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Impact of Emerging Marketing Channels in Agricultural Marketing-Benefit to Producer-Seller and Marketing Costs and Margins of Agricultural Commodities



Nilabja Ghosh

**Institute of Economic Growth
Delhi-110007**



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.

This study was desired by the Ministry of Agriculture, Government of India at the behest of the Agricultural Marketing Division under the same Ministry. The Institute of Economic Growth (IEG) was requested to be the coordinator. A workshop of the participants was held in IEG on the 11th of February, 2010 where preliminary field level impressions were shared by the participating Agro-economic Research Centres (AERC).

The author thanks the Director of IEG Prof. Manoj Panda for providing the support necessary for me to complete the study. All necessary facilities were provided with urgency by the computer unit headed by Mr. Vinod Tyagi and Mr Yogesh of the library. Dr. P. Shinoj, Scientist in National Centre for Agricultural Economics and Policy Research, invited as an expert in the Workshop mentioned above is acknowledged for his valuable advice on the methodology. Shri. R C Ray and Dr. B S Bhandari of the Ministry are also acknowledged for their overall support. The suggestion of taking account of transactions cost and market intelligence came from Mr. Lallan Rai of the Marketing Division. Comments received through peer review at ISEC and suggestions from officials in the Ministry of Agriculture are gratefully acknowledged. In particular, suggestions from the Secretary A&C Shri Ashish Bahuguna and Principal Advisor Smt. S. Bhavani were useful in revising the draft report.

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It is worth mentioning that careful inspection with validation of the primary data was an essential component of the integration work. We have carried out consistency checks within the primary information supplied keeping in context information available from secondary sources. Reassessment of results by the coordinator was necessary and in some cases recalculation was also required to ensure consistency with the uniform framework of the overall study. The Centres supported me with primary field level information and clarifications as required.

I will fail in my duty if I do not recall and acknowledge the cooperation of Dr. Ananda Vadivelu who was my partner in this study at the initial stages and contributed actively in drawing out the design of the sample, in correspondences with Centres and in making the schedules. I thank Mr. M Rajeshwor for assisting me with this project at every stage despite his preoccupation with another important project for the Ministry. I also thank Ms. Shipra, Ms. Shweta and Ms. Supriya Sharma for helping me with the tables and with the manuscripts at different times.

Nilabja Ghosh

Agricultural Economics Research Unit,
Institute of Economic Growth
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Contents

Sl. No.	Item	Page No.
	Preface	i
	Highlights	a
1.	Introduction	1
2.	Evolution and re-constitution of Markets	19
3.	Objectives, Data and Methodology	45
4.	Contemporary reforms and the Transitions in Sample states	77
5.	Impact of Emerging Market Channels	111
6.	Reconsidering Agricultural marketing in India	135
	Bibliography	157
	Appendix : Appendix 2.0 Appendix tables of chapter 2	163
	Appendix 3.0 Appendix tables of chapter 3	165
	Appendix 4.1. Socio-economic conditions and Agriculture in Sample States	167
	Appendix 4.2 Crops covered under Market channel studies	187
	Appendix 4.3 Markets in Emerging and Traditional Channels	203
	Appendix 5.0 Appendix tables of chapter 5	217
	Action Taken Report	A

Highlights

- In the wake of the circulation of suggested new marketing rules by the Central government, certain states have shown eagerness and progress, others have responded partially while a few states have failed to legislate changes at all. The same set of reforms may be aggressively promoted in a few states but are shunned in others reflecting the political reality of the nation.
- Most states, regardless of legislated changes in marketing rules, are witnessing dynamics arising from people's urge to cut down on marketing costs and reduce the farmers' helpless lack of options in the rural markets. Even under the pre-existing legislations, significant changes in rules are possible provided the state governments have the political will.
- A large variety of marketing channels are emerging in different parts of the country ranging from direct sales by producers to users to contracts with commercially organized companies and to innovative channels comprising of only individual traders. Thus an organized entity is not always present in the channel, and sometimes it co-exists with other traders.
- The variety of channels remarkable, the emerging channel is not fully distinct from the traditional channel, often coalescing at some point in the chain. Although traders may or may not participate in the emerging channel, this channel is generally shorter than the prevailing traditional channel in the area. Similarly, producers may or may not be relieved of the burden of marketing responsibility and costs.

Implications

- The gain in efficiency from the switch over to an emerging channel is hard to deny. Moreover the new channels are associated with increases in productivity, profit and returns from farming.
- The savings on marketing cost (including margins) for every rupee earned by the producer over the corresponding traditional channel are highest at 83 paise in the Direct marketing but get reduced as the channel elongates and unorganized traders join in.
- Emerging channels provide added options to farmers and sometimes they even help to revitalize and improve the traditional channels. Many farmers diversify their disposal among multiple channels.
- Rejected products generally find outlet outside the channel.

Political economy matters

- Despite the advantages, distributional implications are important both for the acceptability and the sustainability of the channels.
- With substantial savings in marketing cost in monetary terms, the advent of new systems may displace the traders who were engaged in the transfer of the agricultural products from plow to plate. Channelising this displaced manpower to productive employment will be a challenge. Survival of alternate channels will be under threat unless the State plays a role.

- While farmers gain by fetching higher prices and making larger profits, it is sensed that such gains would reach an exclusive section. More disturbingly with the privileged group of farmers seem to be biased against the resource poor. The emerging channels can exacerbate rural inequity.
- New channels operated by organized companies tend to draw participation of the larger farmers. So far as farm size has a regional dimension, they may not be relevant or suitable for all regions. This may explain why they are politically rejected in these states.
- Indeed there is a possibility of enhancing regional disparity.

Place of traditional channels and the uncertain pricing territory

- 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. It is important that the traditional market too rises in standards to face competition and exist alongside the emerging markets.
- Wastage is marginally lower in emerging channels but both channels are affected by shortages in infrastructure and faulty harvest practices.
- Storage facility is often a prerequisite for participation in emerging channel.
- Pricing mechanism as understood from neo-classical economic theories and sharpened by organized auctions will be increasingly under onslaught especially when contracts made under uncertainty and specific to differential varieties of products replace the open market bargaining. *A need for a radical rethinking on public market statistics is an imperative.*

- Many of the emerging markets too encounter severe difficulty of pricing and often fall back of the traditional markets to collect information of price behaviour. In its absence the price may increasingly reflect the power relations.
- Under these circumstances the survival of the traditional market and the development of informed and scientifically run derivative market are both critical because both are based on fair auctions leading to objective and transparent price discovery.
- The usefulness and character of public intelligence and its new directions in the emerging scenario also deserve to be revisited.

The Final word

- Plurality of channels is important for the efficient performance of the markets. In particular, the survival of the traditional regulated channels will take care of products unsold in specific channels albeit at lower prices (provided there also exist consumers who are willing to buy cheaper products), to meet demand for products of varied quality and prices in the market, to conform with state specific situations and to cross-inform price intelligence among channels. They need to be strengthened to face competition, provide added options to producers, determine and disseminate fair prices and reduce product wastage due to rejection in the other channel

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 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. 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. 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. 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 losers could possibly be sections of Indian farmers and the unorganized milieu of intermediaries trading in food items makes the implementation difficult. The replacement of the existing structure by an unknown and evolving one therefore conjures misgivings. Experiences of other countries can hardly be deemed adequate for suggesting India the way because assessments are not easy not only on account of the difficulty of comparing across product varieties, climates and political regimes. Besides, lack of public information is a hallmark of some of the new private sector based systems and instances of both success and failure of reforms are common in different countries.

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 small holding 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 gained 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 socio-political 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.

1.2. Evolution of Agricultural Markets: No end insight

Markets, celebrated in folklores, ballads and history of societies, have been an integral institution in human culture and development. Marketing has today developed into an organized subject matter in the broader discipline of managerial sciences. Although 'marketing' essentially involves an exchange that is intended to address specific human needs, viewed on a broader perspective, marketing covers ideas, people and places. 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 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 and William, 1983).

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 sub-markets 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.

The unresolved middleman

The middlemen in the marketing chain are often the most maligned class of people world wide, blamed for exploiting and even cheating the producers and claiming a large chunk of the profit generated in the transaction. In reality, the middlemen have better knowledge of the market than the producers do and 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. 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 where the organized sector hesitates to enter and are willing to operate in an uncertain environment. 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.

It is however often agreed that the middlemen 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 the space between the producers or consumers becomes congested and increasing number of middlemen join the chain whether necessary or not and add to the margins. Moreover, they often collude 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. 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.

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.

Vertical Integration

Integration shows the relationship among the firms in a market¹. 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

¹ Vertical integration ([wikipedia.org/wiki/Vertical_integration](https://en.wikipedia.org/wiki/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).

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 and diversification through new units 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.

1.3. 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 geo-political 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 macro-economic balances. Macro-economic 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 21st 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.

Apprehensions: real or misplaced?

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 globalised market the large buyer operates across the country and often even across different countries with greater choice available to them by buying supplies from elsewhere they can turn the system against the economic interest of the local farmer who is constrained by local geographical and agronomic conditions. Indeed the worldwide, large food chains are probably as much maligned as the wholesalers and commission agents. Exploitation, high margins, 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 have 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, labeling, 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 re-intermediation (as by NGO) may help to make this happen.

Need for a Change 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 who operate small holdings. 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 post-harvest losses could be as high as 30% for both fruit 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 Brazil². 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, 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.

² These figures are unconfirmed by us.

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; 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 multi-party 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'.

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 2012-13). At least 50% of the total FDI should be invested in 'backend 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.

Organizations evolved spontaneously from local agents as traders, producers, 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 (for example, 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 the critics of private sector based reforms. Producer Company is another extension of the idea of cooperative that brings it closer to legal companies⁴.

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, multi-partite or intermediary while middleman are also involved and the models that is actually implemented may be suitably chosen and engineered⁵. The thrust of a policy requires to

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, 2013).

be in encouraging the existent systems and promoting new ones to evolve and develop in directions dictated by the needs of the market.

1.4. Organization of report

The report is organized in the following way. Chapter 2 gives a review of the literature that has grown up on the subject of reforming agricultural markets, discussing both the theoretical and empirical insights developed. In Chapter 3 we develop the conceptual framework that guides us in the analysis along with the focus, approach, data and methodology followed. We review the transitions taking place in agricultural marketing in the sample states through legislation and other pathways in Chapter 4. Chapter 5 analyses and summarizes the results obtained from field studies conducted in different states to assess the possible impacts expected of the reforms. Chapter 6 concludes the report.

2. Evolution and re-constitution 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 been largely held in check by apprehensions surrounding its implications for the domestic economies. Laissez-Faire, the 'Invisible hand' and the Ricardian concepts of a free market are cherished but largely notional economic ideas.

On the contrary, the imperfections of real life markets and the critical role of the State or the community is amply admitted (Claude, 1989), reverberating Adam Smith's (Wealth of Nations) emphasis on 'public institutions' and Wicksell's esteem for 'consultation' between the 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 policy makers in different ways. Oversimplification of complex institutions, vagueness of definitions, differential behavioural responses, heterogeneous spatial expanses and the sheer dynamics of the issues are common

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'.

weaknesses, compounded by intangible factors like transaction costs, unequal market power, subjective human expectations and perceptions, This chapter reviews the literature to provide a background to the subject of marketing agro-products.

2.2 Markets and Marketing

The definition of market as an 'operationalised atomistic realm of impersonal economic exchange of homogeneous goods' (Harriss-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, text book 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 objectivisation. 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 holds out a new transition process for the future of marketing.

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 process. 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 macro-economic 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 process² 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 like the merchandiser, the commission agent, the wholesale traders, the Auctioneers and the retailer (See Notes).

² An advertisement by a multi-national 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.

Evolution of the marketing channel and persistence of dualism in traditional economies

Till the 1960s local food markets did not arouse research interest in the way that international trading did although a much larger volume and variety of goods were handled in internal trade within Africa, Asia and Latin America. That the market place 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 (Yang, 1944, Mc Bryde, 1947, Berry, 1967)³.

The market place 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, open, free and rational (Tax, 1953) akin to perfect competition. 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 (Bromely, 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

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*.

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.

The evolution of markets at central locations and modeling of the evolution interested many economists and sociologists, location⁴ of market places being an important factor for understanding markets. In urban centers 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. Traveling 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 out-compete even the simple stalls in the market place. 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

⁴ Periodicity also attracted interest in literature. Early literature described daily markets, periodic markets and special markets (annual fair).

creating a dualistic set-up with the co-existence 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 small holdings 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 on methodologies and coverage (Jaffe and Yi, 2007) but an inverted U-shaped relation between channel length and development seems plausible.

Rise of marketing Policy and Failings

Marketing of agricultural products gradually became an important component of public policy in a developing economy due to food security imperatives, poverty of the peasant-seller and as a creator of the small businessman and an entrepreneur. Underdevelopment, attributed to the 'inability to organize economic efforts and energies, to bring together resources, wants, and capacities' for creative, self-generating organic growth' (Drucker, 1958) was linked to the shortfall in marketing ability.

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. State regulations binding on farmers, traders and distribution outlets and the formation of a 'Board' or a 'Corporation' under State control, did not seek directly to change food prices in any particular direction. However, a parallel or enmeshed price policy with the overt aim of 'administering' prices (for example 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 through the new institutions and created public sector employment deemed more secure in tenure and earnings in the process.

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 farmers prices depressed and depriving farmers of 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).

2.3. Stepping on to Reforms

The reforms in agricultural market launched in recent decades are aimed to remove State imposed restrictions, curb State power in the market, 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 (Harriss-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, not only manifest in rural poverty and inequality but also in the sectoral terms of trade and investment in industry (Mitra, 1975), the persistence or the easing out of small scale farming in agriculture and even in socio-political interactions of people when market places 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 of 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 (Hariss-White, 1996) and the presence of idiosyncratic costs associated with transactions makes assessment even more complex. Some major aspects that tie reforms with market structure in a contextual perspective are discussed in the following sub-sections. 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).

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 contexts. Marketing is not just 'one layer of transaction between producer and consumer', rather it is 'a system of transaction and transfers 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 money lending and sharecropping arrangements.

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

The linkages among markets and multi-market participation of agents (the well known landlord-money lender and trader-money lender 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. The 'command' economic legislations (such as banning and institutionalizing money-lending, 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 urban and industrial classes decide investment that flows into industry.

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

⁶ Economic 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 neo-classical economics conflicted with reality based evidences, the key role played by institutions in explaining economic

significance of transaction costs (TC) involved in the organization of firms and 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 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 co-ordination are usually high and agents operate under bounded rationality. Few markets are free from information asymmetries. Economic inequality, opportunistic behavior, 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 (Sanghera, 1992).

Nevertheless empirical studies attempted to understand the influence of TC on the supply response and marketing behaviour (Omamo, 1998, Goetz, 1992). A survey of Potato growers in Peru showed that small holders 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 seller. Although these findings and intuitive understanding suggest a strong

behaviours gained recognition, paving the way to a larger framework titled New Institutional Economies. This also shifted focus in microeconomics to transactions costs

implicit relation between TC and agricultural marketing, till date, empirical studies on TC have been scarce.

Explaining Channel lengths

The effect of development on channel lengths through the modeling of market evolution (see Sharma and Dominguez, 1992 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, historic and political factors impinge on the evolution of channels. Transaction costs 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 seek 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.

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

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 consumer (Mghell and Jones, 1963). While coercive inter-locking of rural open markets received attention in 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 neo-classical 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 transpire 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, 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 can not 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 USA and Canada. Genetically modified corn, soyabean 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 neo-classical framework is increasingly challenged by vertical integration of markets.

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 neo-classical 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 a 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.

