Implications of Competition Reforms in Wheat and Bus Transport Sectors for Consumers and Producers in Select Indian states

CREW Project

CUTS International

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#1501

Contents

List of Figures

Appendix

List of Tables

Appendix

Acknowledgments

CUTS is implementing a project entitled, 'Competition Reforms in Key Markets for Enhancing Social & Economic Welfare in Developing Countries' (CREW Project), in four countries: Ghana, India, Philippines and Zambia, and across two common sectors: Staple Food and Bus Transport with the support from DFID (United Kingdom) and BMZ (Germany) facilitated by GIZ (Germany). One of the main goals of this project is to demonstrate the benefits of competition reforms for consumers and producers, so that greater attention and support can be provided to this issue by policymakers based in developing countries.

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Rijit Sengupta
Project Coordinator, CREW Project

Abbreviations

AAY: Antyodaya Anna Yojana
AMC: Ahmedabad Municipal Corporation
AMTS: Ahmedabad Municipal Transport Service
APL: Above Poverty Line
APMC: Agriculture Produce Market Committees
APP: Agricultural Price Policy

BCLL: Bhopal City Link Limited
BPL: Below Poverty Line
BRTS: Bus Rapid Transport System
BSFC: Bihar State Food Corporation

CAGR: Compound Annual Growth Rate
CCI: Competition Commission of India
CIP: Central Issue Price
CREW: Competition Reforms in Key markets for Enhancing Social & Economic Welfare in Developing Countries
CWC: Central Warehousing Corporation

DCR: Diagnostic Country Report
DFID: Department for International Development
DMI: Directorate of Marketing & Inspection
DPS: Decentralised Procurement System

EXIM: Export-Import

FCI: Food Corporation of India
FDI: Foreign Direct Investment
FIIs: Foreign Institutional Investors
FIPB: Foreign Investment Promotion Board
FPS: Fair Price Shops

GATT: General Agreement on Tariffs and Trade
GCS: Gross Cost System
GDP: Gross Domestic Product
GPS: Global Positioning System
GSRTC: Gujarat State Road Transport Corporation

IPRs: Intellectual Property Rights
PPV&FR: Protection of Plant Varieties and Farmers Right
JNNURM: Jawaharlal Nehru National Urban Renewal Mission

MoRTH: Ministry of Road Transport and Highways
MPSRTC: Madhya Pradesh State Road Transport
MRTP: Monopolistic and Restrictive Trade Practices
MSP: Minimum Support Price
MTPs: Monopolistic Trade
MVA: Motor Vehicle Act

NBS: Nutrient Based Subsidy
NCAER: National Council of Applied Economic Research
NCS: Net Cost System
NFSA: National Food Security Act
NPS: New Pricing Scheme
NSC: National Seed Corporation
NUTP: National Urban Transport Policy
NWR: Negotiability of Warehouse Receipts

OGL: Open General License

PACS: Primary Agricultural Credit Societies
PDS: Public Distribution System
PEG: Private Entrepreneurs Godown
PPP: Public Private Partnership
PPV&FR: Protection of Plant Varieties and Farmers Rights
PRIs: Panchayati Raj Institutions
PWD: Public Works Department

RAF: Route Allocation Fee
RajFED: Rajasthan State Cooperative Marketing Federation
RIDF: Rural Infrastructure Development Fund
RKVY: Rashtriya Krishi Vikas Yojana
RPDS: Revamped Public Distribution System
RSSC: Rajasthan State Seed Corporation
RTA: Road Transport Authority
RTC: Road Transport Corporation
RTPs: Restrictive Trade Practices

SEBI: Securities and Exchange Board of India
SFCI: State Farm Corporation of India
SPV: Special Purpose Vehicle
SRR: Seed Replacement Rate
SRTUs: State Road Transport Units
SWC: State Warehousing Corporation

TMC: Terminal Market Complex
TPDS: Targeted Public Distribution System
TRIPs: Trade Related Aspects of Intellectual Property Rights

UTPs: Unfair Trade Practices

WDRA: Warehousing Development and Regulatory Authority

Executive Summary

A holistic national competition policy that effectively addresses anticompetitive dimensions of government policies and regulations is yet to be adopted in India. Anti-competitive practices are handled through the Competition Act 2002 and various sectoral regulatory laws in the country. Enhanced harmonisation of government policies and regulations, formulation of a framework for competition impact assessment of various government policies, practices and regulations, greater competitive neutrality between public and private market players are some of the major benefit that can accrue from adoption of a national competition policy in the country.

This report, the Diagnostic Country Report (DCR), is a product of the diagnostic or the research phase of the project entitled *Competition Reforms to Enhance Social and Economic Welfare in Developing Countries* (CREW). The project is being implemented by CUTS Centre for Competition Investment & Economic Regulations with support from DFID, UK and BMZ through GIZ, Germany. The three-year project aims to demonstrate the implications of competition reforms on producers and consumers in order to attract the attention of policy makers in developing and least developed countries towards effective implementation of competition.

The project is being implemented across four countries, namely, Ghana, India, the Philippines and Zambia, where the common sectors are bus transport and staple food. The project countries were selected keeping in mind the need to capture contrasting reforms and their implications across developing and least developed countries, whereas the sectors were selected because of the high impact they have on the common man.

The Diagnostic Country Report (DCR) for India was developed to unravel competition concerns in two selected sectors (wheat and bus transport) across 4 states in India. It aims to assess the impact of various competition/market reforms on producers and consumers, and overall competition environment in these states. This enables exploring the impact of a number of important administrative/legislative actions, as well as draw out important comparisons and lessons – which is the purpose of the DCR.

The selection of the policy measures for impact analysis was based on (a) level of impact of policy measures and ensuing market structure on welfare and competition, (b) the time period when the reform measure was undertaken and whether welfare and competition continues to be affected significantly by it, and (c) whether some degree of differences exists across states in terms of policy design and/or its implementation to enable capturing diversity across states. The analytical framework closely followed the DFID competition assessment framework and drew elements from Porters' five forces of competition. The data was sourced both from secondary and primary sources. Secondary data sources included largely government published databases, policy papers, reports, legislations, etc., while primary data collection comprised of conducting perception survey of stakeholders[1] which were supplemented by in-depth interviews with experts, policymakers, service providers, among others at the national level and also across the four states.

[1] Staple food sector: wheat consumers and wheat farmers; bus transport: intra and inter-city passengers.

Staple Food (Wheat) Sector

In case of the staple food market, the study examines the ***wheat*** submarket across two states: ***Rajasthan*** and ***Bihar***. The selection of wheat as the staple crop was in view of recent lifestyle changes with rising wheat consumption, as compared to rice across large parts of the country. The selection of the two states was based on factors such as: diversity in agricultural conditions such as agro-climatic zones; agricultural sector performance; and agricultural policy differences over time.

