cultivating arum and mustard in West Bengal

Measures	Unit	Mustard	Arum
		Traditional marketing channel	Emerging marketing channel
<i>Marketing costs and returns</i>			
Farmer's price	Rs/100 kg	2,876.28	548.09
Consumer/processor price	Rs/100 kg	3,439.22	1,079.9
Marketing costs	Rs/100 kg	103.5	93.45
Borne by farmers	% marketing cost	25.48	0
Borne by traders	% marketing cost	29.57	58.51
Borne by wholesaler	% marketing cost	44.95	23.42
Borne by retailer	% marketing cost	0	18.06
Marketing margins	Rs/100 kg	485.81	438.81
<i>Farm economics</i>			
Marketing cost share	% farmer cost	1.12	0
Marketing cost ratio	% farmer price	0.92	0
Net farmer price	Rs/100 kg	2,849.91	548.09
Productivity	100 kg/ha	14.34	242.04
Farmer returns from land	Rs 000/ha	7.61	77.1
Farmer net profit	Rs/100 kg	530.93	318.55
<i>Evolution of price</i>			
Net farmer price	Rs/100 kg	2,849.91	548.09
Wholesale price	Rs/100 kg	3,439	973.5
Retail price	Rs/100 kg	3,439	1,080.17
Price magnification farmer-retailer	Ratio	1.21	1.97
Price magnification farmer-trader		1.12	1.49
Price magnification trader-wholesaler	Ratio	1.21	1.78
Price magnification wholesaler-retailer	Ratio	—	1.11
Price spread	% net farmer price	20.68	97.03

Appendix 8: Sample Details: Marketing Through New Traders

Table A.36 Sample profile of mango farmers in Bihar

Attributes	Mango	
	Traditional marketing channel	Emerging marketing channel
<i>Inclusiveness of the market channels (% of households in sample)</i>		
Hindu community	100	100
Scheduled caste	6	2
Below poverty line (BPL) card	8	8
Living in kutch house	40	38
Female headed	8	6
<i>Ownership of assets (% of households in sample)</i>		
Owning pump sets	36	22
Average farm size (ha)	2.88	1.83
<i>Ownership of communication facilities (% of households in sample)</i>		
Owning motorcycle	20	34
Owning at least one mobile phone	60	100
Owning Internet	0	0
<i>Education of the household members</i>		
Higher education (%)	23	30
<i>Education and age of head</i>		
Average age (years)	50	45
Primary or less (%)	52	44
Secondary (%)	38	30
Higher education (%)	10	26
<i>Farm class (% operated land)</i>		
Operating small/marginal holding	66	92
Operating medium holding	24	18
Operating large holding	34	8

Source: Computed from survey data

Table A.37 Farming practices of sample farmers cultivating mango in Bihar

	Traditional marketing channel	Emerging marketing channel
Using pump sets (%)	44	54
Using sprinkler (%)	4	8
Using drip (%)	0	0
Using tractor (%)	52	76
Using bullock cart (%)	24	48
Owning storage (%)	16	22
Hiring storage (%)	10	8
Processing on farm (%)	20	18
Chemical fertilizer (Rs/ha)	1,120.50	1,135.00
Pesticides (Rs/ha)	545.25	512.00
Watch and guard (Rs/ha)	2,280	1,770
Hired labour (Rs/ha)	2,320	2,395
Agriculture as main occupation (%)	82	84
Owned land (%)	90	85
Irrigated land (%)	54	64
Main source of irrigation	Ground water	Ground water
Main crops	Paddy, mango, wheat	Paddy, mango, wheat

Source: Computed from survey data

Notes: The percentages are of operated area in cases of owned land and irrigated land and of sample households in other cases