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 policy making 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 sees this as a prescription for food insecurity. Critics of free trade argue against this approach (Anderson and strut, 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 crops that are suited for semi-arid conditions such as cash crop 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, Negassaa 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 post-harvest 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 et al, 2013)

2.4. Market complexities

Although the free market as a construct of neo-classical 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 remain multi-faceted 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 straight forward. 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.

2.5. Experiences from other countries

India is a late comer in the scene although reforms in the economy at large commenced more than two decades ago. Many countries around the world bore traditional systems based on either State monopolies or chains of middlemen operating under State regulations like India. They launched reforms in the 1980s and 1990s either as a natural process but more commonly as a conditionality of aid taken from international agencies. Compulsions arising from domestic fiscal imbalances and food insecurity are also

reasons for reforms or for the loans that preceded reforms. While in many erstwhile and currently prevailing command economies the motivation to reform the market came purely from the urgent need for national food security and urban food supply, developing countries especially in Africa were motivated by the exigencies of loans, fiscal imbalances and severe dependence on foreign food aid. Democratisation and market liberalization are often closely associated in countries under military and authoritarian rule but the review of experiences do not suggest that market reforms are exclusive to democracies only.

Experiences of reforms from different countries fail to generate a uniform and conclusive picture (See Appendix 2). Success has been limited in the developing countries of Africa and inconclusive at best in the former Soviet and east European countries that opened up in the 1980s and 1990s. Other communist or command economies like Cuba, China and Myanmar continue to open up agricultural markets to private forces haltingly and in a phased and calculated manner and the consequences are yet to be sensed clearly. Even a comparison between two developed economies Canada which has greater State control and USA where corporate private entities have far more space does not show firm indications that State control leads to price distortion and that producers benefit from the integrated supply chains evenly. Rather the experiences suggest that administration of the private controlled system can be a daunting task and agro-ecology and human enterprise may be under assault. Implications for transparency, market intelligence and State intervention in information dissemination and extension need far more consideration than they do when contract based transactions grow in number.

2.6. Why reforms in agricultural marketing are not easy decisions

Although the Indian economy launched its reforms agenda two decades ago and initiated market orientation in agriculture too shortly after that (especially in the wake if

its joining the WTO agreement), reforms in marketing have not only been slow but followed an extremely bumpy path. The major benefits expected from making agricultural markets flexible are many:

Positive effect on Farmer's income and rural development

Higher net producer prices and the improved technology accessed by producers will lead to rising incomes of farmers that will have multiplier effects on rural non-farm incomes. Other facilities like banking, education, health and insurance facilities will expectedly follow the generation of higher farm incomes. The entry of trading firms is likely to accelerate the development of infrastructure including roads, telecommunication and computerization and the entire approach can mean the end of the urban bias, said to be ingrained in most development programmes.

Productivity and technology

The correction of price distortions and institutional innovations together with the quality standards imposed by buying companies will make technology, know-how and improved inputs attractive, available and accessible to producers. In contract farming the technology, inputs and product specification are provided directly by the buyer in advance as a precondition for purchase.

Clouding the optimism over reforms are several serious misgivings and political economy implications eminently visible in the debate on reforms in contemporary India. A key criticism of the marketing changes is that they cater only to a small section of urban milieu who benefits 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, it is feared, will end up being the losers.

Employment of traders

In the traditional supply chains, numerous traders operate single-handedly with limited ambits of specialization in an unorganized manner. Vertical integration, a cornerstone of the emerging channels, essentially effect shortening of market chains often replacing a large number of trading intermediaries by a single organized and specialized entity or a conglomeration of entities that combines multiple functions with modern practices. The spectre of unemployment of numerous trading agents is a leading obstacle to the type of reforms that is being pursued.

Imposed competition on Indian Agriculture

The new agents in the chain would be powerful and many of them being multinational corporate bodies are also likely to buy from the cheapest sources, even outside the country, depressing producer prices. Corruption and bribes in order to get a foothold on foreign grounds are not unknown among them though actively discouraged in today's international market while the damage inflicted on local entrepreneurs and even the small farmers could be irreversible (Swamy, 2012).

Exploitation of farmers

Born out of historical evidences any diminution of public involvement and relaxation of regulation raise the apprehension that the more commanding status of today's buyers could drive rural exploitation.

Inequality and exit of small farmers

High quality of the produce, a demand in the super market and mall based new marketing regime, 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. More over, due to the huge transaction costs involved in procuring diminutive lots from small farmer, large buyers would tend to prefer larger producers. Greater vulnerability to unfair contracts and contract violation on part of the legally stronger buyers can further enhance the inequality among the rural farm classes and at the extreme, the exit of the small and poor farmers who are unable to compete in the emerging market ca be the result.

Agro-ecological concerns

Ecologists around the world are concerned about the degradation of land and other adverse effects on environment which will result from the intense search for short term profit from land. Excessive use of chemicals and soil exhaustion are inevitable as farmers shift to market procured inputs even though productivity increases in the short run.

Moreover, given the recipe driven and menu based cultivation practices that replace the age-old judgment based holistic method of farm management, producers are likely to be reduced to mechanical assembly line entities from intelligent decision making entrepreneurs and knowledge centers. With dictates coming from processing and retailing companies, the interactive mode of current public extension will decline. Dictates on cropping pattern may diminish the producer's traditional capability of farming foodgrain, compromising their longer term food security.

Price determination

The neo-classical understanding of price determination will be under challenge as open auctions, simultaneous bargaining and officiated negotiations with sealed tenders get replaced by closed-door mutual bargaining, some times in advance under contract. A shortage and a growing irrelevance of intelligence and the demise of transparency can be a serious challenge to the dealing Ministries and the judicial system

Adjudication

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, 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.

Notes

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, 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, the Retailers directly conducting sale of goods or services to the ultimate consumers for personal and non-business 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.

3. 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 in not only the emergence and popularity of new marketing channels but a visible reduction in the lengths of the chains leading to price advantages being delivered to farmers and consumers. We also anticipate that the emerging channels to be more effective in reducing post harvest 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 eleven states. The information gained from analysis of the data is assembled in this report.

¹ The 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 country wide assessment by the Ministry of Agriculture, Government of India.

3.2. 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.

The invisibility of unproductive trading functions

It has long been recognized that diversion of social or the 'merchant' capital (Harriss-White, 1996) to 'unproductive' but 'necessary' functions of buying and selling commodities (Marx, 1972) 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 pre-harvest 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, was 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. This flow of knowledge through this medium facilitates the determination of prices at the producers 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), distribution in retail (vendor in shops or with push-carts) 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 questioned. Although the livelihood concerns of trader are a serious issue facing market liberalization, this possibility suggests a lesson that more productive avenues of channeling manpower in the Indian economy should be explored.

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 chapter 3 Section 3.2). 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 adopting 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 to tolerate rejections that are expected in these channels.

On the other hand, small farm households are increasingly drawn towards non-farm ways of earning including participation in public works programmes as provided by the Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) 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 total 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.

Efficiency, Productivity and Sustainability

The foregoing discourses suggested that new channels catalyzed 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 cross-roads. 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.

3.3. 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 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. 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.

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 nation wide study.

The AERC Assam (Kakaty et. al., 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 'non standard' 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 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 channel would reduce the number of middlemen and eliminate them in the extreme case (direct farmer-consumer marketing) but at the cost of efficiency gains (see Chapter 2, section 2.2) 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. Contracts for price determination are not entirely novel and pre-harvest 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 pre-harvest 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.

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 pre-selecting 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.

Non-cereal food items like fruits, vegetables and non-traditional 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 on going 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.

3.4. 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 A3.2 in the appendix. The distribution of each sample size into three different size classes is given in Table A3.1.

3.5. 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 participants². In West Bengal no sample was drawn from the traditional channel in respect 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

² In 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.

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 2009-10.

Along with the farmer survey, information on prices, margins and marketing costs were 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 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 eleven 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 Organised retailers (SOR)- Commodities procured directly by owners of organised retail stores (chains) who in the 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 3.1 and 3.2 for two separate groups of states namely those who amended the APMC Act and those who did not.

Table 3.1: 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	Soyabean	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 (Para-statal)	-	Kishalaya Snack Products via an NGO	Reliance Fresh	Pepsi Co.

Notes: 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. P in bracket stands for partial amendment.

Table 3.2: 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

Notes: 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.

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 Madhya Pradesh no horticultural

crop could be identified in the emerging channels and the crop soyabean, another crop of emerging significance was chosen for study. So they study only one crop i.e., Soyabean, which is an important oilseed in today's context. Sehore district is the area of study and much celebrated ITC-e-Choupal is the emerging channel studied. The limitation compelled them to confine the study to Soyabean 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 besides the farm-size sensitivity of certain channels. In certain cases such as 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 A3.1). 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 A3.1)

Problems of sample designing

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 pre-harvest 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.

Delineating and tracing the channel length

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 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 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 this study 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 inter-channel 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 and channels that accommodate a number of traders are categorized as the largest (this includes direct sales to downstream traders). In between the extremes, there are two cases, one with only a single organized intermediary and a subsequently longer one where the organized intermediary operate with the number of trader.

3.6. 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 provided by the field surveys on the attributes. 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.

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.

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 is difficult to capture quantitatively.

The Shepherd Formula discussed later 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 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. The theoretic assumptions behind commonly used measures are till now largely unexamined. 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 (Harriss-White, 1996). Advances in measurement has also 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 . The evaluation of performance using econometrics based common methods has been ‘reduced to’ using only prices for analysis and ‘integration’ to proxy for efficiency and competition. Scant attention is paid to the conventional perception on market performance as the character of adjustment of sellers of output to effective demand. The nested nature of Agro markets combined with the vertical integration in channels adds to the difficulties of measurement and undermines its meaningfulness.

The relation between the production and the marketing cost is conventionally believed to provide an important clue to market efficiency although this is equally likely to miss out pertinent and often finer points³. 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. The emergence of new marketing channels that provide services far different in quantity and quality from the traditional marketing channels, makes this measurement even more complex.

³ For 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, surfacing of link roads, promotion of trucking industries and extension of grading and ware-housing facilities merit consideration as components of efficiency gain rather than a complete over hauling of the system.

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 (Kohl and Uhl, 1980 , Clark, 1968). A simple measure under this conceptualisation 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 to necessary services (see 3.2.). 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 (Acharya, 2004), which takes into account both marketing costs and margins per unit of product marketed and the farmer and consumer prices to compare channels (equation 1).

$$MME = FP/(MC + MM) \dots\dots\dots (1)$$

Where **FP** = Price received by farmers, **MC** = Total marketing cost in the channel per unit of output and **MM** = Net marketing margins per unit of output.

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 system is to minimize or eliminate unnecessary costs. As we already discussed at length in 4.2, 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 equation (2) as follows

$$MME = (UP / (MC + MM)) - 1 \dots\dots\dots (2)$$

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 under-emphasized. When part of the denominator i.e., the marketing costs and margins can be potentially reduced through better practices, such a passing on of farmers 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 over-looks 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.

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) where 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)

$NAFP = AFP - FMCOST..... (3)$

FMCOST= Farmer Marketing Cost (Rs/'00Kg)

$AFP = (PCH * QSOLDCH) + (PELS * QSOLDELS) / QMARKCH..... (4)$

Where,

PCH = Price fetched in specified channel (Rs/'00Kg)

PELS = Price fetched elsewhere for rejected product (Rs/'00Kg)

QSOLCH = 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

$QMARKCH = QSOLDCH + QSOLDELS + QUSOLD + QWASTE \dots\dots(5)$

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 channel forced by rejection, remain unsold or was 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.

$MSCALE = (PCH * QMARKCH) \dots\dots\dots (6)$

$PMAG = (PTERM / NAFP) \dots\dots\dots (7)$

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 NAPFP 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 is then standardized by the NAPFP to obtain an estimate of the RGMCF (equations 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 unproductive element 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..

$$GMC = FMCOST + \sum_i IMCOST + \sum_i IMM \dots\dots\dots (8)$$

$$RGMCF = (GMC / NAPFP) \dots\dots\dots (9)$$

$$RGMCU = (GMC / PTERM) \dots\dots\dots (10)$$

Where, *IMCOST* and *IMM* are the marketing cost incurred and the margin reaped by an intermediary at a link (i).

$$SMF = RGMCF_E - RGMF_T \dots\dots\dots (11)$$

$$SMU = RGMCU_E - RGMCU_T \dots\dots\dots (12)$$

$$RSMF = SMF / FGMF_T * 100 \dots\dots\dots (13)$$

$$RSMU = SMU / RGMU_T * 100 \dots\dots\dots (14)$$

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

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 equations 11 and 12. Similarly taking consumer's rupee as the reference the savings may be analogously measured as SMU and RSMU (equations 13 and 14).

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 stake holders, interactions with functionaries and on-site exploration to capture the latent transactions cost involved in the channels and the complications of the systems.

The transaction cost aspects is 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 producers 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.

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 negotiates 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 learnt from the exercise give an idea, though unquantified, of the transaction cost facing the farmers.

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 hectare of land. The size classes in this study are however specified in a different way and more in consistency with the actually observed situation on the field than with official specification⁴ as follows:

- 1) Small= cultivating up to 2 hectares,
- 2) Medium= cultivating 2-4 hectares
- 3) Large= cultivating more than 4 hectares.

⁴ Official categorization of farm size classes as follow , Marginal – Cultivating up to 1 hectare, small-cultivating 1-2 hectares, medium cultivating 2-10 hectares and Large cultivation over 10 hectares.

As discussed in section 3.2 the farm size is only an incomplete indicator of the class dimension of the producer especially in the current context when non-farm 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 religions in most cases, also Sikhs in two states Punjab and Haryana). The total share of all the above marginalized sections are 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 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 of latter vehicles (cars, trucks, simple trawlers, tractor can be varied) are difficult to qualify.

© *Communication disadvantages*: Communication in terms of information flow is facilitated by the use of mobile phones and the lack of one is treated as a disadvantage. Possession of a mobile phone vastly improves linkage with potential buyer's access to market information. It also helps to over come 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 basic equipment found to be relevant in all the cases considered, important in all the cases survey which is pump-set.

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.

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.

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. This is expressed as *RTNLAND* (equation 15) where,

RTNLAND = Returns from land (RS '00000/hectare)

$$RTNLAND = (NAFP-FPCOST) * FYLD \quad \dots\dots\dots (15)$$

Where

FPCOST = Farmer production cost (Rs/'00kg)

FYLD = Farm yield of crop ('00Kg/hectare)

Difficulties and Limitations

That markets for agricultural goods are complex if viewed as institutions, reforms are only recent initiatives and the measures that the literature provides on measuring market performances are not only inadequate but are 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 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.

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 linked with methodology and coverage was adhered to, information both as quantitative and qualitative data and the insights tend to differ among the regional submissions. To do justice, this study integrates much of the information available but cannot 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.

4. 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 4.1 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 market institutions dealt with can be found in Appendix 4.

Table 4.1: 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	

4.2. Transitions in Andhra Pradesh

Regulated marketing

Though the state regulated markets moved in tandem with the country-wide policy since early the 19th century, the small farmers continued to depend on traders 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 Section of 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.

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. Lack of access to institutional credit further intensifies the dependence of a larger majority of small farmers on commission agents who are also lenders.

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.

Co-operative 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 cooperatives structure comprising of 6000 primary marketing societies of which 3500 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 Derivative 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. The Governor of Andhra Pradesh promulgated the Andhra Pradesh marketing (APM) Amendments ordinance (No. 4, 2005 and No. 11, 2005). Under the Act any person who desires to establish a private market should make an application for license. 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.