All the five nodes of wheat supply chain under study – production (fertiliser and seed only), agricultural marketing, procurement, warehousing and distribution – were explored to identify the reforms undertaken in each of these nodes. Some of these markets such as fertiliser, warehouse and distribution were observed to be predominantly under the control of the Central Government with limited role for the State government. Consequently, the study focused on the areas where some level of State policy induced competition/market reforms and their implications on welfare could be observed in either or both the States. Thus, the DCR especially covers three areas: (a) the seed sector reform – success in Bihar with improved farmer welfare and private entry, (b) the contrasting reform experiences in agricultural marketing and (c) the recent changes in procurement system. The observation on these are summarised below:

Production - seed

At the national level, liberalisation moves since the mid-80s in the policies of licensing, seed, industries, export-import, intellectual and property rights, etc. facilitated vibrant private participation. Entry barriers have been largely abolished. Considerable competitive rivalry and threat of substitution also exists among firms active in same set of crops. Private sector is estimated to account for 80 per cent of the seed sector turnover at the all India level. However, with agriculture being a joint area of responsibility, where both the Centre and State governments legislate, the benefits of policy liberalisation at the national level accruing to the states varied considerably. This can be attributed largely to the differences in state level policies as well as administrative efficiency.

Seed sector reform was a key element of the Bihar Agricultural Road map 2008-12, which focused on self-sufficiency in seed production through enhanced role for private players to boost production and marketing. The plan outlay for agriculture as a whole increased forty times from Rs0.2bn to Rs8bn over the period 2005-13. Public support was provided through improving seed infrastructure by strengthening Bihar Rajya Beej Nigam; Bihar State Seed Certification Agency; Seed Multiplication Farms; etc. Various schemes like Mukhyamantri Tibra Beej Bistar Yojana, Beej Gram Yojna, Seed Production on Government farms, Certified Seed Distribution on Subsidy, etc. were also introduced under the 'Road map'. It also envisaged significant role of private players and extended significant public support and facilitation to attract private investment.

As a result, seed production in Bihar increased seven fold between 2005-06 and 2009-10. The encouragement given to the private seed producers under the road map also increased their numbers from 1 to over 10. The farmers surveyed during the field-work in Bihar (Vaishali and Saran districts) reported overall improvement in access, better reliability of supply, quality improvement and better affordability of seeds. Higher seed production and better

accessibility also led to an increase in seed replacement rate[2] in wheat and resulting yield. However, despite commendable progress overall, some of the farmers surveyed complained of getting a lower yield than expected, which may be due to either the quality of seeds or agricultural practices or both. Complaints of being charged higher prices were also received from some of the respondents. These are some of the areas which need further attention to improve farmers' welfare.

In contrast to the positive impact of seed reforms in Bihar, the Seed Plan of Rajasthan had little impact on the seed sector. The Rajasthan Seed Plan did not have a holistic approach like that of Bihar. Though the plan did set certain targets on seed production and seed replacement rates to be achieved, it seem to have lacked proper direction and resources. No significant reform initiatives were taken as part of the seed plan to restructure the state entities in charge of seed development, seed certification, etc. The seed plan also failed to make any commitment on financial resources or provide an outline of the policy to be followed to attract greater private participation. This lack of urgency or focused planning may be partly attributable to the fact that Rajasthan is self-sufficient in seed production, unlike Bihar (which prompted the Bihar state government to include seed as a key element of its 'Agriculture Road map'. Rajasthan also scored significantly better relative to Bihar in terms of presence of private seed developers.

The Bihar experience thus highlights the positive welfare impact that reforms in the seed sector can have on farmers, especially small farmers. The contrasting experiences of Rajasthan also highlight the importance of a holistic state level seed policy strategy to bolster the seed supply chain.

Agricultural marketing

Organised agriculture markets were introduced under Agriculture Produce Market Committees (APMCs) in the 1970s. The main objective of setting up the APMCs under public initiative was to protect farmers from exploitation by intermediaries and traders. It was envisaged that a public controlled market place would be able to set standard market practices limiting market manipulation and thereby ensure systemic transparency and reduced price volatility. This was expected to help farmers in better price realisation and timely receipt of payments. However, most of the expectations have been belied by real life experience due to widespread presence of competition distortionary policy elements such as denial of private investment in developing market yards, complex licensing requirements for market participants accompanied by restrictive clauses and limited issuance, inadequate infrastructure, etc. Over time these have led to limited number of markets in any geographic area, along with artificial restriction on the number of market players. As a result, rather than improving efficiency, over time these regulated markets have degenerated into restrictive and monopolistic markets, contributing towards high transaction cost, etc.

With agriculture being a subject of the state legislature under the Indian Constitution, the APMC reform experience since 2003 has been quite divergent across states. While Rajasthan went aggressively to introduce legislative provisions for private markets, contract farming and direct marketing, Bihar went for a complete repeal of the APMC Act. However, despite these completely diagonal approaches of the two states, the impact on private participation and competition has been very limited.

[2] 'Seed Replacement Rate' (SRR) is the percentage of area sown (out of total area of crop planted) in a particular season by using certified/quality seeds

Despite Rajasthan making provision for private markets, contract farming and direct marketing as envisaged in the model APMC Act drafted by the Central Government, ground level progress has been disappointing. No farmer-consumer market is operative in the state and only 2 licenses have been issued for private markets. The failure has been ostensibly due to factors such as (a) heavy security deposit requirements, (b) problems in land availability/acquisition or changing usage pattern, (c) minimum distance required from existing APMC markets, (d) logistical issues, like assured water, electricity availability and/or road/rail connectivity, (e) large investment with low incentives (20 per cent of fees), etc. The experience of Rajasthan again highlights the need for bringing harmony across multiple policy verticals (both legislative as well as administrative) to have an impact on the sector.

In sharp contrast to Rajasthan, APMC Act was repealed in Bihar in 2006 in a bid to abolish the widespread systemic corruption that had flourished under the APMC model. Even though the market infrastructure created under APMC continues to operate even after repeal of the Act, their operations now are unregulated as far as provisions of erstwhile APMC Act are concerned. There is no government oversight of the trade practices. Moreover, withdrawal of state was also accompanied by decline in public investment in agricultural marketing infrastructure. Even though legislative freedom was available for private entry, the state government failed to develop a holistic attractive investment environment by its neglect of related policy parameters. Associated support initiatives such as gap financing, easier credit availability and lower cost, good connectivity, reducing administrative red tapes, etc. were also marked by their absence. Factors such as predominance of marginal and small farmers in Bihar, with average landholding size barely a third of national average at 0.39 hectare, also acted as a considerable impediment to popularising direct marketing or contract farming.

Analysis of the divergent experiences of these two states show the limitations of the 'Model APMC Act' in ushering private investment, and at the same time brings out the fact that complete abolishment of APMCs as demanded by many may not be the appropriate answer. The experiences across both the states show that reforms limited to APMC Act allowing private entry will not automatically translate into private investment in absence of easy availability of land or proper infrastructure such as road, electricity, water, credit, etc. This highlights the need for a harmonised multi-pronged policy approach encompassing land, infrastructure, connectivity, administrative reform, credit, investment, etc.