Appendix 9

Table A.38 Nature of intermediation in emerging marketing channels in sample

State	Crop	Channel	Intermediary	Nature	Involvement
Andhra Pradesh	Banana	DM	None	Rythu Bazaar, direct to consumer	No private intermediary
Andhra Pradesh	Brijnjal	DM	None	Rythu Bazaar, direct to consumer	No private intermediary
Assam	Orange	DM	None	Farmers' group, Nonprofit, sales to processor	No private intermediary, but collective sales
Punjab	Kinnow	DM	Traders	Farmer evening market, sales to private traders	Private traders only
Himachal Pradesh	Tomato	RTL	Mother dairy	Nonprofit, no private intermediary	Nonprofit organized
Jharkhand	Cauliflower	RTL	Reliance	Single organized intermediary	Large corporate
Haryana	Muskmelon	RTL	Reliance	Single organized intermediary	Large corporate
Haryana	Tomato	RTL	Reliance	Single organized intermediary	Large corporate
Uttar Pradesh	Potato	CONTR	PepsiCo	Single organized intermediary	Large corporate
Uttar Pradesh	Aonla	CONTR	Satkar Foods	Single organized local intermediary	Local corporate
Assam	Potato	CONTR	Kishalaya Food	Single organized local intermediary but NGO intermediated	Local corporate
Punjab	Potato	CONTR	PepsiCo	Single organized local intermediary but public intermediation	Large corporate
Himachal Pradesh	Apple	CMI	Adani	Sales too private traders via single organized corporate intermediary	Large corporate with private traders
Madhya Pradesh	Soya bean	CMI	ITC	Sales to traders via e-portal of organized corporate intermediary	Large corporate with private traders
Maharashtra	Onion	CMI	DFPCL	Sales to traders via organized intermediary	Large corporate
Maharashtra	Pomegranate	CMI	DFPCL	Sales to traders via organized intermediary	Large corporate
Bihar	Mango	TRADER	Local	Sales to traders via local trader group	Private traders only
West Bengal	Arum	TRADER	Local	Sales to traders via local trader group	Private traders only

Table A.39 Gross marketing cost with respect to farmer's rupee and user's rupee (Rs)

		Channel			
		Emerging	Traditional	Emerging	Traditional
		Ratio to farmer rupee		Ratio to user rupee	
<i>Direct marketing</i>					
Andhra Pradesh	Banana	0.13	0.99	0.12	0.55
Andhra Pradesh	Brinjal	0.04	1.45	0.03	0.62
Assam	Orange	0.48	1.14	0.32	0.53
Punjab	Kinnow	0.82	1.20	0.45	0.54
<i>Corporate marketing intermediation</i>					
Maharashtra	Onion	1.31	1.26	0.57	0.56
Maharashtra	Pomegranate	0.39	1.15	0.28	0.53
Himachal	Apple	0.46	0.60	0.32	0.37
Madhya Pradesh	Soya bean	0.19	0.29	0.16	0.23
<i>Marketing to processors on contract</i>					
Uttar Pradesh	Potato	0.00	0.38	0.00	0.27
Uttar Pradesh	Aonla	0.00	0.32	0.00	0.22
Assam	Potato	0.27	0.42	0.21	0.29
Punjab	Potato	0.34	0.57	0.08	0.24
<i>Marketing to organized retailer</i>					
Himachal	Tomato	0.51	2.02	0.34	0.67
Jharkhand	Cauliflower	1.19	1.27	0.51	0.52
Haryana	Muskmelon	1.53	1.61	0.6	0.61
Haryana	Tomato	1.63	1.43	0.6	0.58
<i>Marketing by local traders</i>					
WB	Arum	0.97	0.21	0.49	0.17
Bihar	Mango	1.17	1.27	0.51	0.52

Table A.40 Gains made by farmers from the emerging channel (ratio to traditional channel)