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 sub-sector and gives support to the contract growers on priority basis. For protecting the interest of both 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 that created a popular drink called 'Maaza'.

Box No. 4.1

Select successful Projects in Andhra Pradesh

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

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

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

M/s. Global Green in Mahaboobnagar &

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

Direct marketing (DM) is an especially successful emerging chain in Andhra Pradesh in which margins are altogether eliminated and the consumers get access to fresh products straight from the farms. Farmer'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 Rithyu 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.

4.3. Marketing reforms in Madhya Pradesh

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 modeled 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

Agriculture Commission, 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 Bazar* in rural areas were also created. The *Mandi* Board has its office in Bhopal. The state has the distinction of eliminating certain middle men 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 license. 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, co-operative agencies like the State Co-Operative Federation (Markfed), the Madhya Pradesh State Agro-industries development Co-operation, 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

Amendments

With the recommendation of Government of India in 2003, the Madhya Pradesh KUM Adhiniyam 1972 began to provide for contract farming (CF). Purchase Center outside the

market yard, Single license for entire state in which ITC soya Choupal is a special success story, leasing out of surplus market yard to processors, e-marketing, consumer's market (CM), especially for fruit and vegetables were other innovations. While an amendment made in 2003 allows for direct sales in farmer's market and regulated contract farming, several restriction 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 centers in *mandies* tied with *Kissan Mitra*, farmer's Road fund, funding research and infrastructural development including the E-Marketing scheme EKV 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 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.

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, 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 infrastructure has improved.

4.4. Marketing Reforms in Maharashtra

Regulated marketing

The Maharashtra Agriculture 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 weighment 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 license from APMC to operate in the *mandi*.

The Agricultural Produce Market Committees (MCs) 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 members of agricultural credit societies, other co-operative 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 licenses.

The APMC generated income by levying license fees, rentals and market fees. A part of the income is passed on to MASMB 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, export facility centers etc. 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. Establishment of a State Warehousing Corporation to increase the holding capacity of cultivators so as to avoid sale when there are gluts, 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 development. Market regulation supplements the price support- operations of the government to ensure remunerative post-harvest prices.

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.

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 produced to the RM yard. Large numbers of licenses were issued for Direct marketing (72 licenses), Private markets (7 approvals), Farmer- consumer markets (33 locations), Contract farming (1 lakh hectares), Single license system (9 private players), 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 vegetable in the private or joint sector in Mumbai, Nashik and Nagpur for perishable fruits and vegetables. Modern markets in Hingoli and Aurangabad district are also under preparation through Public Private Partnership.

¹ The added features are (i) the establishment of *competitive markets* which include Private markets, Farmers-consumers Markets and Direct Marketing, (ii) permission for *Private Markets* whereby any person, partnership firm, co-operative society, NGO or company can establish a Private market with a license from of 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, co-operative society, NGO or company in one or more than one market area¹ (excepting the market area of Bombay Agriculture Produce Market Committee) with a license from the Director enabling farmers to sell more than 10 kg of fruits and vegetables or other perishable agricultural produce and 50 Kgs of foodgrains or other non-perishable agricultural produce to one single consumer, (iv) license 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.

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 (AEZ) 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 markets guidelines to farmers through mobile telephones. More than 10,000 farmers have subscribed to this facility.

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. 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 fertilizers and Petro Chemicals Ltd., ITC, Bhartiya Group, etc. have entered agricultural markets to capitalize to 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 Liver 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 fertilizers and Petro Chemicals (DFPCL), a subject of this study, also

entered agricultural marketing through its Agribusiness and Farming Solution (ABBFS). The ABFS Division provides various services to farmers and is involved in agricultural marketing.

4.5. Marketing reforms in Himachal Pradesh

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 was 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.

Problems with the Regular channel

The main complaint we encountered about this channel related to mal-practices of buyers. For lack of alternatives the orchardists of Himachal Pradesh are intensely dependent on traders from Delhi especially from Azaadpur 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, over-charging and even unjustified charging of farmers are problems reported by most of the respondent farmers. Besides, deals are said to be struck through under-cover 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 favorable to

traders. Marketing of fruits is a speculative exercise in which the farmer is at a losing end with low returns.

New Era

In Himachal Pradesh reforms in agricultural marketing were needed more on account of the mal-practices 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, co-operative marketing, consumer-market (direct market), contract marketing and creation of post harvest infrastructure. Farmers are encouraged to directly sell to bulk buyers, processor and even to consumers. There was provision for public- private partnership in 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, organic fertilizer 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 some one 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 like ADANI Fresh Limited, Container Corporation of India and Dev Bhoomi Cool Chamber limited 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.

Major differences are observed between traditional and emerging marketing channels in the state. While 6 to 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, Adani group and the Indian Railways being two such bulk buyers.

4.6. Marketing reforms in Assam

Traditional Marketing

The Assam agriculture produce 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 go-downs, 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 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 5.9 in Chapter 5). According to the records there is one organic market, nineteen cold storages and a number of processing units in the state. Besides the ASAMB, the cooperative organizations namely North Eastern Regional Agricultural Marketing Corporation Ltd (NERAMAC) and STATFED along with the FCI are other major State or Central government agencies involved in agro-marketing.

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 socio-political 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 mal-practices 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 actual 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 mile stone in the state.

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 encourages and permits 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 volumes. 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, anthurium commercially under buy back arrangement with flowers exporters. About 1500 hectares of land covering 3000 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 economise on transportation cost. The buy-back arrangement of the CF has also gained momentum.

4.7. Marketing reforms in Bihar

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.

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 who also missed out the opportunity 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 on an 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 multi-lateral 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.

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 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 organised 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 is however till now a failure, due to the shortage of cold-storage, poor transportation system and the short shelf-life of the product.

A greater problem arises in infrastructure creation and institutional financing. The BSAMB has 1324 acres of land and 95 markets. A major market development scheme with five modern terminal markets, conversion of 54 market yards to agri-business centres of middle tier and creation of 1500 rural *haats* with developed facilities at the grass root 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.

4.8. 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 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, 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.

Traditional marketing

Unlike subsistence crops, fruits and vegetables are but 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 (*kutchra arthiyas*) 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 periodical 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).

Weaknesses

The farmers expressed major concern about the start absence of development of the rural markets and the lack a 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 nor 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.

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 fields 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 profitable.

4.9 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 skeptical and at the best ambiguous, now and again the state government did express its intentions to carry out the amendment. Yet, is one of the states that have not yet amended the APMC Act.

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, weigh men, measurers, surveyors and warehousemen who carry on business for the specified market with a valid license² 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.

² The 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, Weigh man and Measurer: Persons whose work is to respectively weigh agricultural produce for sale and to measure consignment for sale based on West Bengal Standard 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, preservation of the produce.

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 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 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 agriculture marketing and one person to represent co-operative marketing society. The MC also is represented by a bank financing the marketing channel, two persons representing small growers (less than 2 hectares). 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

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

transactions. The MC's records may be inspected for justified causes and if considered necessary, the MC's authority can even be superceded by that of the state government's.

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 government of its welfare effects on various sections of economic functionaries (see appendix Notes 12.1) 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 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 amounts 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 is 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 pre-disposition 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 are (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, Spencers 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.

4.10. Marketing reforms in Uttar Pradesh

Prior to the establishment of the Regulated Agriculture 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*, *dharamda*. The governments 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 agriculture 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 weighing, establishing market committees and providing necessary facilities for trading.

When the Act came into force in 1965-66, the Uttar Pradesh government implemented the Act in all markets across the state. The number of regulated markets grew fast in 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 mal-practices 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, help-line facilities, creation of go-shalas or cattle homes are documented. The Board has received a prestigious award "Kosamb" from Government of India for good management.

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 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 India Limited's 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 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 2011-12 with license from the Mandi Parishad of Agra. Private players like Indian Tobacco Company (ITC), KRBL and DFM Food 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 licenses 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 license 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 demonstrations of reforms. The practice of partial contract farming is also not unknown.

4.11. 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 sixteen 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 *Kutchi Arthiya* 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 post harvest 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 agro-business which is becoming important in today's economy. Its bias in favour of a few crops is also becoming weakness.

Due to Punjab's place in the green revolution that shook the country in 1960s and 1970s, food grains enjoyed the central place in the state's marketing strategy, The benefits of marketing infrastructure hardly percolated to other products, not even pulses and coarse cereals leave alone, fruits, and vegetables for which also the states Punjab and Haryana had natural advantages. 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 for which purpose there was 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, 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 for 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. The farms 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 is however be noted that in actual practice fruits and vegetables are generally sold by farmers through a specific system commonly known as pre-harvest 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 (pre-harvest contractors) over the producers from enduring. The state APMC Act also inhibited institutions from being innovated and flexible. The prevailing contract farming (PHC) did little to link producers with agri-businesses. 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 *Aapni 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 pre-harvest system, this market delivers the products from the farmers to the FEM and from there 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. Our analysis indicates that the direct selling method raises the farmer's share of the consumer rupee to over 80% compared to 35-45% in the traditional channels.

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 small holder 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, basmati rice. Some of these agreements are multi-partite and Punjab Agro-Foods 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 Subhlabh, United Breweries, 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 (PAC) 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 chillis 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 monitor the cultivation process. Apart from Pepsi, Nijjer Food is another contractor but this buyer accepts all products that is 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.

4.12. Marketing reforms in Haryana

To regulate all markets in the state Haryana state enacted for itself the Punjab agriculture 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 Jhajar, Faridabad and Rewari districts have only two markets each. In Rewari on the average 200 villages are served by one RM so those farmer 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 higher value further product. There are now 106 market committee, 178 subyards and other facility compared to only 58 market committee and 60 subyards that existed in 1969.

The HSAMB also strengthened its construction wing and has been a pioneer in 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 Hissar to provide information and to organize seminars.

Haryana has used the provision of 'notification' of the Rules and partially reformed, for allowing contract farming. New model fruits 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 post harvest management and marketing are planned. A world class terminal market for fruits and vegetable 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.

5. Impact of Emerging Market Channels

This chapter takes an integrated view to enquire whether different channels emerging in the aftermath of reforms are associated with lower marketing costs and if shortening the channel can produce savings in the marketing cost. We also examine the reach of the new channels towards the relatively disadvantaged farm classes and the implications for associated issues like price determination, post-harvest losses and farm practices. The crops, areas and channels under study are detailed in Table A5.1. It may be noted that in West Bengal, a state which has not legislated reforms, the study crop for the 'emerging' channel as could be designated under the limitation, is a vegetable called arum for which a familiar traditional channel did not exist in the area. The traditional crop chosen is therefore a different one namely mustard and the two crops could not be compared in terms of all parameters for our purpose. The sample details are explained in Chapter 4 and appendix 4. Chapter 3 outlines the method of analysis followed.

5.2. Variety of channels

The variety that marks the departure of these channels from traditionally regulated marketing systems 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 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-government agency to protect farmers' interest is yet another variation (potato in Assam) studied.

The traditional channel is not avoided in the emerging market studied in Maharashtra (Pomegranate, Onion), Himachal Pradesh (Apple) and Madhya Pradesh (Soyabean) 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(push cart vendors, local stores and wet markets). The computerized electronic portal hosted by a private company is the medium in one case (Soyabean 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 covers a nonprofit 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 (figure 5.1).

Thus, not in all cases a profit oriented company is included in a chain 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 (Himachal Pradesh-apple, Maharashtra) though in other they are not entirely relieved. The first link, namely the commission agent or the pre-harvest contractor is bypassed in all cases.

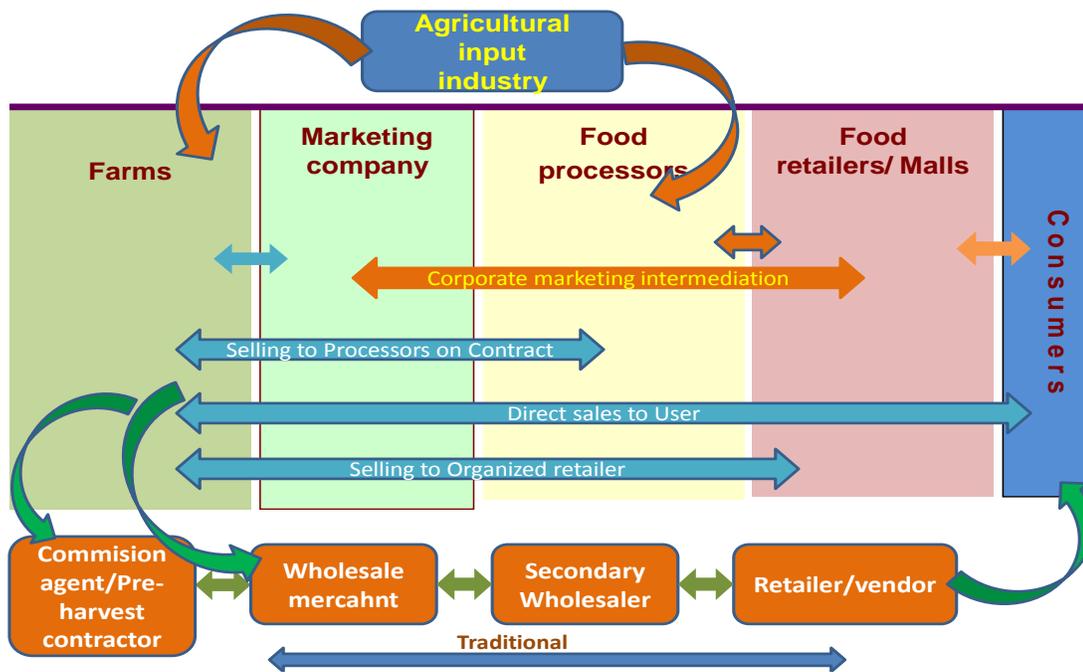


Figure: 5.1. Alternate Marketing Channels

5.3. Reduction of marketing costs and gain in efficiency

Marketing cost in the traditional channel depends on the nature of the crop concerned and the regional features such as the quality of roads. The existing state order is important besides the supervision of the channel in the specific case. Perishability is an important factor behind higher marketing cost and a strong rationale for the demand for modern marketing facilities. Figures 5.2 (a) and (b) show that the average costs of marketing vegetables and fruits in relation to the price that producers receive (RGMCF) are comparable in our sample if soyabean 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 three the different samples (table 5.3).