Moreover, local conditions such as size of farmers, and marketable surplus also needs to be incorporated while planning the agricultural marketing network. As the Bihar experience shows, a system of a centralised market may not be appropriate when the farming community is dominated by marginal/small farmers with low amount of marketable surplus.

Procurement

The Agricultural Pricing Policy (APP) emerged in India in response to the need to address food scarcity on the one hand and to protect farmers from price fluctuations caused by bumper crops, international price movements as well as scrupulous practices by market players on the other. This led to the buffer stock maintenance norms and procurement at government initiative at minimum support price (MSP) for farmers.

On the procedural side, procurement involves only public agencies, and number of such agencies active in a particular region is limited. Government regulation also limits the number of procurement centres in a particular area. The procurement prices (MSP) are also

pre-decided. As such, there is limited scope for cross-agency competition in any particular location. Consequently, farmers are limited to having no choice when selling to government.

On the price side, declaration of MSP also has a distortionary effect on market price discovery. Considering the fact that food grain procurement by the government often involves purchasing up to $1/4^{th}$ to $1/3^{rd}$ of the total production, the declared MSP considerably impacts the open market price discovery mechanism. Moreover, the hikes in MSP in the recent times have necessarily altered it into an instrument of subsidy from its originally designed function of acting as a price floor. Even this 'subsidy' is highly inefficient since the marginal and small farmers generate little marketable surplus and generally remain outside the outreach of the procurement network. Consequently, the benefits of MSP largely flow to the better off larger farmers. The third distortionary effect of the MSP policy is its indirect impact on crop selection by farmers – the series of hikes under political patronage has generated a sense of assured profitability in sowing MSP covered crops.

In Bihar, from the Ravi Marketing Season 2013-14 onwards, the number of procurement agencies for wheat was reduced from 7 to only Primary Agricultural Credit Societies (PACS) and Bihar State Food Corporation (BSFC). In contrast to Food Corporation of India (FCI) and similar other agencies with limited outreach, PACS in Bihar enjoyed considerably larger local presence through a formidable network of 8,463 centres in 2012-13. As such, the migration held considerable promise for greater access for marginal/small farmers to government procurement. However, politicisation of PACS and lack of administrative reforms to address bottlenecks like tedious and time consuming paper work, no system of periodic performance audit, bias towards paddy, etc. seem to have limited the ground level impact of the systemic shift. Only 31 per cent of farmers surveyed experienced any improvement in market access, with similar 29 per cent experiencing increased price realisation. As a result of such administrative impediments, a 'broker' segment has emerged – which purchases from farmers at a discounted price and sells it to PACS. However, marginal/small farmers surveyed seem to be happy with the arrangements as they save on transportation and get ready cash for their produce.

While procurement activity to support food security or stabilise prices may not be abolished at the present stage of economic development, overall welfare may be enhanced by doing away with the public monopoly like condition in procurement. The sector may be opened for private entry, allowing larger number of procurement agencies and centres closer to the centres of production. Improved accessibility, with potential for better price realisation, is likely to be considerably beneficial for marginal and small farmers. The selection of the agencies may be done on the basis of open bidding, with the one asking for the lowest commission margin being the winner. The buffer stock policy also needs a relook considering the continued surplus stock maintenance, sometimes double the stipulated minimum holding norm.

Way Forward

Need for a holistic seed policy

Comparative performance of Bihar and Rajasthan seed policies highlight the need to identify and address bottlenecks in each of the nodes in the seed supply chain. Whereas seed policy in Bihar took this into account, the Rajasthan seed plan largely stopped at mainly setting targets. It failed to plan and integrate the critical requirements such as fund allocation, infrastructure development, developing and providing incentives for private players and evolving the role of the incumbent State Seed Corporation. Thus whereas Bihar succeeded in achieving higher

seed production and seed replacement rates (SRR) – implying greater uptake and usage of 'certified seeds', no significant impact could be observed in case of Rajasthan.

Need to look beyond APMCs to improve agricultural marketing

To attract private participation in agricultural marketing, the bottlenecks created by land policy (namely, cumbersome process of land acquisition, land ceiling, change in land use, etc.), finance policy (unavailability of credit on attractive terms), infrastructure policy (inadequate transport connectivity, unavailability of assured electricity, water supply, etc.) needs to be urgently addressed. It also needs to be recognised that though APMC reform/repeal enables private entry, the same will not materialise on the ground unless adequate return can be assured.

More emphasis on localised procurement system

There is a need and scope to move away from traditional procurement system as envisaged under the APMC regime. As the survey results show, marginal and small farmers remain largely outside the reach of the organised procurement system. As such, they fail to take advantage of benefits such as price assurance, payment guarantee, etc. The Primary Agriculture Credit Societies (PACS) system in Bihar can prove to be a 'good practice' case that is able to benefit small farmers, if political undercurrents are somehow removed and PACS are empowered to be apolitical institutions 'of the farmers, by the farmers and for the farmers' that they were originally designed to be.

Bus Passenger Transport Sector

The transport policy since independence has favoured public control over the sector. Faster development of the sector in the face of limited investment capacity of private enterprises was the main consideration. State control was also envisaged to better protect the passengers' interest in terms of quality and cost of services. The Road Transport Corporation (RTC) Act of 1950 enabled the state governments to establish publicly controlled State Road Transport Corporations for the whole, or part of the state. The Motor Vehicles (MV) Act on the other hand enabled nationalisation of road transport services in general across the state or part of services or area or routes. This power of reservation in favour of state road transport undertakings (SRTUs) given to the states reduced the scope of private participation in the sector. However, with actual implementation differing from state to state, the ground condition also showed significant variation.

The SRTUs performed reasonably well in the initial three decades, but deteriorated considerably thereafter due to varied factors such as operational inefficiency, political interference, rising competition from private players, among other such factors. The resultant deterioration in financial health of the SRTUs, slowdown in fleet expansion even in the face of rising demand, and ballooning subsidy burden on state exchequers, led to a shift in policy stance during the early 90s when greater private participation in the transportation market was sought. This resulted in the significant rise in the share of private buses from 55 in early 90s to 92 per cent by 2012. However, this shift was not accompanied by any changes in the provisions of the RTC and MV Acts. The fast pace of growth in private participation, in absence of any concomitant reform in the legislations and rules governing the market, has led to a number of policy-based distortions.

In context of this report, the selection of the states and cities for inter-city and intra-city bus transport sectors was based primarily on consideration of size. First, the state economy should be large enough with multiple nodes of high economic activity to ensure high demand

for inter-city travel. Second, the cities should also be large to ensure considerable demand for intra-city mobility. Third, the final two states selected should show some contrasting features in terms of bus transport policy over time.