		Farmer price	Marketing scale	Terminal price	Productivity	Profit	Returns from land
Andhra Pradesh	Banana	1.72	2.16	1.09	0.86	1.47	1.26
Andhra Pradesh	Brinjal	1.08	1.27	0.53	0.80	1.07	0.86
Assam	Orange	1.14	1.20	1.00	1.03	1.67	1.21
Bihar	Mango	1.02	1.33	1.26	1.04	1.30	1.38
Punjab	Kinnow	1.20	1.21	0.99	1.11	1.28	1.42
Himachal Pradesh	Tomato	1.60	1.39	0.95	0.91	3.50	3.16
Jharkhand	Cauliflower	1.07	1.09	1.02	0.99	1.16	1.18
Haryana	Muskmelon	1.10	1.18	1.06	1.11	1.21	1.35
Haryana	Tomato	1.18	1.10	1.31	1.04	1.38	1.43
Uttar Pradesh	Potato	1.20	1.90	1.00	0.99	1.60	1.58
Uttar Pradesh	Aonla	1.05	2.13	1.00	1.01	1.22	1.23
Assam	Potato	1.07	1.06	1.00	1.02	1.30	1.33
Punjab	Potato	1.49	1.04	1.00	0.95	3.99	3.77
Himachal Pradesh	Apple	0.79	0.88	0.73	1.65	0.73	1.20
Madhya Pradesh	Soyabean	1.04	1.64	0.95	1.12	1.11	1.21
Maharashtra	Onion	1.09	1.71	1.11	1.05	1.16	1.23
Maharashtra	Pomegranate	1.75	3.16	1.13	1.92	2.24	0.43

Note: West Bengal is excluded for lack of comparability

Source: Computed from survey data

Table A.41 Participation of deprived farming sections in emerging channels (ratio to traditional channel)

State	Crop	Smallholder				Backward classes				Not owning mobile phone				Not owning motorcycle				Not owning pump set			
		%				%				%				%				%			
Andhra Pradesh	Banana	1.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.63	0.57										
Andhra Pradesh	Brinjal	1.50	0.00	0.00	0.00	0.84				0.84											
Assam	Orange	0.65	1.00	0.97						0.97	0.95										
Punjab	Kinnow	1.41	0.75	1.43							1.47										
Himachal Pradesh	Tomato	0.82	0.90	0.96						0.96	1.00										
Jharkhand	Cauliflower	0.67	0.29	0.45						0.95	0.96										
Haryana	Muskmelon	1.38	1.47	2.25						1.17	0.94										
Haryana	Tomato	0.68	0.71	0.50						0.79	0.88										
Uttar Pradesh	Potato	1.39	0.29	0.44						0.80	1.25										
Uttar Pradesh	Aonla	0.78	2.76	0.12						1.33	1.08										
Assam	Potato	0.88	1.00	1.14						1.15	1.50										
Punjab	Potato	0.20	1.00	0.00						0.00											
Himachal Pradesh	Apple	1.02	6.00	0.00						1.00	1.00										
Madhya Pradesh	Soya bean	0.18	0.71	0.42						0.60	0.47										
Maharashtra	Onion	0.22	0.00	0.97						0.00											
Maharashtra	Pomegranate	1.37	0.00	0.00						0.00											
Bihar	Mango	1.39	0.33	0.00						0.83	1.22										
West Bengal	Arum	1.01	0.88	0.87						1.00	2.30										
<i>Averages of channels</i>																					
Direct marketing		1.31	0.38	0.61						1.15	1.00										
Retail		0.88	0.84	1.07						0.97	0.94										
Contract		0.81	1.26	0.43						0.82	1.28										
Corporate intermediation		0.70	1.68	0.35						0.40	0.74										
Trader-based		1.20	0.60	0.43						0.91	1.76										

Table A.42 Other benefit derived from traders in traditional channels

States	Crops	Farmers reporting advantages (%)				
		Received loans	Received input advances	Payment recovery problem	Assured sales	Received price information
Assam	Orange	NR	74	30	NR	40
Punjab	Kinnow	NR	NR	8.6	28.7	31.4
Maharashtra	Onion	5	NR	22.9	19.5	17.1
Maharashtra	Pomegranate	NR	5.7	22.9	18.4	28.6
Himachal	Apple	46	NR	100	NR	100
Uttar Pradesh	Potato	NR	NR	8.6	NR	NR
Uttar Pradesh	Aonla	NR	NR	7	NR	NR
Assam	Potato	NR	NR	NR	NR	72
Punjab	Potato	28.6	NR	37.1	51.4	74.3
Himachal	Tomato	NR	100	14	NR	28
Jharkhand	Cauliflower	NR	NR	88	NR	28
Haryana	Muskmelon	NR	NR	8	6.8	58
Haryana	Tomato	NR	NR	2	8.3	58

NR not reporting

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