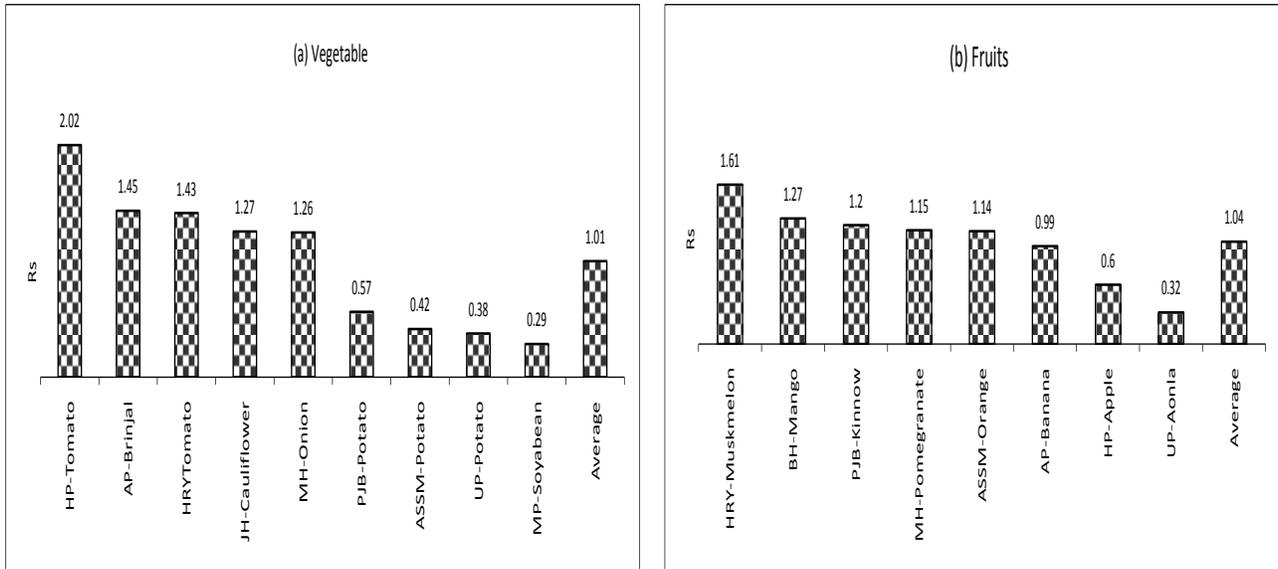


Figure 5.2: Marketing cost per Farmer Rupee in Traditional channels

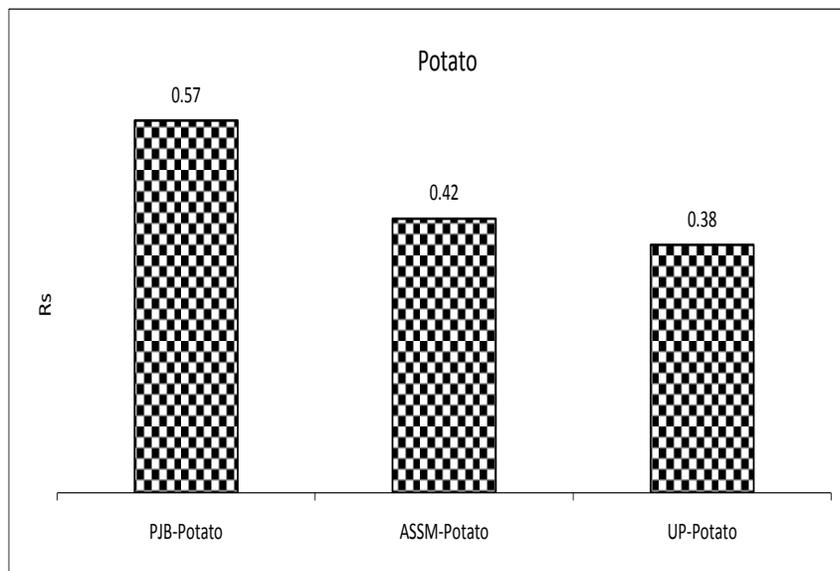


Figure 5.3: Marketing cost of Potato per Farmer Rupee in Traditional channels

Efficiency is undoubtedly gained by shifting to the emerging channels as apparent from our survey results. The summarized picture in table 5.1 shows that savings in marketing costs (SMF, RSMF, SMU and RSMU) are effected in all the emerging marketing channels barring the trader based ones. 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 consumer'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 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 a monetized measure.

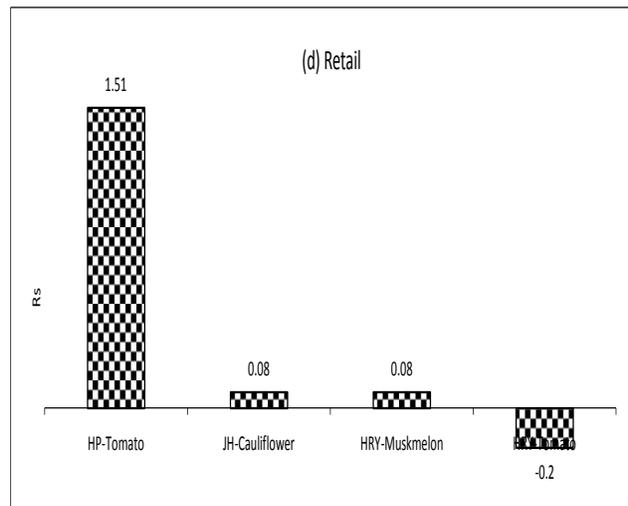
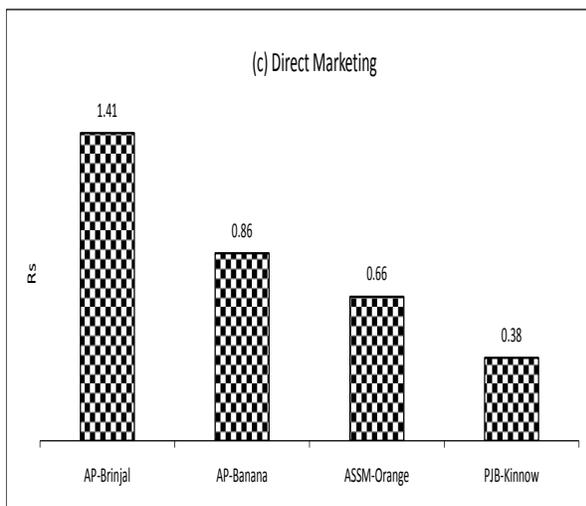
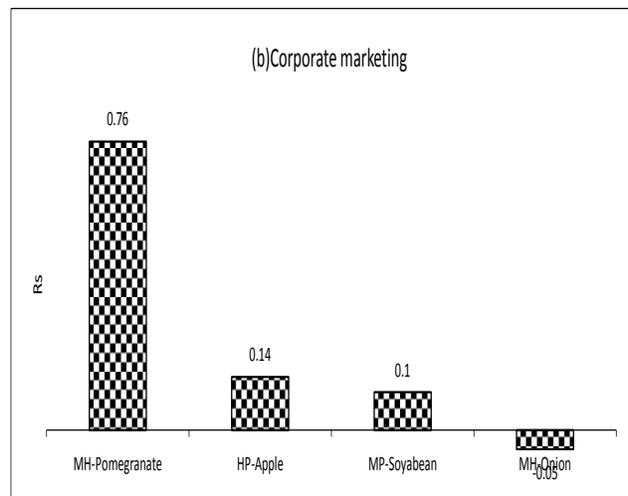
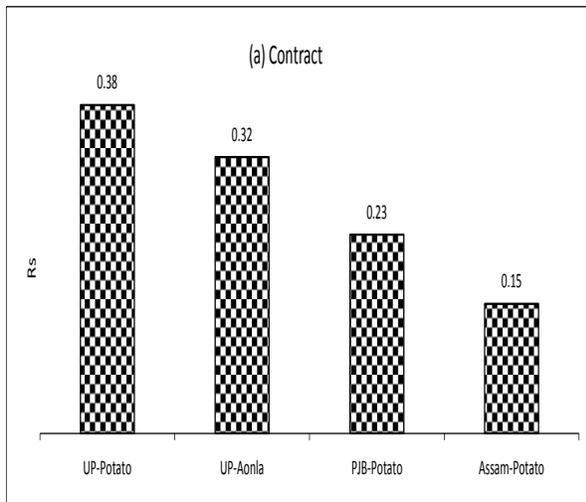
Table 5.1: Gross marketing cost reduction in the Emerging channels per farmer's Rupee

	per farmer rupee		per user 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

Note: 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. Source: Computed from survey data.

The averages shown in Table 5.1 however hide the variations across cases within each category of channels (figure 5.4). In contract all the cases reported suggest positive gains in efficiency though varying from 15 paise 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 favorable impact on efficiency with more than Rs 1.40 being saved per farmer's rupee in Andhra Pradesh. In corporate marketing the performance is more varied and interestingly, 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 (Figures 5.4: (f) and 5.4. (g)) but variation is much larger among vegetables. While all the fruit 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 then the corresponding traditional ones. Gains are also high about 140 to 150% for some vegetable while the maximum gain observed in this study was of 86 paise of marketing cost saved per each farmers rupee.



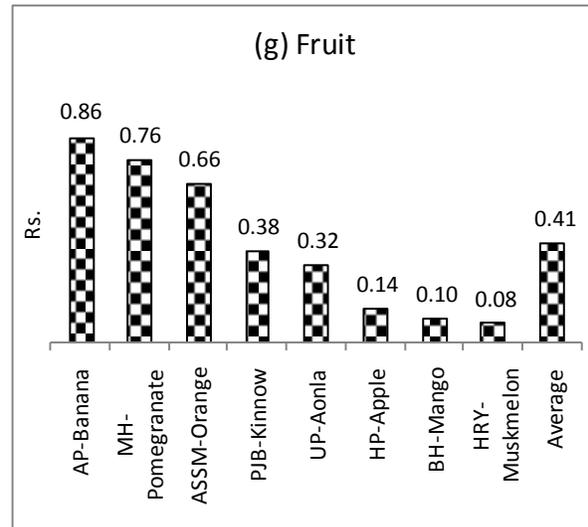
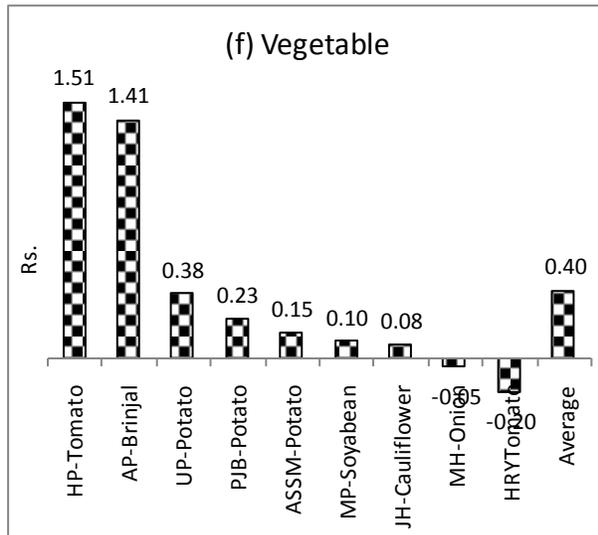
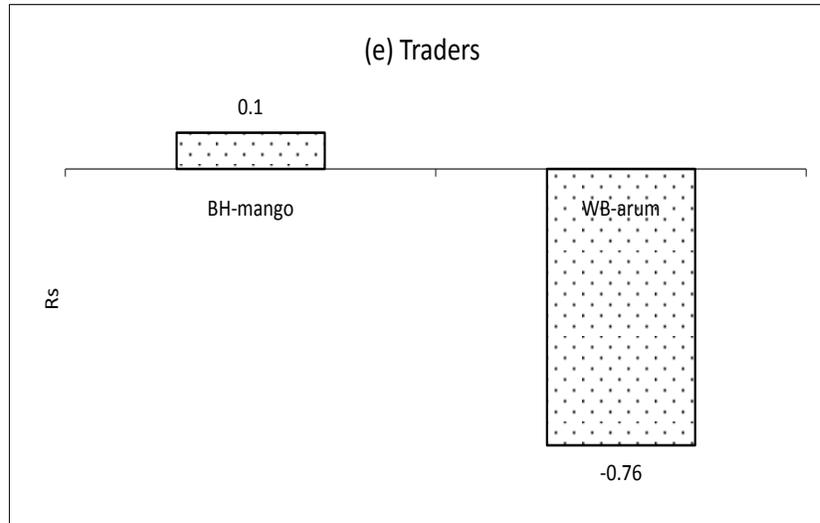


Figure 5.4: Savings in Marketing Cost per Farmer Rupee

5.4. Shorter channels and traders' productivity

Shortening of channel length is associated with higher levels of development (Chapter 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 the emerging shorter channel serves in reducing marketing costs it is likely to drive out the traditional functionaries. Table 5.1 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 A5.2) in Appendix 5.

Channels can be grouped by the degree of presence of private traders as reflected by the structure of the channel (Table A5.1). Figures 5.5 show clear ranking both in 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.

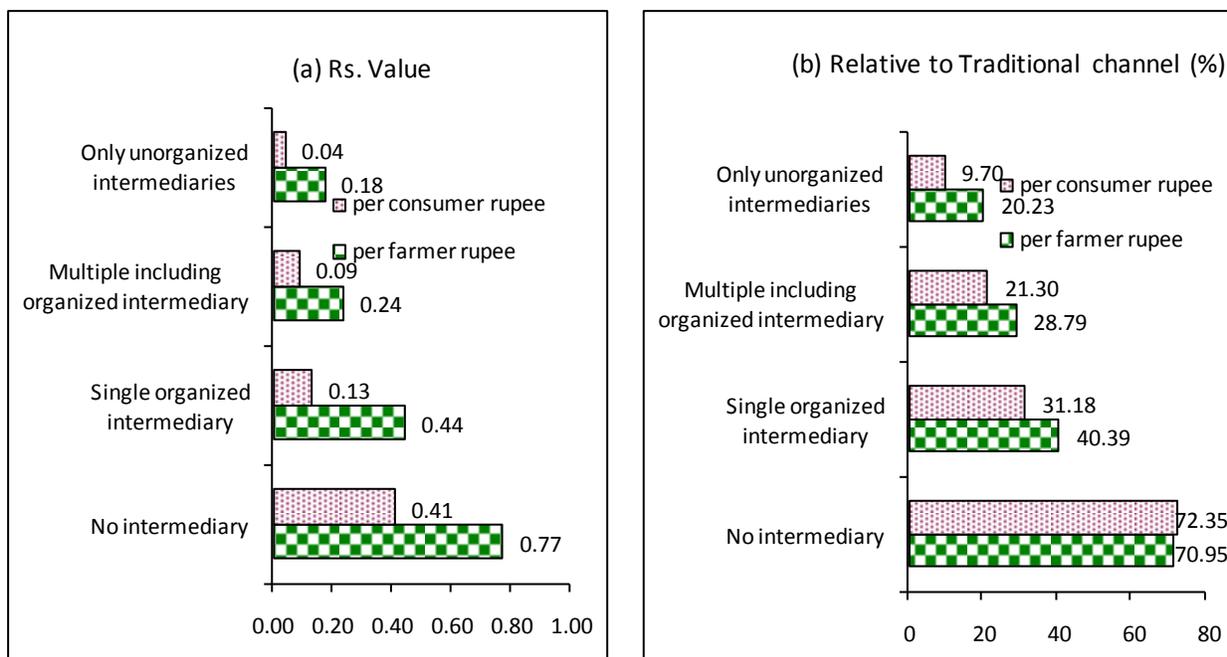


Figure 5.5: Reduction in gross marketing cost in the Emerging channels by channel length

5.5. Economic gains for agriculture

Net farmer price after deducting marketing costs incurred is relatively higher in the emerging channel (table 5.2) though there are exceptions as in Haryana 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.