These criteria led to the selection of ***Gujarat*** and ***Madhya Pradesh*** as the focus states for the India DCR. Two main cities in these two states, *Ahmedabad* and *Bhopal*, were selected to explore the competition framework and welfare impact in the intra-city segment. Whereas intra and inter-city bus transport sector in Ahmedabad and Gujarat is largely dominated by SRTUs[3], MP allows relatively more private participation. In fact, since the abolishment of Madhya Pradesh State Road Transport Corporation (MPSRTC) in 2005 in the face of high operational inefficiency and rising subsidy burden, the inter-city routes in the state are entirely operated by private operators.

Based on the review of the intra and inter-city bus transport sector in the above two states, the DCR focuses on three policy aspects – (a) impact of legal monopoly accorded to SRTUs, (b) scope for public-private partnership and (c) impact of weak regulatory oversight. The observation on these are summarised below:

Impact of legal monopoly accorded to SRTUs

Gujarat State Road Transport Corporation (GSRTC) was accorded legal monopoly status in stage carriage[4] segment in 1994. Similarly, Ahmedabad Municipal Transport Corporation (AMTS) enjoys monopoly status in the regular intra-city bus transport system. This legal monopoly creates entry barrier and reduces the size of the market for private operators. Absence of competitive rivalry, assured availability of budgetary support delinked from any minimum performance requirements, absence of any comparative benchmark, etc. also leads to embedded systemic inefficiency in the SRTUs. Both GSRTC and AMTS are prime examples of such a scenario with Rs3bn and Rs1.7bn revenue deficit respectively in 2012-13 alone. The legal monopoly thus over time adversely affects welfare of both private and public operators.

The inefficiencies also ultimately adversely affects consumer welfare with reduced capacity of service delivery of the SRTUs (in terms of quality of buses, number of routes operated, frequency of services offered, etc.) For example, GSRTC (average) operational fleet size declined from ~7,800 in March 2003 to ~6,700 in March 2013, with corresponding decline in passengers carried from 1.27 billion to 0.84 billion. Similarly, AMTS experienced more than 10 percentage point decline (from 78 to 67 per cent) in fleet utilisation even though overall fleet size increased from 966 in March 2010 to 1120 in March 2013. The decline in service delivery capacity of monopolist SRTUs in the face of rising demand for mobility also creates an ever expanding demand-supply gap.

The case of MPSRTC has also been on similar lines. At the time of abolishment in 2005, it had a fleet of around 1,000 buses on road and more than 11 staff per operational bus, with monthly losses at around Rs50mn. Even the closure was estimated to have cost around Rs12bn.

[3] Ahmedabad Municipal Transport Services (AMTS) in case of intra-city routes in Ahmedabad, and Gujarat State Road Transport Corporation (GSRTC) covering inter-city routes within the state and even inter-state bus routes

[4] According to the Motor Vehicles Act: **(i) Stage carriage** - motor vehicles available for hire at separate fares paid by or for individual passengers either for the whole journey or for stage of the journey AND **(ii) Contract carriage** - motor vehicles engaged as a whole under a contract for carrying passengers mentioned therein. The contract may be for a fixed amount or at a fixed rate or sum on (a) time basis irrespective of route or distance, or (b) point to point basis. In either of these cases, a contract carriage permit holder cannot stop during the journey to pick up or set down passengers not included in the contract.

A study comparing efficiency of 23 SRTUs having 700+ fleet size as on March 2001 also found MPSRTC to be the least efficient[5].

Public-private partnership (PPP)

Public Private Partnership (through a process of competitive public procurement) looks to be a promising approach for introducing private competition in the bus transport sector. The Bus Rapid Transport System (BRTS) in both the cities and the case of Bhopal City Link Limited (BCLL) which replaced the erstwhile public controlled MPSRTC in intra-city transport in Bhopal are cases in point. Both Janmarg in Ahmedabad and BCLL in Bhopal act as a kind of public regulator in charge of operational decisions such as fare, route, schedule, selection of operators, etc. The operational parts of services such as bus operation, bus maintenance, IT management are, however, sourced out to private operators selected through competitive bidding.

BRTS in Ahmedabad has proved itself to be more efficient than the public monopolist AMTS and run regular bus services. Apart from being faster in service, by taking advantage of dedicated bus corridors, it also performs better in terms of average number of passengers carried (1500/bus/day vs 950/bus/day) and average revenue per bus (Rs9700 vs Rs3700). Moreover, the acceptability and satisfaction of commuters with the BRTS system is also higher than AMTS. BCLL in Bhopal also scores higher than AMTS with greater number of intra-city passengers in Bhopal reporting significant positive incremental changes[6].

Impact of weak regulatory oversight

The adverse impacts of a weak regulatory oversight were felt in the inter-city transport sector in both the states. GSRTC in Gujarat, which enjoys legal monopoly in the stage carriage segment, has seen falling operational fleet size in recent times. With demand for travel increasing with economic growth, the falling supply from the public monopolist has led to fast expansion in the supply-demand gap. This has led to surreptitious entry of private operators, who by law hold only a contract carriage permit, but have started to provide stage carriage services by taking advantage of the weak regulatory regime. With limited scope for improvements in the supply side from GSRTC, this has been largely accepted by the passengers, especially at comparable/competitive fares.

Continued monopoly of GSRTC, despite its inability to service the market fully is also imposing additional transaction costs on the private operators in the form of deploying travel agencies, paying protection money, etc. These costs eventually are passed on to the passengers. Moreover, the system favours large private operators due to the inherent illegal nature of the services and need to manage officials/politicians. The passengers are also inconvenienced since the private contract operators cannot publicise fare, schedule, route etc. under the contract permit.

On the other hand, inter-city travel in Madhya Pradesh is dominated by private operators since the abolishment of MPSRTC while retaining the operational aspects such as fare, route, schedule, etc. in public hand. However, with weak oversight capacity, the regulatory

[5] Singh S. K. and Anand V. (2003), 'Comparing Efficiency across State Transport Undertakings: A Production Frontier Approach,' *Indian Journal of Transport Management* 27(3): 374-391.

[6] It is interesting to note that even though AMTS enjoys monopoly and also runs its own fleet of buses unlike Janmarg or BCLL, private participation is not entirely banned. Rather, it is only subordinated to the public monopolist operator. In 2014, almost half of AMTS buses on the road had been hired from private bus owners through competitive bidding against a fixed sum paid on per km basis.

authority of government has largely been undermined. Interactions with passengers suggested that operators regularly pick and choose routes based on profitability, and often do not ply on routes officially allocated to them. This has led to considerable under supply of services on rural routes. Complaints of not maintaining services as per published schedules have also been quite common. Fares charged also vary from the government published rates. Even permits are alleged to being issued without proper inspections of road worthiness, pollution controls, etc.

Way Forward

Abolish monopoly of GSRTC in stage carriage

Retaining monopolies of GSRTC in stage carriage segment is imposing a large subsidy burden on the state exchequer. In addition, with falling operational fleet and passenger carrying capacity, the resultant demand-supply gap is leading to illegal entry of private operators into this segment. The passengers surveyed show acceptance of the service levels of the private operators, and also find the fare structure to be comparable to public services. Under these circumstances, it is better to bring in legislative changes to do away with the legal monopoly status of GSRTC.

Move towards PPP in the intra-city segment

Janmarg in Ahmedabad and BCLL in Bhopal demonstrate better operational efficiency and customer satisfaction relative to public monopolist AMTS. And run more regular city bus services. This suggests a case for recommending the PPP model for consideration in other cities as well. The government authorities could retain the operational control to maintain a balance between divergent interests of producers and consumers. The routes could also be determined by the public bodies, along with retaining the powers to decide on fare in each route. At the same time, the actual bus operations could be handed over to private parties through competitive bidding to enhance the efficiency level.

However, a few specific areas need to be addressed to promote competition under PPP model. First, it is important to ensure greater competition through having sufficient (larger) number of operators. Second, there has to be a balance between minimum desired service quality and the entry barriers set. The barrier should not be set too high which may favour only larger operators and/or reduce competition. Third, the bidding and revenue sharing model needs to encourage competition by attracting more players and thus will need to be customised to local conditions. It also needs to incorporate provisions to encourage and provide incentives for operators to excel and innovate.

Legislation for strong state transport regulator

The findings from the CREW project clearly make a case for changes in the regulations and regulatory approach adopted in both the states of Gujarat and Madhya Pradesh. This can be achieved through the development of state-specific regulatory framework for the public transport, which is implemented by a State-level Public Transport Regulator. The need for such a regulator has also been proposed under the draft Road Transport and Safety Bill 2014. Apart from legislative backing, such regulators also need to be properly resourced to ensure effective implementation of regulations.

1. Introduction

Motivation for the Project

The process of competition is fairly weak in almost all the developing countries. All these competition inhibiting factors lead to considerable welfare loss – for both the producers as well as consumers. For example, government regulating input and/or output prices severely restricts the operational freedom for producers and their profitability. Significant barriers to entry into the market limits the number of players, resulting in a general loss in competitive fervour among the players and may lead to cartelisation, reduced operational efficiency, lack of innovation, etc. These also will have a significant adverse impact on the consumers, with non-competitive prices, inferior product quality, lesser number of choices, etc.

The project, CREW was envisaged to identify how the existing regulatory regimes, competition policies and laws etc. in selected developing countries are affecting welfare of the producers and consumers. The study was also directed towards identifying areas to improve competitive market structure and suggest ways that may promote competition enhancing reforms. In general, the process of competition reforms comprises of the following components:

- Enabling government policies designed to facilitate a level playing field (fair competition) in a sector
- Well-designed regulatory framework, adequately resourced regulatory institutions and effective actions for promoting fair competition in a sector
- Well defined competition legislation and effective enforcement mechanisms

Project Objective and Selection of Sectors

One common feature cutting across developing countries is the severe resource constraints under which the policy makers need to operate, and the difficult socio-politico-economical choices they need to make while choosing between various public policy areas. The project needs special mention as the focus is solely on the developing countries, where the evolution of fair, competitive markets has historically been painstakingly slow. It has been designed to:

(a) drawing policy makers' attention towards the competition restrictive impacts of various administrative rules/regulation/convention, legislations, etc.;
(b) establishing the enormity of the adverse impact of such policy measures on both producer and consumer welfare; and
(c) convincingly demonstrate the considerable welfare gain possible from suggested policy reforms.

The CREW study aims to assess the benefits of competition reforms on consumers and producers in the staple food and bus passenger transport markets in India. Staple food was considered as the expenditure on it forms a large part of budget of an average family, and bears directly on the health and well-being of society. Additionally, the food value chain being rather long, lack of competition at any node can have an inflated negative welfare impact. Wheat was picked as the staple crop to study in India in view of concentrated

production in a few states, lower number of varieties produced and lifestyle changes in recent times with increasing substitution of rice for wheat.

Similarly, an average poor or middle class family largely depends on public transportation system for the travel needs. The CREW study focuses on bus transport as this market presents a good scope for private participation in the market. It also depicts close contact between passengers and operators with increased likelihood of direct and immediate impact of any reform measure on either. Keeping in mind the very different nature of market dynamics, both inter-city and intra city bus passenger transport sub-sectors were in research focus.

CREW Structure and Overview of the India Diagnostic Country Report (DCR)

The project has three distinct phases – (a) Phase I or diagnostic phase: covers research on institutional environment, reform efforts and market structure of these sectors, and an assessment of the impact on producer and consumer welfare; (b) Phase II or design phase: develop a toolkit to analyse impact of competition reform in the select markets; and (c) Phase III or validation phase: the toolkit will be applied and adjusted to finalise a framework for analysis of the impact of competition reform in developing countries.

This Diagnostic Country Report (DCR), as the name suggests, is the final output of the diagnostic phase regarding staple food and bus passenger transport sectors in India. Due to time and fund constraints, capturing the diversity across all the states had to remain restricted to a realistic extent. Thus, the study was designed in a manner that it portrays the existing scenario as much as possible within this limited scope. For each sector, two states (for each sector) were selected in a manner that enables us to explore the impact of a number of important administrative/legislative actions as well as bring out important contrasts across the select states.

The study explores the wheat market across Rajasthan and Bihar. Gujarat and Madhya Pradesh were covered for the bus transport sector. Two main cities in these two states, Ahmedabad and Bhopal, were selected to explore the competition framework in the intra-city bus passenger transport sector.

Research Methodology

Structure of Analysis

The overall framework of analysis more or less follows the DFID competition assessment framework[7]. It starts with an identification of the focus markets, followed by an analysis of the structure of market competition. It thereafter focuses on identification and selection of important competition barriers created by various government policy measures – rules and regulation, convention, legislative measures, etc., presence of Government-run institutions, etc. and analyses their impact on competition. The analytical steps followed in assessing the competition framework and the reform scope plus needs have been adapted from Porters' five forces of competition[8].

[7] http://www.oecd.org/daf/competition/reducingregulatoryrestrictionsoncompetition/46192459.pdf

[8] The steps followed have been presented in Appendix to Chapter 1, along with parameters identified to assess competition as well as consumer and producer impact of reform.

The selection of the policy measures for impact analysis was based on a set of criteria:

(a) It has to have a considerable impact on the market structure and level of market competition.
(b) The measure has to be recent and currently in force – so that adequate data/ information is available from secondary sources or can be collected through means of primary data collection.
(c) Some level of contrast is present across states in its implementation to enable us to capture diversity across states.

Data Source

Based on the objective of the study and analytical framework presented above, data was sourced using both primary and secondary modes of research.