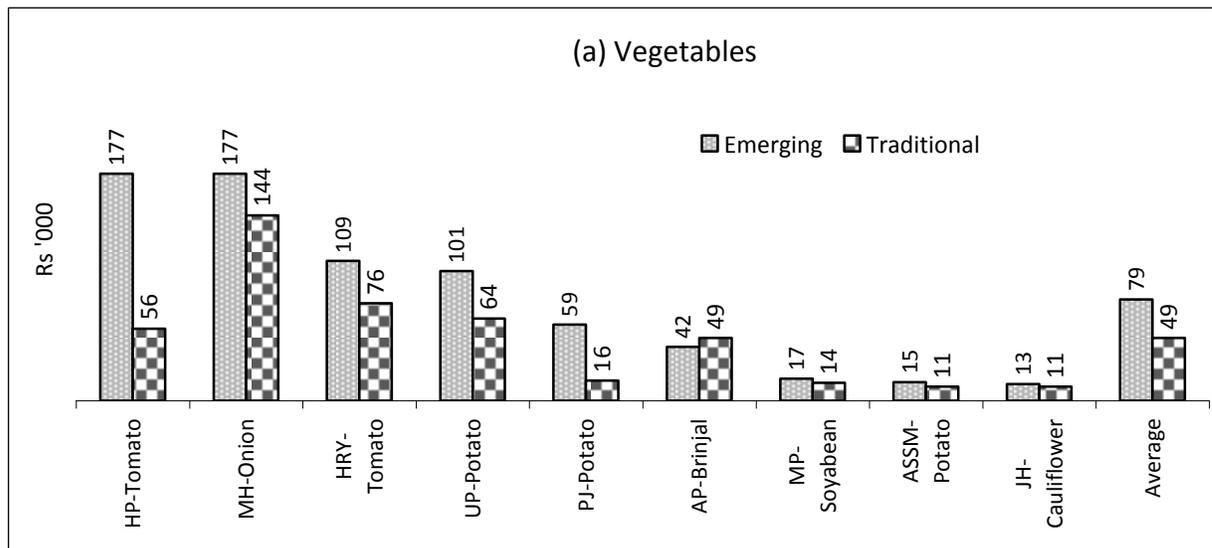
Table 5.2: Average gains to agriculture across cases in channels (Ratio to traditional channel)

	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*	1.30*	1.38*

Note: * includes only Bihar. Comparison is not meaningful in West Bengal. Source: Computed from survey data.

Between fruits and vegetables the returns are higher in the former case in both channels (Figure 5.6) 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 Pradesh are found to lead in terms of returns from growing both fruit and vegetables 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.



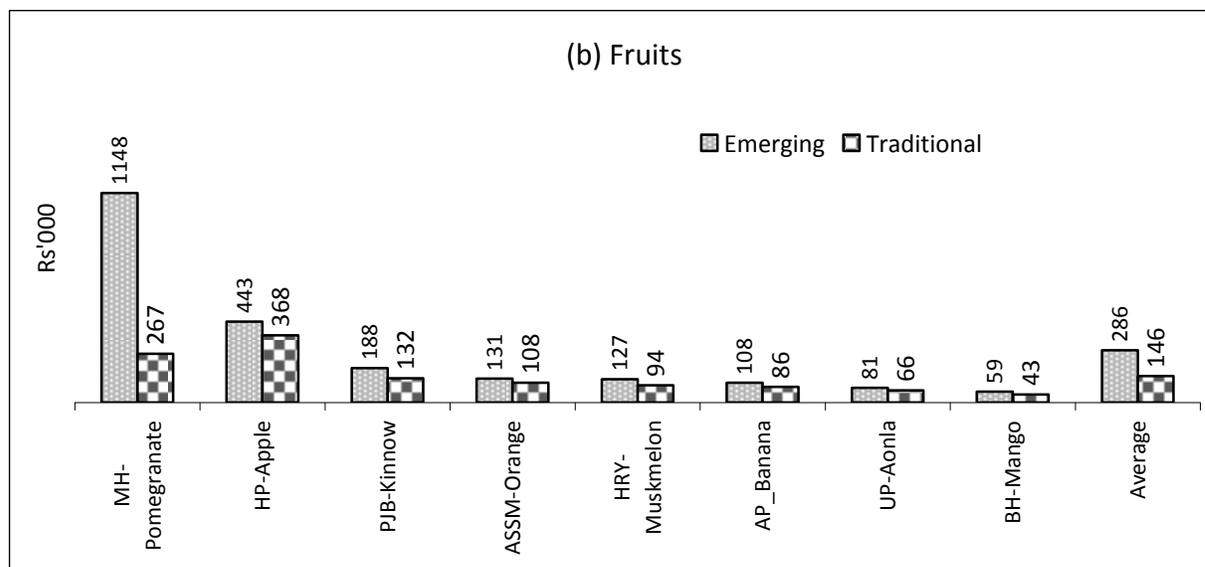


Figure 5.6: Returns from farming per hectare of land cultivated

5.6. Participation of farm classes

Inclusion of small holder farmers in any beneficial programme is a serious question for Indian agriculture as most farmers hold less than 2 hectares of land. However land holding is only one of the indicators of class among farmers and it is important to consider ownership of assets other than land. Treating land holding as a main indicator of disadvantage, the assessment produces a mixed result (table 5.3). The channels are not biased in any direction. 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.

Table 5.3: Inclusion of disadvantaged Farmers in the Emerging channels (share as ratio to corresponding share in the traditional channel)

	Small Holder	Backward Classes	Not owning mobile phone	Not owning motorcycle	Not owning pumpset
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.

Looking at a more disaggregate picture (Figure 5.7) the inclusion of small farmers is less in the emerging channels in nine of the seventeen 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, cauliflower in Jharkhand). Contract (potato in Assam and Punjab and aonla in Uttar Pradesh) and corporate mediation (onion in Maharashtra and soyabean in Madhya Pradesh) all of which involve participation of private companies.

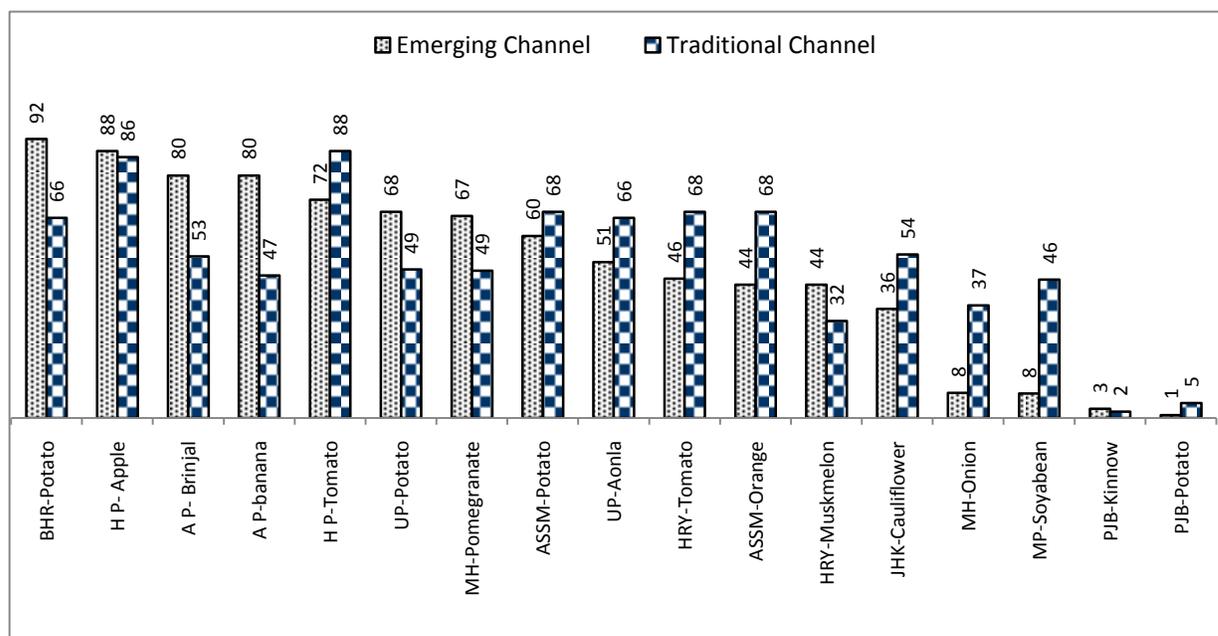


Figure 5.7: Households (%) operating small farms

5.7. 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 (Figure 5.8) since land holding pattern has its regional dimension based on history and soil fertility. It is not surprising that the average farm size observed for Potato and Kinnow in Punjab are large in both channels, 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.

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 size in Madhya Pradesh (3 hectare) and Himachal Pradesh (1 hectare) are smaller relative to that among onion growers in Maharashtra (5.9 hectare). On the whole, the CMI model in Maharashtra and all the Contract farming cases involve relatively larger farms (Figure 5.8 and 5.9) and farm size exceeds 2 hectare 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.

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 Diary, 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 uniformly across the country.

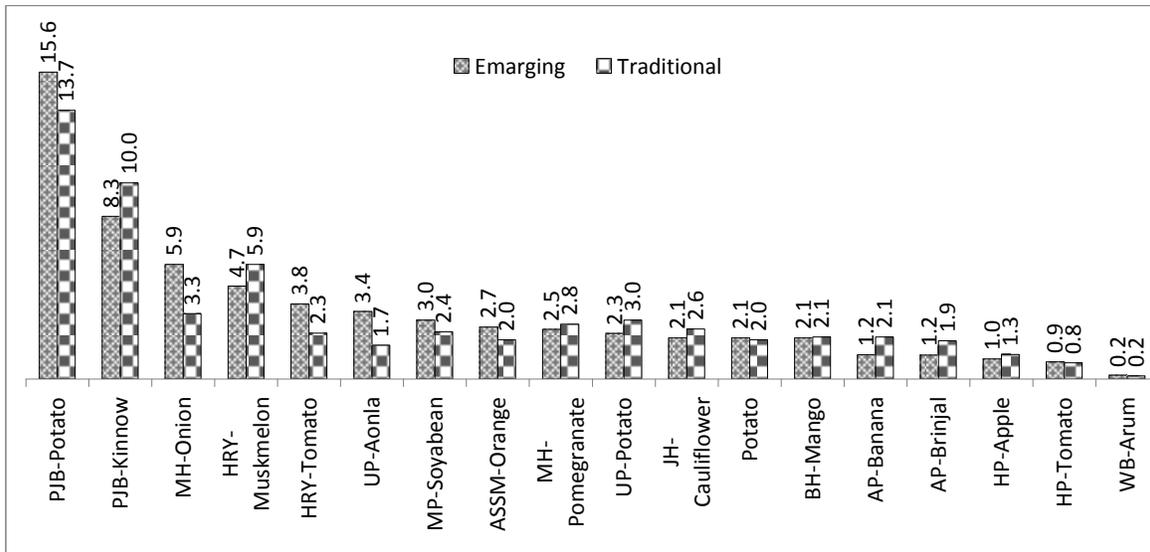


Figure 5.8: Average Farm size of Participants in Emerging and Traditional Channels

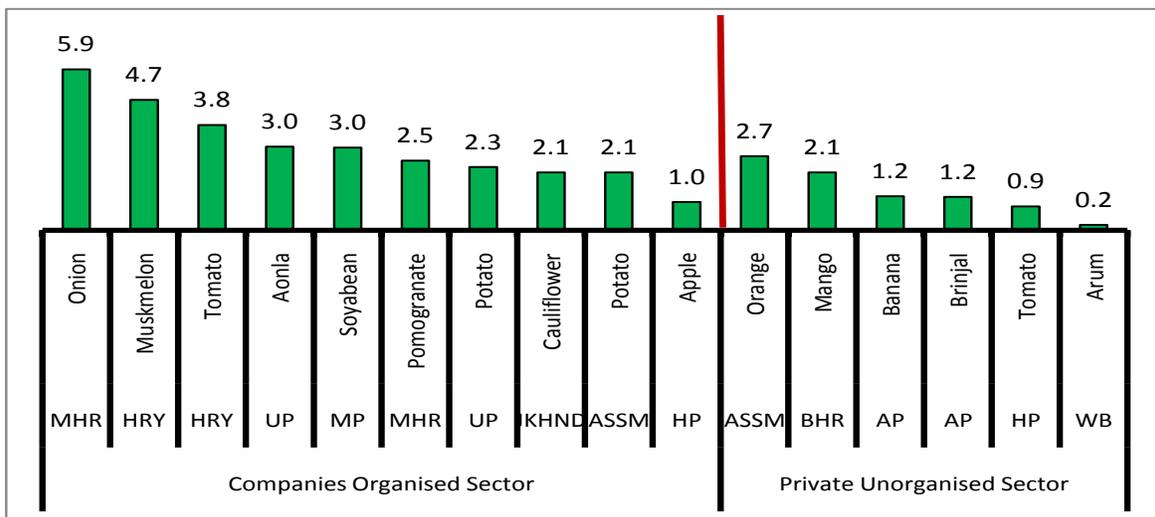


Figure 5.9: Average Farm size (Hectares) of Sample Households in Emerging channels (excluding Punjab)

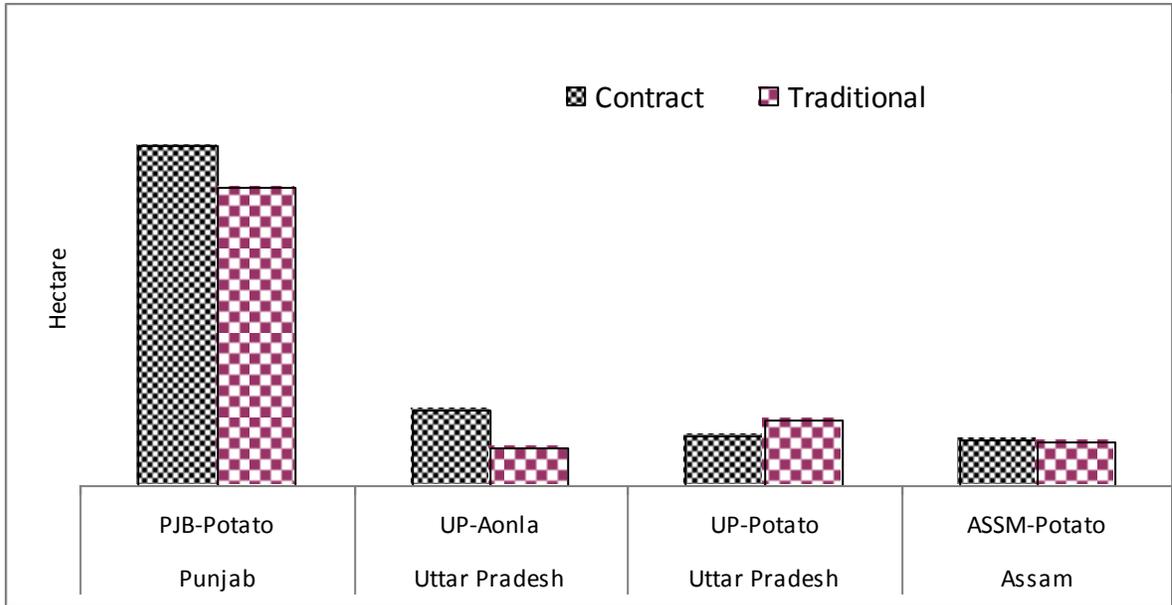


Figure 5.10: Average farm size of Contract farmers of Potato

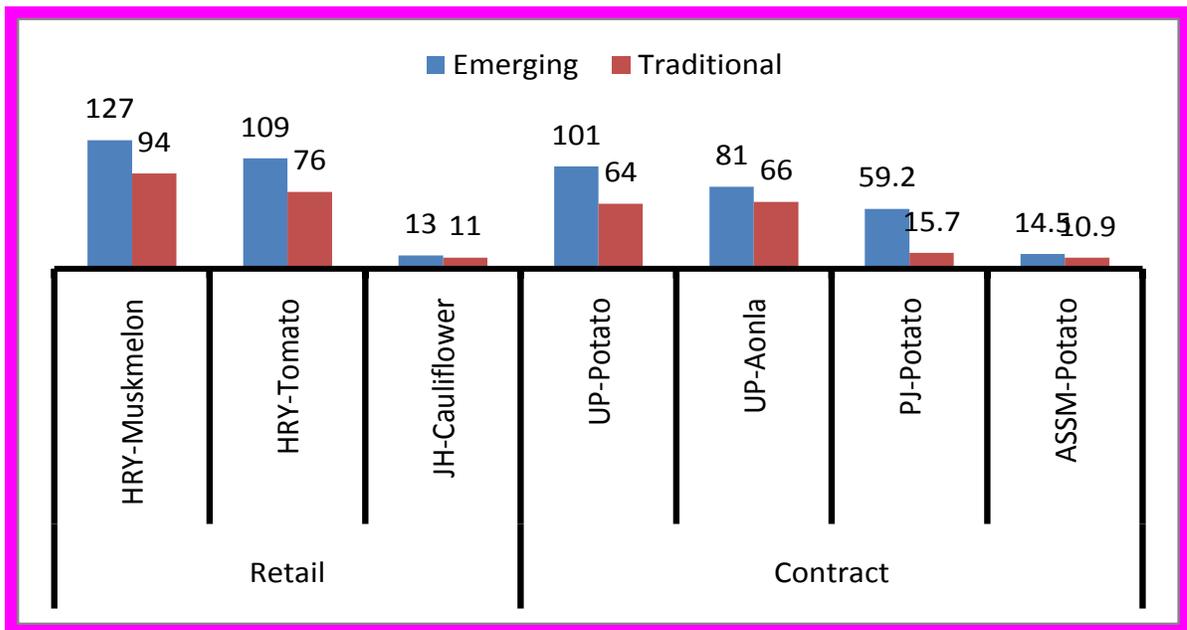


Figure 5.11: Regional variation of returns from land in Contract and retail

5.8. Farm practices

Farm practices do not seem to be seriously influenced by the participation at this stage (table 5.4). 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 more intense in the emerging channels. Use of on-farm storage facilities, hired 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 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. Productivity is mostly higher in the emerging channel by a margin. Preliminary on-farm processing is observed only in the CMI and trader based channels.

Table :5.4: 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 tractpr	On farm processing
Direct	0.85	1	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

Note: Figures are averages across channels. Average farm size is measured in hectares, Use of fertilizer, manure (organic) and hired labour in Rs/hectare and use of other facilities as percentages of farm households using the facilities. Source: Computed from survey data.

5.9. The place of traditional marketing

Producers are mostly 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. 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. In other cases such as Assam, Himachal Pradesh and Jharkhand there is 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.

Despite the merits of the emerging channels it appears to be important that the traditional markets survive the competition. The size of the market is one reason in certain cases where

there is sufficient supply and demand to allow expansion 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 and the traditional channels involving a regulated market can be a venue for the disposal of products not suitable for the channels. Keeping in view that consumers too have the need for alternative sources related to price and quality considerations, the traditional channels are especially useful.

Most notably the traditional trader continues to be a prime source of market information to sellers in both channels. 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. Public market intelligence AGMARKET is not found to be effective in enlightening the producer directly although whether the traders benefited informationally from the scheme or from futures markets is not revealed by the studied.

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 to compete with and support the emerging markets.

Rejection and Wastage

Producers generally adhere to selected channels in the corporate marketing cases but diversification is reported in Maharashtra where farmers can hold back output due to the availability of farm storage structures. In Andhra Pradesh farmers take the entire products to the Rythu Bazaar but rejection is encountered in both channels. Some of the rejected products are disposed elsewhere at throw away prices. However, rejection is not a special problem felt by most of the participants in the survey. In Assam direct marketing is only one of the multiple disposal routes but selling in the local markets is more common than in the

regulated market especially among the traditional channel farmers. In retail, the farmer is forced to depend on other channels owing to rejection but the occurrence of unsold product is low. This rejection is not a major source of products.

Wastage at the retail level is considerable in a few cases. Retail level losses constitute 68% and 60% of the total losses of tomato in Himachal Pradesh and on-farm losses only 27 % and 20% in the traditional channel and emerging channel respectively. In Jharkhand unprotected transportation affects both channels but the losses at 6.25% of the total are higher in the traditional channel than the 3% in emerging channel because the buyer owns suitable vehicles. Delayed harvesting of cauliflower leads to discoloration and there is a choice among packing methods (crates, gunny bag and loose) which affects the incidence of rotting in different degrees. Farm level losses account for 4% and 3% of the total losses in the traditional and emerging channel respectively. The emerging channel too is a victim of post harvest losses and better infrastructure, safe transportation, training of handling workers and establishment of processing unit in proximity are pivotal for reducing losses.

Difficulties of storage and transportation and auctions in the open air are attributed as leading causes of post-harvest losses of onion in the CMI channel in Maharashtra while faulty picking, culling and other on-farm practices are reported to be damaging in Himachal Pradesh and Madhya Pradesh. Lack of storage of facility at farm level causes greater product losses of Potato in Uttar Pradesh in the traditional channels than in the emerging contract channel in which the product is either picked up by the buyer from farmgate or gets delivered at the company's storage centres by the farmers soon after harvest. Faulty picking however is a major source of losses in Uttar Pradesh and Punjab. Losses in transit are a common problem. Considerable amount of fruits and vegetables that are naturally more perishable than grains is said to be wasted and lost to users due archaic methods.

The study suggests that losses occur mostly at the stage of harvest and in transit though wastage at retail level is also not insignificant. Such losses are attributable to faulty farming

practices and poor road connection and not so much due to channel weakness. Harvesting is reported as a crucial stage when damages take place in all cases studied for Potato. On farm storage is important and the shortfall in this privilege is a more serious issue where buyer is a company and the quality of potato decides its acceptance. Kinnow in Punjab is highly sensitive to weather and diseases.

In nearly all cases producers have attributed the losses merely to the perishable nature of the crop without considering the possibility of reducing the incidence through technology. Long distances are reported to be an important cause of product wastage associated with the poor condition of roads but waiting for higher prices is also reported to be one of the leading reasons for losses. Thus affordable storage facilities for farmer would remain critical.

Although product wastage is reduced in the emerging channels due to the creation of clearing Centres with refrigerated storage facilities, marketing reforms may not be a complete solution as the problem often lies in poor infrastructure that affects both channels. Storage facility is an important aspect in all cases but the private companies do not always help. In fact the access to storage facility becomes a pre-requisite for participation distorting the causality signal. Similarly there is an urgent need to improve farm practices to avoid damage but when private extension is involved the onus is on the emerging marketing channels to suggest ways and means of doing that. In other words, improvement in supply chains expected to be offered by the new channels is only part of the answer to the wastage problem. Suitable equipment, training and extension for farmers and better roads remain important.

5.10. Association with other services

Producers do not generally avail of other facilities like inputs and credit from buyers in emerging channels although borrowing from traders is reported albeit in rare cases in the

traditional channel. In contracts however farmers do get inputs and input advances as well as extension and have expressed high level of satisfaction (Table A 5.6.) for these services.

5.11. Organizational Innovations

Direct selling in farmers market is found to be successful in drawing small and poorer farmers, in achieving high market efficiency and producer gains and relief from domination from traders. However, this has not been attractive to all classes of producers and sometimes the interface forms merely an additional avenue of product disposal. In any case this form of marketing affects specialization and productivity as is seen in Andhra Pradesh case of Brinjal where the lacking of producers in marketing skills also creates dissatisfaction among consumers who may drift to more sophisticated selling points.

Collective sales by farmer group is found to be successful in Assam in overcoming the challenges of remoteness, small sized lots and weak bargaining strength vis a 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.

5.12. Changing rules of Price determination

The process of price determination is the most important departure of the evolving structure from the traditional one. While auctions, even though not appropriately conducted, are still the way of price discovery in traditional marketing, this is nowhere the case in the emerging channels. Only in Direct Marketing there is scope of direct negotiations involving simultaneous transaction and assemblage of numerous buyers and sellers although it is reported that price is decided in advance in the Rythu Bazaar in Andhra Pradesh. The case of sales by farmers' groups in Assam where information sharing is substantial is perhaps an instance of price determination that is aligned with conventional theory drawn from neo-

classical economy. 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. These methods of price determination will not probably reflect the actual demand and supply situation.

In most cases even if the price is fixed at the time of sale, it is based more on the bargaining strength, than market information which, if any is involved relates only to past events elsewhere. In fact the price is deeply related to the recent price fetched in the regulated market and shows that traditional market still remains an important guide to price determination. While the Government's AGMARKNET is not found to be effective in our study cases except only two, this public intelligence will also drawn from traditional market transactions. In this context the futures market 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 transactions who are not likely to be producers. In the absence of such an informed demand and supply based benchmark for price discovery the new emerging channel will be groping with pricing and overtime, a faulty mechanism can not only hurts the farmers economic interest but signal the agriculture sector into wrong tracks.

5.13. Choice of 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, the choice of the new channel, marking a major shift in traditional practice, social influence along with habitual acceptance is found to be of moderate importance, reported by 8% of the farmers in West Bengal and 13% in Maharashtra.

Social influence hardly played a role in the acceptance of contract farming, reported by none in the case of potato in Uttar Pradesh and Punjab and by a meager 4% in Aonla in Uttar

Pradesh. The charm of reaping higher prices has attracted 16% of participants in the emerging channel in Maharashtra and 13.5% in West Bengal. In contracts higher prices allured 40% of participants in Punjab and between 20 and 25% in Uttar Pradesh. The security of assured sales also draws participation but paradoxically the same attraction also retains participation in the traditional channels since the chances of rejection are reduced. In contract farming low marketing cost and superior services are powerful forces that draw farmers in Punjab and Uttar Pradesh. Among other factors, shorter distances to be travel with wares and input support were mentioned, while hidden costs like payable bribes and long waiting periods disillusioned the farmers' attachment in the traditional channel. In Madhya Pradesh higher prices and assured sales allured all farmers and social influence too supplemented these pulls in many cases. In Direct Marketing in Punjab, the prospects of getting higher prices are by far the most influential factor.

6. Reconsidering Agricultural marketing in India

The new and emerging supply chains are expected to deliver higher prices and returns to the producers even while offering cheaper commodities to consumers and other users. The new genre of marketing would be not just about selling products but a blend of varied services arising 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.

At a stage when reforms are only nascent and battle with resistances, channels that are highly diverse in their 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 longstanding 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.

15.2. 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 facilitated by private capital. Higher prices passed on to the farmers, reduced marketing costs and margins and greater value addition, will unleash the incentive to achieve 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 MNREGA¹ which, are based on the public budget. Emerging reality on other fronts such as advancing technologies in farmers nutrition and hygiene cold chains and biofuels rising via post harvest practices, energy prices, climate changes and the potentials of regional sourcing will have radical impacts on transportation and logistics in a more flexible marketing order (Sanyal, 2009).

15.3. 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 to be the losers. By this argument, the traditional marketing system is implicitly viewed as a reservoir for semi-skilled work force still not absorbed in the organized sector the economy and the spectre of 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 effect 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 push-cart vendors.

In the underdeveloped rural milieu the services of the middleman 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 and their multifarious functions such as emergency money-lending, inputs supplies and information transmission. Their archaic system of accountancy failed in evaluating than services. The services of these agents at the

¹ Mahatma Gandhi National Rural Employment Guarantee Act.

initial stages of development 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 discouraged in today's international market. The damage inflicted on local entrepreneurs could be irreversible (Swamy, 2012).

Inequality or discrimination created among farmers is a fear, born 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.

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 can be the result. 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 and excessive use of chemicals and soil exhaustion as the objective 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 interactive mode of extension that is increasingly emphasized today will decline with greater dictate coming from processing and retailing companies. Their capability of traditional foodgrain farming and longer term food security is compromised as farmers increasingly to grow lucrative cash crops.

The neo-classical understanding of price determination will be challenged as open auctions, get replaced by closed-door- mutual bargaining some times in advance under contract. Conditionality of other aspects like inputs, extension and technology, specificity of the products under transaction and differentiation of technology make 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, 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.

15.4. 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. At higher levels of development, marketing becomes a challenge not only to satisfy consumer's wants, but also to deliver an entire 'standard of living' encompassing the ambience in transaction. Marketing becomes an organized subject matter in the broader discipline of managerial sciences and remains dynamic with the inflow of new ideas.

Experiences have varied across countries but the linkage between development and channel length difficult is largely non-linearity. 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 state of development today and is India ready for that stage?

15.5. Experiences from other countries

India is a late comer 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 as a natural process but more commonly as a conditionality of aid taken from international agencies and 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.

15.6. 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 socio-political 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 by others. 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 to allow transactions to take place in a fair and transparent manner, creating self-employment opportunities for a fleet of trades in market chains. Open auction, supervised by democratically created market bodies was the recognized mode of transaction to ensure fair prices and was supervised.

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.

15.7. 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 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.

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 actual prevailed often deviated 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, computerizations are some of the development that are impinging on the traditional channels too. Agricultural Research and Marketing 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 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. Introducing electronic option platforms for all *mandis* and replacing the licenses of the APMC market by open registration, electronic display of prices for short duration vegetables crops were also suggested. Organised marketing and greater private sector participation were emphasized. To promote integrated value chains exempting vegetable from market fees is in process. The state 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 forward market 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 skill involved. 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 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 already observed as found in our field studies.

15.8. Empirical findings from primary data and field information

Sample survey of participants in about two emerging channels, was conducted in eleven 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 pre-harvest 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 pre-harvest 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.

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 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-government agency in a tri-partite 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 modified form of the traditional channel.

Why participants chose 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. 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.

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 benefitted 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 when 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.

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.

Political economy implications

The Direct marketing interface produces, as could be expected, 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 seek 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.

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 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 problems for the channels due to the coexistence of multiple channels.

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, (though this can in no way be firmly concluded from this study).

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

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.

Other services provide by the Buyer

Producers do not generally avail of other facilities like inputs and credit from buyers in emerging channels although borrowing 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.

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 sales by farmer group is found to be successful in Assam in overcoming the challenges of remoteness, small sized lots and weak bargaining strength vis a 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 diary in organized State promoted venture predated the amendment of APMC Act.

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 function. The traditional traders also operate in high end and larger markets. In other cases such as Assam, Himachal Pradesh and Jharkhand there is 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 the size of market as in Maharashtra where the presence of multiple channels is essential. Second, rejections and selectivity in emerging markets requires 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 and threats of competition to emerging channels until the market is more developed.

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 AGMARKET 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. AGMARKET however has been of some service only in Haryana and Punjab but it draws from transaction in regulated market.

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 inappropriate by implemented through poor supervision, are still the way of price discovery in traditional marketing, this is nowhere the case in the emerging channels. The case of sales by farmers' groups in Assam where information sharing is substantial is perhaps another instance of price determination that is align with conventional theory drawn from neo-classical economy. 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 information will not probably reflects 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 a 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.

Wastage

One of the motivations for reforms is to reduce post harvest losses of products. The incidence of products 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. Long distances, poor condition of roads and waiting for higher prices are also reported to be leading reasons for losses. 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.

Poor infrastructure 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 too 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.

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 co-existence 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.

15.9. 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 to all 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 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.

The gain in efficiency from a switch over to an emerging channel is hard to deny. The new channels can also be associated with increases in productivity, profit and returns from farming. Distributional implications are a concern and channelising 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. 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 neo-classical economic theories is increasingly coming under onslaught which underscores the importance of sustaining the auctions and a need for rethinking on market intelligence.

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Appendix 2.