- **Secondary research and data collation**: This includes: (i) relevant policies, legislation, programme, and their analysis and (ii) time series and/or spatial data collection from identified secondary sources, and analysis thereof. The data has been obtained from state governments' web sites, documents available at relevant state departments, personal visits to the state officials.
- **Primary research**[9]: This is comprised of data/information that was gathered from the various actors in the supply chain through
  - perception surveys of wheat producers, consumers and bus passengers
  - in-depth interview with experts, policy makers and various stakeholders along the value chain

Report Structure

The report has been structured as follows:

Chapter 2 Background

The chapter first presents a brief discussion on the reforms in the overall economic policy in general and competition policy in particular in the light of the post 90s economic liberalisation. The chapter also deliberates on the overall policy paradigm and some recent changes in the focus sectors of staple food and bus passenger transport.

Chapter 3 Competition Reforms in Staple Food Sector (Wheat) and Implications on Beneficiaries (Bihar and Rajasthan)

The chapter assesses the important reform measures in the two focus states relating to the wheat market in terms of impact on market structure, competition and welfare on farmers and consumers. It also presents a comparative analysis of the state performances.

Chapter 4 Competition Reforms in Bus Transport Sector and Implications on Beneficiaries (Gujarat and Madhya Pradesh)

The chapter assesses the important reform measures in the two focus states relating to the passenger bus transportation market in terms of impact on

[9] See Appendix to Chapter 1 for a detailed discussion.

market structure, competition and welfare on operators and passengers. It also presents a comparative analysis of the state performances.

Chapter 5 Conclusion and the Way forward

This final chapter summarises the way forward based on the key findings of the study.

2. Background

This chapter provides a historical context to competition and market reform policies and measures introduced in the staple food (wheat) and bus transport sectors in India. It also presents a brief discussion of the reforms in the context of the overall economic policy framework in India, thereby proving an overview of the evolution of the principles of competition reforms in them and indeed the economy as a whole. One of the sections in this chapter provides a brief account of the national competition law and policy in India.

From 'Control' to 'Reform'

India entered an era of ambitious industrialisation during the mid-1950s with a highly regulated economic structure emphasising on import substitution, heavy industries and a central role for the public sector. The trade policy was characterised with quantitative controls on imports and exports and exceptionally high tariff rates to protect domestic industry from international competition. The entry and growth of firms were subjected to: (a) capacity-licensing to match planned supply with potential demand, (b) Monopolistic and Restrictive Trade Practices (MRTP) Act to prevent concentration of economic power and regulate trade practices, (c) restrictive FDI policy, (d) indigenisation effort in manufacturing, (e) sectoral reservation for public sector, small enterprises, etc.

Control on prices and distribution of many commodities were imposed to ensure affordable consumer/industrial input prices through administered prices or dual pricing schemes. A number of labour laws were also enacted with the avowed objective of protecting the workers' interest, though such regulations for all purposes were effective only on the miniscule organised sector.

The long-term consequences of such restrictive policies began to emerge since the mid-1970s. Domestic competition was negligible, and choice of plant size, product lines, workforce adjustments and optimal locations were limited. Technology in use was largely out-dated, with units operating below the minimum efficient scale. The cost of production was high due to combined effect of domestic industrial regulation, high costs of traded inputs, high tariff rates plus strict import-licensing. All these led to an inefficient industrial structure that could not match world market standards both in terms of price and quality.

In the absence of any substantial reform, the economic ills kept compounding, ultimately culminating in the economic crisis of the early 90s, forcing the country to embrace large scale reform in economic structure at both macro and sectoral level. Various steps were taken to stimulate exports by reducing the degree of regulation and licensing control on foreign trade. The rupee was made partially convertible in 1992-93, fully convertible on the trade account in 1993-94 and fully convertible on current account in 1994-95. Quantitative restrictions in the form of licensing and other discretionary controls were phased out.

The basic philosophy behind the industrial policy reforms was to dismantle the 'control raj' that had led to inefficiency and high-cost structure in Indian industry. The decontrol measures were also expected to reduce corruption in the bureaucratic machinery. It enabled more competition by allowing free entry and more operational freedom in decision making.

Licensing requirements were abolished for all except a few industries due to their strategic and environmentally sensitive nature or their exceptionally high import content. Decision regarding choice of product line and size of production was opened to market forces for most of the products. Foreign investment also received encouragement, with the new policy allowing automatic approval of FDI of up to 51 per cent foreign equity holding in 35 specified, high-priority, capital-intensive and high technology industries as long as the foreign equity covered the foreign exchange requirements for imported capital goods. Foreign Investment Promotion Board (FIPB) was also set up to adjudicate on cases when a foreign entity wanted to invest in a sector outside the automatic list or intended to take an equity exposure in excess of 51 per cent.

Reform measures in the equity market were focused mainly on regulatory effectiveness, enhancing competitive conditions, reducing information asymmetries, developing modern technological infrastructure, mitigating transaction costs and controlling of speculation in the securities market. Securities and Exchange Board of India (SEBI) was set up for regulating the equity market. In the same year, the Indian capital market was also opened up for equity investment by foreign institutional investors (FIIs).

Evolution of the National Competition Regime

India was among the first emerging economies to have enacted a competition law way back in 1969. The Monopolies and Restrictive Trade Practices (MRTP) Act, 1969 was enacted to prevent concentration of economic power, control monopolies, and prohibit monopolistic and restrictive trade practices. Subsequent amendment in 1984 introduced a provision for the regulation of unfair trade practices, a consumer protection provision covering deception, misleading claims and advertising etc., and created Director General of Investigation and Registration (DGIR) to focus on restrictive trade practices (RTP), unfair trade practices (UTP) and monopolistic trade practices (MTP). However, the MRTP Act did not deliver as expected due to varied reasons such as incomplete definition of anti-competitive trade practices, competition attributes such as entry, price, scale, location, etc. were outside the purview of MRTP Commission, poor resource allocation, lack of operational freedom, etc.

Competition Act 2002[10,11]

The economic reforms undertaken since the early 1990s significantly changed the economic environment in the country from a "command-and-control" regime to a regime based more on free market open competition principles. Based on the recommendations made by the Raghavan Committee, India replaced the MRTP Act with the Competition Act 2002 which focused on prohibition of anti-competitive agreements and abuse of a dominant position, regulation of combinations and promotion of competition advocacy

Competition Commission of India (CCI) has been set up under the Act, which can initiate an enquiry on its own motion, on information/reference made by government/statutory authorities, or upon receiving a complaint. CCI has processed more than 425 cases relating to enforcement of anti-competitive agreements and abuse of dominance since enforcement commenced in May 2009.

[10] Chitale, S., 2014, India: Overview, The Asia-Pacific Antitrust Review 2014.
[11] Chawla, A., 2014, India: CCI, The Asia-Pacific Antitrust Review 2014.