Table A2: Experiences of conducting marketing reforms in Agriculture				
Cases	Background	Motive force	Result	Problem
African countries	State marketing bodies and price administration	Loan conditions of donors (Berg report), structural reforms and democratisation	Small pockets of success, unconfirmed, instances of reversion and superficiality	Lack of foreign capital flow, mostly private traders and brokers, lack of State commitment, education, iniquitous and shortage of government vacated services
CIS countries (Asia former USSR)	Command economy under Soviet bloc, collective farms	Food security and disintegration of the Soviet union	Unfinished task, transition in process	Large scale of agriculture, unresolved land titles and differences with more open economies though similar in institutions, ideological biases
CEE countries (East Europe)	Government control on pricing mechanism, Soviet influence strong	disintegration of the Soviet union	Smaller share of agriculture, success of food industry as in Hungary but lags in Bulgaria, Romania and former Yugoslav countries	Corruption, bureaucracy, technological shortfall, higher food standards and expectations
USA	Trading	Market freedom, rise of multinationals and marketing techniques	Contract farming becoming common, large retail organization	Loss of transparency and farmer autonomy reported but higher incomes and shift from tobacco growing popularity of farmer market

Table A 2: Intermediation in Emerging marketing channels in sample (continued)					
State	Crop	Channel	Intermediary	Nature	Involvement
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	Soyabean	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

Appendix Tables 3

Table A3.1: 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 (Soyabean)	8.11	48.65	43.24	45.71	31.43	22.86
West Bengal (Arum/Mustard*)	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

* Only Emerging channel is reported for Arum and Traditional channel for Mustard

Table A3.2 : Sample areas, crops and sizes

State	Crop	District	Sample		Block/Taluka	Sample Size
			Block/Taluka	Block/Taluka		
			Emerging marketing Channels		Traditional Marketing Channels	
Andhara Pradesh	Banana	Visakhapatnam	Anandapuram, Payakaraopeta, Kasimkota,	25	Seetanagaram, Tuni, Ambejipeta, Eluru, Chagallu, Pulletekuru	15
	Brinjal		Sabbavaram	25	Anandapuram	15
Assam	Orange	Tinsukia	Hapjan, Kakapathar	50	Hapjan, Kakapathar	50
	Potato	Nagaon	Pakhimoria, Juria	50	Pakhimoria, Juria	50
Bihar	Mango	Bhagalpur	Sultanganj, Nathnagar	50	Sultanganj, Nathnagar	50
Himachal Pradesh	Apple	Shimla	Rohru	50	Rohru	50
	Tomato	Solan	Kandaghat	50	Kandaghat	50
Jharkhand	Cauliflower	Ranchi	Kanke	50	Kanke	50
Madhya Pradesh	Soyabean	Sehore	Sehore	37	Sehore	35
Maharastra	Onion	Nashik	Baglan (Satana)	12	Baglan (Satana)	35
	Pomegranate		Baglan (Satana)	5	Baglan (Satana)	35
Utter Pradesh	Potato	Agra/Hathras	Sadar	25	Khandauli	35
	Anola	Pratapgarh	Sadar	25	Khandauli	35
West Bengal	Arum	Murshidabad	Kandi	100	Kandi	100
Haryana	Tomato	Kurukhetra		50	Not reported	50
	Muskmelon	Gurgaon, Sonapat	Not reported	50		50
Punjab	Kinnow	Firozpur	Abohar	10	Abohar	35
	Potato	Jalandhar	Jalandhar West and Bhogpur	10	Jalandhar West and Bhogpur	35

Appendix 4

A.4.1. 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 A7.1 and A7.2 in 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.

A4.1.1. 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 Tinsukhia and forested geographies as Sehore in Madhya Pradesh. River plains are covered in the districts in Bihar, West Bengal and Punjab and semi-arid segments in Maharashtra and Haryana. Minority population has a higher share in certain regions as in Sehore, Nashik, Murshidabad, Ranchi and Vishakhapatnam. Poverty is high in some of the districts such as Sehore, Ranchi, Murshidabad, Tinsukhia 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.

Vishakhapatnam 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. Vishakhapatnam is the sample district. Both brinjal and banana are traditional crops in the area, having extensive demand arising in both proximate and distant places.

Vishakhapatnam is an industrially developed district but 55% of the labor force is still engaged in agriculture (NSSO, 2007-08). It is fairly urbanized. The population is partially tribal¹ (14%) in character. The average holding size is only 0.9 hectares compared to the state average of 1.2 hectare and nearly 90% of the district's land holdings are small. The irrigation intensity is average 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.

Nasik 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 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 specially known for growing a large variety of fruits and supplying them to Mumbai city. Sugarcane is another cash crop grown, sugar factories being important

¹People belonging to Scheduled Tribe according to Indian Constitution, have a high share in population.

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 hectares 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 groundwater sources. Of the villages in the district, only 10% are not electrified. Although per capita income is higher than the state 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, is a 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.

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 Chattisgrah. 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 producing states of soyabean. Madhya Pradesh partially amended the APMC Act and gave permission to ITC for the purchase of soyabean from growers. As noted elsewhere, Madhya Pradesh is the main soyabean 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 Vindhya mountains at a height of 600msl (2000 feet), 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 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%. 2.8% respectively. 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. Food grains constitute 48.9% of cropped area and among the non-foodgrain like fiber, fodder, sesame, soybean and fruits, soybean 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 hectare which is the medium category. Sehore is a leading district in soyabean acreage and is also the first district where the ITC e- choupal was introduced in 2004.

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, vegetable and condiments grow well. While the area under fruits and vegetables registered high increases in recent decades, principal crops paddy, barely, pulses and oilseeds lost share. Thus, the cropping pattern is changing over time.

In Shimla, the elevation varies from 1600 msl² to 5670 msl and the entire district is mountainous with steep hills and forests. The climate varies from cold and dry zones to temperate and sub-tropical 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

² msl: Meters above sea level

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 degree 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 Simla and Solan are small at 1.1 and 17 hectare respectively.

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.

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 geographic area. It is bounded by Arunachal Pradesh and by Bhramputra River which separates it from Dhamaji direct. The soil is sandy to clayey and acidic. The climate is subtropical warm, humid with average 140-150 rainy days in a year. The district is bestowed with deep forests, beautiful landscapes, and bio-diversity 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 Tinsukhia is only 1.4. About 80% of farmers are small holders. Tinsukia is largest orange producing district in Assam. Recently, problems like improper planting materials, 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 inter-crop 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 1200-2200 mm. It is agrarian raising paddy, sugarcane, potato and commercial crops. Over 80% of farmers are small holders. 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.

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 Ganga. 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.

Situated on the left bank of the river Ganga, Murshidabad is a fertile district with wet-and- dry climate by Koppen classification and receiving 1722 mm of rainfall brought by the southwest 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 are important in the east. The district is famous for its history and culture, associated with the Nawabs and in particular with Siraj-ud- Daula who lost to the incoming British. The district is also known for other activities like tourism, silk textiles and craft work.

Murshidabad has a high population density of 1101 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 water-ways 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, grayish, ore- reddish soil mixed with lime and iron-oxide. The most important crop is *Aman* Rice³. *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 non-agricultural 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 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 hectares and 95% of the farmers operate less than 2 hectares 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.

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

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 sub-tropical climate supporting horticultural crops. The land is watered by the Ganga. 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 limitations, 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 Ganga plain. Agriculture is the main occupation supporting nearly 60% of the workers and the 57% of reported area in the district is devoted to cultivation. The rest is mostly put to non-agricultural uses or are barren. Forested land has a minimal share in land use. The cropping intensity is only 1.16. The population density is high at 1180 per square 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 hectares. 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 villages are not electrified.

Lichchi, Banana, Guava and Mango are four important fruits grown in the Bihar state of which about 5% of cultivated area is under 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 Chapter 6 section 6.7) the prospect of building up desired facilities is uncertain.

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. Area and production of potato is 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, with Pepsico's services being considered for emerging marketing channel. For Aonla, Pratapgrah 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 worker in Agra, Hathras and Pratapgarh districts are engaged in agriculture. The districts are densely populated, poor, and barring Agra, 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 2005-06 by providing support and materials. A regionally differentiated cluster approach is taken for development of horticulture crops. The region has a comparative advantage in horticulture. Four Agri-export zones (AEZs) are established for promotion of

mango and potato for exports. The U.P. Horticulture Cooperative 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, Mahendra Shublabh 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.

Potato, wheat, mustard and gram are major Rabi crops in Agra which has a semi-arid climate but a high irrigation intensity of 90%. Mahamayanagar or Hathras district in western part of Uttar Pradesh is basically agrarian in character with wheat, oilseeds and potato as the main crops. Small farmers account for account for respectively 98%, 90% and 80% of land holdings in Pratagarh, Agra and Hathrash but the region is endowed with 70 cold storages and a high irrigation intensity. Pratapgrah distract, in eastern Uttar Pradesh is highly rural and also poor. Of the total land, 75% is under agriculture but which is mostly irrigated. Wheat, paddy, pulses, 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

Sonepat, 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 as well as a response to the opportunities created by reforms. The affluence of Gurgaon and its location in the national capital region (NCR) creates 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 and Gurgaon and Yamunanagar 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 cases of an organized private retailer purchasing 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 southeast 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 tubewells but this privilege comes with serious water problems like ingress of brackish ground water and water logging 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.

Gurgoan, 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 semi-arid 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 life-line for the region. In general the state has to focus on water conservation and efficient allocation. In fact water use planning for Gurgoan 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 total population. Gurgoan 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 non-agricultural land use (69% area against 73% and 89% in the other two) and a larger share of non-agriculture 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 feature of the district's' agriculture though cropping intensity is relatively low in Gurgoan (1.4). Kurukshetra and Gurgoan have five regulated markets each and Sonapat has two. The share of total crops area under horticulture crops is 3.3%, 2.63% and 1.8% respectively in Kurukshetra, Sonapat and Gurgoan.

Jalandhar and Ferozpur 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 historic 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 vegetables 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 non-agricultural land use was more.

The average holding size is fairly large at 4.6 hectares in Jalandhar and 6 hectares 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 claim 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.

A4.1.2. 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 policy making 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 sub-categories 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 be private company controlled, NGO mediated, group based approaches, non-profit public promoted institutions and some may not even necessitate a physical market space at all but may call for a cyber-space only. Some details of market places that form part of the transactions investigated in the subsequent chapters are discussed in the Appendix A7.4 and A7.5. However these details are based only on our own field reports when available.

4. Appendix Tables

Table A4.1 : Agricultural Statistics on Sample Districts

District	State	Irrigation	Main Food Crop	Cropping intensity	Irrigation intensity	Average farm size	Small farm
Name	Name	Source	Name	Ratio	%	Hectare	%
Mushidabad	West Bengal	well,canal,tanks	Rice, Wheat,oilseeds,jute	2.35	70.0	0.74	95.43
Vishakhaptnam	Andhra Pradesh	canals,tanks,tubewells,dug wells	Rice, Maize	1.23	34.9	0.90	89.54
Bhagalpur	Bihar	well,canal	Paddy, 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	soyabean,Wheat,chickpea	1.63	62.1	2.71	55.11
Nashik	Maharashtra	well	rice,fruits,onion,	0.90	20.9	1.67#	74.00#
Tinsukia	Assam	No irrigation	Rice, Oilseeds, Vegetables	1.40	0.0	1.73	79.13
Nagaon	Assam	Other sources	Rice, Oilseeds, Jute	1.27	4.8	1.07	80.00
Agra	Uttar Pradesh	Groundwater	Wheat, Bajra	1.46	90.2	1.13	90.30
Pratapgrah	Uttar Pradesh	Groundwater	Wheat, Bajra	1.37	88.3	0.59	97.80
Hathrash	Uttar Pradesh	Groundwater	Wheat, Bajra	1.60	99.6	1.02	80.50
Sonepat	Haryana	Canal, Tubewells	Cereals, Fruits & Vegetables, Pulses	1.94	96.2	1.57	81.40
Kurukshetra	Haryana	Tubewells	Cereals, Fruits & Vegetables, Sugarcane	1.94	100.0	2.60	70.20
Gurgoan	Haryana	Tubewells	Cereals, Oilseeds, Fruits and Vegetables	1.39	93.4	1.57	83.30
Ferozepur	Punjab		Wheat, Rice, Cotton, Fruits	1.85	99.9	5.80	17.60
Jalandhar	Punjab		Wheat, Rice, Potato	1.78	98.2	4.56	25.00

Table A4.2: Population and Land use in the sample districts

District	State	Forest land (%)	Population	Rural	Scheduled caste	Scheduled tribe	Hindu	Below Poverty line**	Literate	Employed in Agriculture**
Unit			Density	%	%	%	%	%	%	%
Mushidabad	West Bengal	0.14	1102	87.5	12.0	1.3	35.9	31.9	54.4	56.7
Vishakhapptnam	Andhra Pradesh	39.53	343	60.1	7.6	14.5	96.2	11.1	60.0	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	70.0	39.3
Solan	Himachal Pradesh	11.21	259	81.8	28.1	0.7	95.0	7.9	77.0	39.3
Sehore	Madhya Pradesh	26.32	164	82.0	20.5	10.8	89.1	37.1	63.0	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
Nagoan	Assam	21.42	583	88.0	9.3	3.9	47.8	40	61.7	59.8
Agra	Uttar Pradesh	8.94	896	56.7	21.8	0.0	89.6	31.2	60.9	56.0
Pratapgrah	Uttar Pradesh	0.16	735	94.7	22.0	0.0	85.9	31.2	62.9	56.0
Hathrash	Uttar Pradesh	1.22	721	80.2	25.2	0.0	89.4	31.2	64.1	56.0
Jalandhar	Punjab	2.10	747	52.5	37.7	0.0	96.8*	6.4	73.9	47.7
Ferozepur	Punjab	2.24	328	74.2	22.8	0.0	98.3*	6.4	45.3	47.7
Sonepat	Haryana	0.40	603	74.9	18.1	0.0	96.5	8.3	72.8	44.9
Kurushetra	Haryana	0.38	540	73.9	20.5	0.0	98.2*	8.3	69.9	44.9
Gurgoan	Haryana	2.96	717	77.8	11.3	0.0	62.2*	8.3	62.9	44.9

Notes to tables 7.1 and 7.2: * Hindus include Sikhs in Punjab Haryana. **Figures are at state level. # Figures are for 2001 as survey was not conducted in 2005-06 and @ figures are from Economic Survey of Bihar 2009-10, District agriculture office, Government of Bihar: Cropping intensity = Total crop area/Net sown area, Irrigation Intensity= Net irrigate area/Net sown area, Small farms are up to 2 hectares in area. Source of data for Population statistics (A7.2) is from census 2001, Forest land, Cropping Intensity and Irrigation Intensity are from Ministry of Agriculture (Website, 2008), data on employment in agriculture from NSSO 64 th round, Employment and Unemployment Situation in India, 2007-08 and data on average farm size and small farms from Agricultural Census 2005-06 (website).

Appendix 4

A 4.2 (a). Crops covered under Market channels studies: Fruits

Mango (Bihar)

Mango is a tropical fruit tree native to India, from where it spread to other part of the world. Considered by many as delicious, the fleshy stone fruit is highly perishable. Initially, in 17th century, mangoes had to be pickled before export due to the lack of refrigeration. 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 also. 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 color with a resinous sweet smell. Chemicals in the peel and 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. The current world market is dominated by a variety called Tommy Atkins. Initially developed in Florida United States, this variety is known for it high productivity, diseases 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 South east 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.

The banana fruit has a protective outer layer or skin, an inner edible portion and seeds diminished to tiny specks and nearly non-existence. 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 19th 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 non-seasonal crop with year round availability.

India is the topmost banana producer (25%) in the world followed by Philippines, China and Ecuador. The major banana producing states of India are Tamilnadu, Maharashtra, Karnataka, Gujarat, Andhra Pradesh, Assam and Madhya Pradesh. The plant thrives in humid climate with a temperature between 25-35°C. Most soils are suitable provided they are deep and well drained. Planting on plowed land both by propagation of suckers or by tissue culture is done in India. Banana is inter-cropped with soyabeans and other crops. Growing of organic banana would avoid exposure to chemicals right from the planting material to the final post harvest 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 vitamins C and minerals and is used for producing Aurvedic 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

Tamilnadu 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 Pratpgarh, the studied district and well known brands (Dabur, Baidyanath, Patanjali) result from processing the aonla, Chavan Prash 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, 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 auyurvedic 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 anti-oxidants 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 dyeing 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 Tamilnadu.