Competition policy

As discussed earlier, competition policy besides encompassing the competition law and sector specific regulatory policies, deals with possible anti-competitive effects of government policies. It also attempts to address government policies that could adversely impact on competition and consumer welfare.

A draft National Competition Policy was formulated in 2011 by the Ministry of Corporate Affairs based on the following principles:

- Effective prevention of anti-competitive conduct
- Institutional separation between policy making, operations and regulation
- Rule bound, transparent, fair and non-discriminatory market regulation procedures
- Competitive neutrality between public and private entities
- Fair pricing and inclusionary behaviour, particularly of public utilities
- Third party access to essential facilities on agreed reasonable and non-discriminatory terms and conditions allied with competition principles
- Public policies and programmes to work towards promotion of competition in the market place
- Co-operation in the field of competition policy enforcement and advocacy.

The new Government which took office in May 2014 has been taking several steps to transform the state of economic governance and reforms in the country. One can only hope that the 'national competition policy' falls in the scheme of these reforms of the new Indian government. Civil society actors, academia and practitioners have repeatedly spoken about the need for a national competition policy in India, without further delays. It is anticipated that the analysis and findings contained in this report will further facilitate informed discussion and competition advocacy in this regard.

Background on Agriculture Sector Reforms in India

Agriculture has traditionally been identified with basic food related produce. However, over time several other areas like forestry, horticulture, floriculture, dairy, poultry, etc. have been included in the definition of modern agriculture. As of 2013-14, agriculture and allied sectors accounted for around 14 per cent of GDP as compared to 52 per cent in 1950-51. However, though GDP's dependence on agriculture has shrunk drastically after independence, the total production has increased many fold.

The main challenges facing Indian agriculture are in four areas: (1) growth (2) sustainability (3) efficiency and (4) equity. This shall require simultaneous reform initiatives on several fronts like incentive structure, infrastructure, technology, market development, extension, input supply, tenancy, regulations etc. The estimated post-harvest losses of agriculture products (cereals, fruits and vegetables) at about Rs440bn at 2009 wholesale prices[12] highlights the importance of streamlining agriculture activities including the supply chain.

[12] Departmentt of Agricultural Research and Education/ Indian Council of Agricultural Research Annual Report 2010-11

In order to address these challenges, various policies and reforms were introduced from time to time in different components of the agriculture sector. Key developments noticed in the various nodes of the agriculture (crop) value chain from a competition and market reforms perspective have been discussed in detail in the following chapter (3). Some of the salient elements of this discussion focus on:

- Policies and programmes that accentuated the role of the private sector in various nodes of the agriculture value chain (inputs > production > procurement > storage > marketing and distribution)
- Role of the public sector enterprise in such an evolving market
- Institutionalisation of proper 'checks and balances' to ensure meeting social objectives (needs of beneficiaries, including the most marginalised) in the country

Table: Some Salient features of the policy regime across agriculture value chain

Agriculture Value Chain	Salient Points
Fertiliser	Provision of subsidies has remained a ubiquitous feature of plans and programmes in this sector. The current policy focusses on improving production efficiency to meet the expanding demand, while limiting the level of subsidies and improving availability. Government remains a key player in the market.
Seeds	There has been gradual liberalisation of the seed policy regime in the country, with a deliberate attempt to enable the private sector to play a much bigger role. At the state-level, government seed corporations have implemented various programmes to preserve local varieties and ensure that seeds are available easily to farmers.
Marketing	The Government has controlled agricultural marketing through the Essential Commodities Act 1955, and later the Agricultural Produce Marketing (Regulation) Act in the 70s. However, the State Agricultural Produce Marketing (Development & Regulation) Act, 2003 was enacted to move away from a government-controlled system towards a pro-market regime.
Warehousing	Warehousing (Development and Regulation) Act 2007 was developed with the intention of engaging private sector in provision of warehouse infrastructure in order to address the challenge of insufficient public infrastructure for storage.

Given the focus of the project on consumer and producer welfare, it was decided that staple food sector policies would be analysed to identify pro/anti-competitive policies and assess their implications on these beneficiaries.

This report focuses on the wheat sector and looks into the wheat market in two states of India – Bihar and Rajasthan[13]. As per the Indian Constitution, states are empowered by the national Government to develop state-specific policies, reforms and programmes for the agriculture sector. Therefore, in addition to national-level policies and reforms, specific state-level policies and programmes on various segments of the agriculture value chain has been discussed in this report (in chapter 3).

Background on Reforms in the Bus Transport Sector in India

Transport sector in India includes various alternative modes like roads, railways, aviation, inland waterways and shipping, giving a wide variety of choice for conveyance of goods and ferrying people across the country. However, road transport remains the backbone of the system. While the transportation sector as a whole accounted for 6.5 per cent of GDP in 2011-12, road transport alone accounted for 4.8 per cent of GDP with railways at a distant second position at 1 per cent of GDP.

The Evolution of Bus Transport Sector [14,15,16]

Bus transport service is about a hundred years old in India. Large number of buses were already plying by the 1920s, and the first motor bus route started in Mumbai in 1926 running between Afghan Church and Crawford Market charging a fare of 25 paise[17]. The unregulated fast pace of growth in this early period, however, led to unhealthy competition. The Indian Motor Vehicle Act (MV Act) 1914, the first legal and regulatory framework governing motor vehicles in India, failed to effectively deal with this burgeoning sector. This early expansion in the bus service even managed to pose a threat to the railways. All these factors led the Mitchell-Kirkness Report of 1932 to recommend restriction on the number of licenses per route, fixation of schedules & fares, and compulsory motor insurance. Later, formal control was imposed in the form of Motor Vehicles Act 1939.

The policy favouring control over road transport continued in the post-independence period. An indication towards progressive nationalisation of the sector was given early, with enactment of the Road Transport Corporation Act (RTC Act) 1950, and addition of special provisions for State Road Transport Units (SRTUs) in the MV Act. Later, Industrial Policy Resolution of 1956 also put Road Transport in Schedule B[18].

[13] The criteria for selection of this market and the two states have been described in the chapter 4
[14] Transport Research Wing, Ministry of Road Transport and Highways, Road Transport Yearbook 2011-12.
[15] Sriraman, S., 2011, Competition and Regulation in India 2011, Chapter 9 – Public road (passenger) transport regulation in India, pp. 215-238.
[16] Working Group Report on Road Transport for the 11th Five Year Plan.
[17] http://www.indiabookofrecords.in/records-gallery/science-and-technology/first-motor-bus
[18] Schedule B included sectors which were to be progressively state-owned and in which private participation would play only a supplementary role to state effort.

The enactment of the Road Transport Corporations Act, 1950 (RTC Act) enabled the state governments to establish a Road Transport Corporation for the whole or any part of the state[19] based on the avowed objectives of

(a) extending and improving an economical and efficient road transport service;
(b) spreading the benefits of development of road transport to the public, trade and industry, and
(c) ensuring better coordination among road and other modes of transport.