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 Philippines. It was taken to North Africa and South Europe in the middle ages and then to United States 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-Anglon, 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, 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 other. The average orchard is 2-120 bighas in size.

Tinsukia is largest orange producer district in Assam. Recently improper planting material, poor management and problem called "Citrus Decline", caused poor health of orchards and moves 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 inter-crop 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 south-west Asia. It is warm season crop, requiring a long growing period to developed from seed to marketable fruit. It is sensitive to cold temperatures. The fruit is rounds, firm, 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 melon, widely also known as cantaloute are produced in hot dry conditions. The plant is annual and needs light watering. Sandy and light soil and specially dry river bedes are suited for their cultivation although manuring and fertilizer used are essential for healthy of the plant. Reach 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, 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.

A 4.2 (b). Crops covered under Market channels studies: Vegetables

Potato (Assam, Uttar Pradesh, Punjab)

Most of the potatoes were 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 17th 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 Ferozabad, 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 got from Regional Agricultural Research Station , Sillonggonj 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 Nanagaon in Assam, contributing to 5% of the state production. Ideal time for sowing is October to November.

Potato is important among the vegetable grown in Punjab and Jalandhar along with 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. However actual cultivation of onion possibly started 2000 years later along with that of leeks and garlic in ancient Egypt where people even worshipped onions. Ancient athletes of Greece and Roman gladiators ate onion for strength, doctors prescribed onions for various weaknesses and onions were even used as means of exchange in ancient times. 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 anti-cholesterol, anti-inflammatory and anti-oxidant properties and be effective against common cold, heart disease, diabetes, osteoporosis, and head and neck cancer. Onions act as irritants to eyes. China, India. 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 while 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 hours 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 1998-99 and the ECA was invoked. In 2004-05 onion was taken out of the list of essential commodities by the Ministry of Consumer Affairs. India is 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 neighboring 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 meongena* is actually a fruit that is widely consumed across the world as a vegetable. The word brinjal is possibly derived from Portugese 'beringela' but the vegetable has many alternate names like aubergine used in France, eggplant used in 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 sub-continent 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 that can be purple (aubergine, Baingan) or yellow and white (egg plant of the 18th 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 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 anti-oxidants 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 1Kg 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 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 increase shelf-life

China, US, 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 anti-oxidants. 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, prostate, urinary tract and breast cancers, protection from UV rays and is good for 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 16th century and came to be cultivated in Britain and north Europe subsequently. Today global producers of this vegetable include the United States, 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 anti-oxidant, vitamin C, vitamin K, vitamin B5 minerals and Folate though there may be some adverse health complications for individuals susceptible to gout and goiter. In India cauliflower is a common item of many cuisines as 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.

Soyabean (Madhya Pradesh)

Originated in China and East Asia many centuries ago, the legume Soyabean is now grown in crop rotations worldwide due to advantages like geographical adaptability, nutritional value (it is protein rich) and 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 USA (35%), Brazil (27%), Argentina (19%) and China (6%). India contributes 4% of the world soyabean production.

Soyabean is grown in climates with hot summers and on a wide variety of soils Soyabean cultivation has incessantly gained popularity for use as health food, snacks, feed and even bio-diesel but environmentalists have blamed the spread of its cultivation in Brazil for destroying Amazonian rainforests but Soyabean can be cultivated using organic methods.

Fat-free soyabean 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. Soybean 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 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, Shajahanpur, Sagar, Dewas, Rajgarh and Sehore. Soyabean 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 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.

Appendix 4

A 4.3 (a). Markets in Emerging Channels

Rythu bazaar in Andhra Pradesh MVP Colony: Direct marketing

Farmer 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 district 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 Vishakhapatnam district, MVPRB is established on 2 acres of government land and is well connected by roads. An initially supported fund,

MVPRB has now become self-sufficient. It was awarded a rolling cup for “The Best Rythu Bazaar” during 2002 by the state Government.

The MVPRB has 114 stalls, out of which 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 only 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 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 Vishakhapatnam 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 25000 potential buyers comes to MVPRB on weekdays and 4000 people come during the weekend so that the customer arrival is well distributed. The MVPRB employs staff likes 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 as by a team of Tahsildar, Horticulture Officers/Agriculture officer 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 land holding, 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 six month from the date of issue though renewal is possible within about 15 days of expiry. No seller will be 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 will be allowed to sell

only vegetables grown by them although Self-help-Groups (SHGs) are allowed to sell vegetable 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 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. The prices are 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 Tinsukhia 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 talking 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 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 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 3 cold storage facilities in Shimla and with the other operator major, the Indian Railway Board (IRB), 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 enroll 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. 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 Lays potato chips, Kurkure. More than 1,50,000 people were economically associated with the company. PHIPL provides the extension services and inputs like seeds, fertilizers, 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, (ii) Farmers bring the potato to cold storages where the staff purchase the potato. All the purchased quality of potato are sent to its processing units located at Patiala, Pune and Kolkata for the preparation of Chips, Lays, Uncle Chips and Lahar Potato Bhujia. All these products are consumed within country. The export of processed product has been not 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.

Kislay 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 Patty, Fancy Bazaar, Guwahati and its processing unit at Lakhra Chariali in Gauwahati. A 'Buy-back' agreement for potato cultivation, the first of its kind in Nagaon district as well in the North East India, was initiated in October, 2006 with the assistance of State Agriculture Department.

In a tri-partite arrangement, A Non- Government Organization (NGO) viz. - Bengena –Ati Surovi Gram Vikash Samity has made an agreement with the M/S Kislay Snack Products (KSP) to buy special processing variety of potato seeds viz. - Kufri Chip Sona-I, II, LR-1533, Atlanta etc. 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 includes land preparation, seeds,

irrigation, manures and fertilizers, plant protection measures, grading, packing, loading etc. 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 Fruits products in Uttar Pradesh

Established in 1987-89 and located conveniently near the main road, Satkar Fruits 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 1990-91. 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, Baisyanath, 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 Fertilizers and Petro-Chemicals Limited (DFPCL)

DFPCL was initially specialized in manufacturing fertilizers but the company has diversified through its Agribusiness and Farming Solutions division (ABFS) 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 'Saarrthie' 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* centers in Maharashtra, namely Nashik, Aurangabad, Pune, Solapur, Sangli and Ahmednagar.

Each *Saarthie* extension center 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 post harvest 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 services customers from middle-east, Europe and 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 Saarthie on payment of a lifetime membership fee and have 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, 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-chopul in Madhya Pradesh

The e-choupal initiative of the large company ITC Ltd, providing farmers access to 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 India Limited, ITC started producing cigarettes but later diversified extensively into paper board, IT, packaging, Hotels, Food and agro-business. The ownership of the company was gradually Indianised, it's name changing to India Tobacco Company Limited, in 1970 and than to ITC limited in 1974 although the British major BAT has substantial holding even now.

In 1990 ITC took advantage of it's agri-sourcing competency to set up the agri –business 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*'. 2002, *Ashirvad atta* in 2003, *Sunfest* biscuit

segment, Bingo snacks, so that 8 years down the line the food business became sizable with 200 products and 6 brands, growing market share, impressive distribution. ITC 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 agri-business 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 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 who so ever they wish to, the company also purchases products leading to a rise in demand.

With ITC's enter as a purchaser, farmers, even who are not selling to ITC, gain and find mandi rates more favorable 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 internet via VSAT, a printer and power backup and is managed by a 'Sanchalak.' This has meant over coming 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 soybean prices in Chicago Board of Trade from his or her 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 standered 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, drinking water. There is no arrangement for staying over night and no warehousing facility.

Mother Dairy

Mother Dairy was set up in 1974 under the Operation Flood Programme 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, 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 Retail Limited (RIL) and is the first foray into retailing by the \$25 billion giant called Reliance India Limited (RIL). 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 aim to bring high quality and fresh vegetables to consumers at affordable prices. The Reliance Retail supply chain in the Ranchi district links a few thousand farmers through its collection center 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 centers. 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 Capita Region (Delhi and designated surrounding areas) by opening a numbers of food stores that compete with push-card, venders and Kirana stores. Stores in Noida, Gurgoan, Gagiabad and Faridabad sale fruits, vegetables, grocery and diary products (source from peri-urban farm land). All the stores are owned by the company but varied in size and format. A typical RF stores is managed by a 'professional

manager' and several staff members. Stock keeping unit occupy 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 sprouse. 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 uncertained. The RF procures high quality (Grade A) fruits and vegetables and higher price are paid for better quality products. The task of sorting and grading is under taken by farmers prior to delivery and the products are only visual test for damage, quality standard and size at the CC. Customer arrival are measure 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.

A4.3 (b). 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 12th 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 hectares. 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, water etc. 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 a 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 Pratapgargh, 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 six days in the week, it offers amenities like farmer guest houses, bank, veterinary hospitals, canteen, shed, drinking water and lighting of the parties. Cleaning, grading and owing 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 a 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.

Poorna market in Andhra Pradesh

Among the four regular markets in Vishakhapatnam, Poorna Market is the oldest one with one multi- storied building, 94 stalls, three gates and small space for parking. It has an experience of 60 years in dealing with all agricultural commodities under the supervision of Grater Visakha Municipal Corporation. There is no cold storage facility and sellers have to store their products in stalls. Retailers purchase vegetables from whole sellers or Commission agents in Gyanapuram wholesale market, 3 km away from this market. The market has small lanes, electricity, water supply, sanitation while banking facility is located outside the market. Seller may have land-line telephone or mobile facilities.

Appendix Tables 5

Table A 5.1: 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	Brinjal	DM	NONE	Rythu Bazaar, direct to consumer	No private intermediary
Assam	Orange	DM	None	FGROUP, Non profit, 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 only	Nonprofit, no private intermediary	Nonprofit organized
Jharkhand	Cauliflower	RTL	Reliance only	Single organized intermediary	Large corporate
Haryana	Muskmelon	RTL	Reliance only	Single organized intermediary	Large corporate
Haryana	Tomato	RTL	Reliance only	Single organized intermediary	Large corporate
Uttar Pradesh	Potato	CONTR	PepsiCo only	Single organized intermediary	Large corporate
Uttar Pradesh	Aonla	CONTR	Satkar Foods only	Single organized local intermediary	Local corporate
Assam	Potato	CONTR	Kishalaya Food only	Single organized local intermediary but NGO intermediated	Local corporate

Table A 5.1: Intermediation in Emerging marketing channels in sample (continued)					
State	Crop	Channel	Intermediary	Nature	Involvement
Punjab	Potato	CONTR	PepsiCo only	Single organized local intermediary but public intermediation	Large corporate
Himachal Pradesh	Apple	CMI	Adani and traders	Sales too private traders via single organized corporate intermediary	Large corporate with private traders
Madhya Pradesh	Soyabean	CMI	ITC and traders	Sales to traders via e-portal of organized corporate intermediary	Large corporate with private traders
Maharashtra	Onion	CMI	DFPCL and traders	Sales to traders via organized intermediary	Large corporate
Maharashtra	Pomegranate	CMI	DFPCL and traders	Sales to traders via organized intermediary	Large corporate
Bihar	Mango	TRADER	Local traders	Sales to traders via local trader group	Private traders only
West Bengal	Arum	TRADER	Local traders	Sales to traders via local trader group	Private traders only

Table A5.2: Gross marketing cost with respect to Farmer's rupee and User's rupee

		Channel			
		Emerging	Traditional	Emerging	Traditional
		Ratio to farmer rupee		Ratio to user rupee	
Direct marketing					
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
Corporate marketing intermediation					
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	Soyabean	0.19	0.29	0.16	0.23
Marketing to processors on contract					
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
Marketing to organized retailer					
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
Marketing by local traders					
WB	arum	0.97	0.21	0.49	0.17
Bihar	mango	1.17	1.27	0.51	0.52

Source: Computed from survey data.

Table A5.3 : Gains from Emerging channel to agriculture as 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
Punjab	Kinnow	1.20	1.21	0.99	1.11	1.28	1.42
Bihar	Mango	1.60	1.39	0.95	0.91	3.50	3.16
Himachal Pradesh	Tomato	1.07	1.09	1.02	0.99	1.16	1.18
Jharkhand	Cauliflower	1.10	1.18	1.06	1.11	1.21	1.35
Haryana	Muskmelon	1.18	1.10	1.31	1.04	1.38	1.43
Haryana	Tomato	1.20	1.90	1.00	0.99	1.60	1.58
Uttar Pradesh	Potato	1.05	2.13	1.00	1.01	1.22	1.23
Uttar Pradesh	Aonla	1.07	1.06	1.00	1.02	1.30	1.33
Assam	Potato	1.49	1.04	1.00	0.95	3.99	3.77
Punjab	Potato	0.00	0.88	0.73	1.65	0.73	1.20
Himachal Pradesh	Apple	1.04	1.64	0.95	1.12	1.11	1.21
Madhya Pradesh	Soyabean	1.09	1.71	1.11	1.05	1.16	1.23
Maharashtra	Onion	1.75	3.16	1.13	1.92	2.24	0.43
Maharashtra	Pomegranate	1.72	2.16	1.09	0.86	1.47	1.26

Note: West Bengal is excluded for lack of comparability. Source: Computed from survey data

Table A 5.4 : Participation of the deprived farming section in Emerging channels

State	Crop	Small Holder	Backward Classes	Not owning mobile phone	Not owning motorcycle	Not owning pumpset
		%				
Andhra Pradesh	Banana	1.70	0.00	0.00	1.63	0.57
Andhra Pradesh	Brinjal	1.50		0.00	0.84	
Assam	Orange	0.65		1.00	0.97	0.95
Punjab	Kinnow	1.41	0.75	1.43		1.47
Himachal Pradesh	Tomato	0.82	0.90		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	Soyabean	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
Averages of Channels						
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.

Table A 5.5: Other benefit derived from traders in Traditional channels

States	Crops	Farmers reporting advantages (%)				Received Price information
		Received loans	Received Input advances	Payment recovery problem	Assured sales	
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

Note: NR is not reported. Source: Computed from survey data.

Action taken Report on the comments on draft report and its presentation

1) Comments made at the presentation at Krishi Bhavan.

The findings of the study were presented by the coordinator at a meeting of the senior officers of the Ministry of Agriculture chaired by Secretary A&C on 18th December, 2012. The major suggestions were as follows:

- a) To make the report more focused towards impacts
- b) To make distinctions in the findings between fruits and vegetables.
- c) To note that market for onion in Maharashtra was already large and developed.
- d) To bring out the specificities of the individual cases of the channels that get hidden in the averages presented in the chapter summarizing the impacts.

Action taken:

In light of the suggestions the report has been revised and substantially condensed. The final report provides the major impacts of the emerging channels as noted from the empirical evidences reported by the investigating centres.

2. Comments based on peer review at ISEC

- a) A majority of the comments relate to editing of the texts and tables.
Action taken: Edited as suggested for the final report.
- b) References and quotation of literature required in some cases.
Action taken: This has been done.
- c) Replacing the word 'Economics' with 'Efficiency' in sub-heading in chapter 3 (Chapter 4 in draft report).
Action taken: This has been done
- d) A note on categorization of farm sizes is required.
Action taken: This is done.
- e) Appendices to be placed after reference section at the end of the report.
Action taken: This is done.
- f) The subtitle in the title page is not clear
Action taken: This is the original project title assigned by the Ministry and signifies the merger of two separate proposals. To avoid confusion and maintain consistency with the AERC reports this same phrase is now provided as the title.