In parallel, the Motor Vehicles Act (MVA) had the provision empowering state governments to nationalise road transport services to be operated by state road transport undertakings (SRTU)[20]. At the discretion of the state government, such nationalisation could be undertaken for the road transport services in general across the state or any particular class of such services in relation to any area or route or any part of it. Reservation for the SRTU, as per the MVA, thus could be done in partial or complete exclusion of other private entities at the discretion of state government. In case of area or routes reserved for the SRTU, existing permits could be cancelled outright or modified to limit its period of validity and/or reduce number of authorised vehicle and/or curtail the number of routes.

Further, even in cases where a SRTU has not applied for a permit to ply on notified area or routes, only temporary permits were allowed to be issued to private parties, and that too would expire immediately, once a permit for the said route was granted to the SRTU. Despite multiple amendments in the interim, a new Act was required to address the changes that have occurred in transport technology, pattern of passengers and freight movement, development of road network, improved techniques in the motor vehicle management, etc. This led to the enactment of the current Motor Vehicle Act 1988. With RTC Act still in force, the provisions for the SRTUs though were retained. In addition to these central MV Act and RTC Act, there are the central and state Motor Vehicle Rules (MV Rules). The provisions of the state MV rules vary from state to state within the ambits outlined in MV Act. As a result, the shape and structure of the bus transport market vary across states[21].

The MV Act also makes a strong distinction between two types of bus passenger transport segments – (i) **Stage carriage** - motor vehicles available for hire at separate fares paid by or for individual passengers either for the whole journey or for stage of the journey and (ii) **Contract carriage** - motor vehicles engaged as a whole under a contract for carrying passengers mentioned therein. The contract may be for a fixed amount or at a fixed rate or sum on (a) time basis irrespective of route or distance, or (b) point to point basis. In either of these cases, a contract carriage permit holder cannot stop during the journey to pick up or set down passengers not included in the contract. Taking advantage of the power vested with the states, some of them like Gujarat have reserved the stage carriage routes for SRTUs.

Performance of the SRTUs Over the Years

The SRTUs performed reasonably well in the first three decades post introduction, but soon started to falter due to financial constraints, increasing operational inefficiency and political interference, rising competition from the illegal/clandestine operation of the private operators, suboptimal regulatory oversight, corruption, etc. The slowdown in the fleet expansion due to

[19] Chapter II – Road Transport Corporations; Section 2 – Establishment of Road Transport Corporations in the States.
[20] Chapter VI – Special Provisions Related to State Transport Undertakings, Section 97 to 108.
[21] For an expository discussion on the variation in the rules and how they impact competition, see NCAER, 2007, State Policies Affecting Competition: Passenger Road Transportation Sector.

financial constraints, ballooning subsidy burden, etc. finally led the Planning Commission in 1993-94 to shift policy stance and seek investment from private sector to meet the rising demand. The change in the policy stance gets reflected in the share of private sector in the overall number of buses in the country which increased from 55 to 92 per cent in 2012. This fast pace of growth and the policy shift also led to a few policy distortions in the initial phases[22].

Since the Central Acts allow the states considerable choice in terms of implementation, there is wide variation in state MV Rules resulting in considerable variation in the ground condition across the states. As an example, whereas in Maharashtra all intra-state routes are reserved for public operations since nationalisation in 1974, Madhya Pradesh has abolished the Madhya Pradesh State Road Transport Corporation (MPSRTC) in 2005. Similarly, as on 2005, the share of private buses varied from only 7 per cent in Maharashtra to 97 per cent in Orissa and 85 per cent in West Bengal. This inter-state variation has been nicely summed up in the NCAER (2007) study which computes competition index for bus passenger transport in select seven states. Rajasthan comes out as the most competitive among the lot and Maharashtra at the bottom[23]. The alternate frameworks for provisioning bus transport services are discussed in appendix to chapter 2.

[22] For a detailed discussion, see Sriraman, S., 2000, Report on State Road Transport Undertakings in India, submitted to the 11th Finance Commission, Government of India, and World bank, 2005, Road Transport Service Efficiency Study, Mimeo, World bank, Washington, D.C.
[23] NCAER, 2007, *op. cit.*

3. Competition Reforms in Staple Food (Wheat) Sector and Implications on Beneficiaries (Bihar and Rajasthan)

Introduction

In the staple food market this report has focused on the wheat market, given that it is one of the most important staple crops in the country. Further, wheat production is done across a large number of states in the country, as compared to say 10-15 years ago. Further, the wheat market is not as complicated as that of the rice market – due to less number of varieties in wheat as compared to rice. Finally, due to lifestyle changes wheat seem to have become a preferred staple food for people across the country – as compared to rice.

The wheat supply chain in India involves around nine intermediaries as compared to only two in the United States (US), with a concomitant direct impact on price mark-up from the farmer to final consumer and post farm-gate wastage. High Level Expert Committee on Cold Storage (1999) set up by Department of Agriculture and Co-operation estimated wastage at 25-30 per cent in case of fruit and vegetables and 8-10 per cent in case of food grains. Department of Agricultural Research and Education/Indian Council of Agricultural Research Annual Report 2010-11 estimated the post-harvest losses at 3.9-6.0 per cent for cereals, 5.8-18.0 per cent for fruits and 6.8-12.5 per cent for vegetables, with an aggregate wastage at about Rs440 bnat 2009 wholesale prices. Similarly, compared to the mark up in India at ~135 per cent, in US the same is only ~9 per cent[24]. Both these statistics highlight the pressing need to streamline the elongated agriculture supply chain which can bring long awaited welfare enhancement for both producers and consumers.

This chapter focuses on the competition reforms and regulations that have been adopted in the wheat sector of Bihar and Rajasthan and their impact on producers' and consumers' welfare.

The chapter begins with an exposition of the reasons behind the selection of Bihar and Rajasthan as test states followed by a brief overview of the wheat sector in the two states. It covers select reform measures in Bihar and Rajasthan which had a significant (positive or negative) impact on competitive environment and producer/consumer welfare. A comparison of the experiences of Bihar and Rajasthan is presented and key findings are summarised.

Rationale for Selection of the States

First, the top six states (viz. UP, MP, Punjab, Rajasthan, Haryana and Bihar) in terms of wheat production, accounting for >90 per cent of national wheat production in 2011-12, were shortlisted. From this shortlist, it was decided to choose the final two based on (a) diversity of characteristics in terms of general agriculture background (such as agro-climatic zone, agriculture performance, practices, etc.), and (b) differential behaviour in terms of agricultural policy over time.

In terms of the above two parameters, Rajasthan and Bihar emerged as two most suitable states for analysis[25]:

[24] Mehta, P. S. (ed.), 2009, Competition and regulation in India, CUTS International-CIRC, Jaipur.

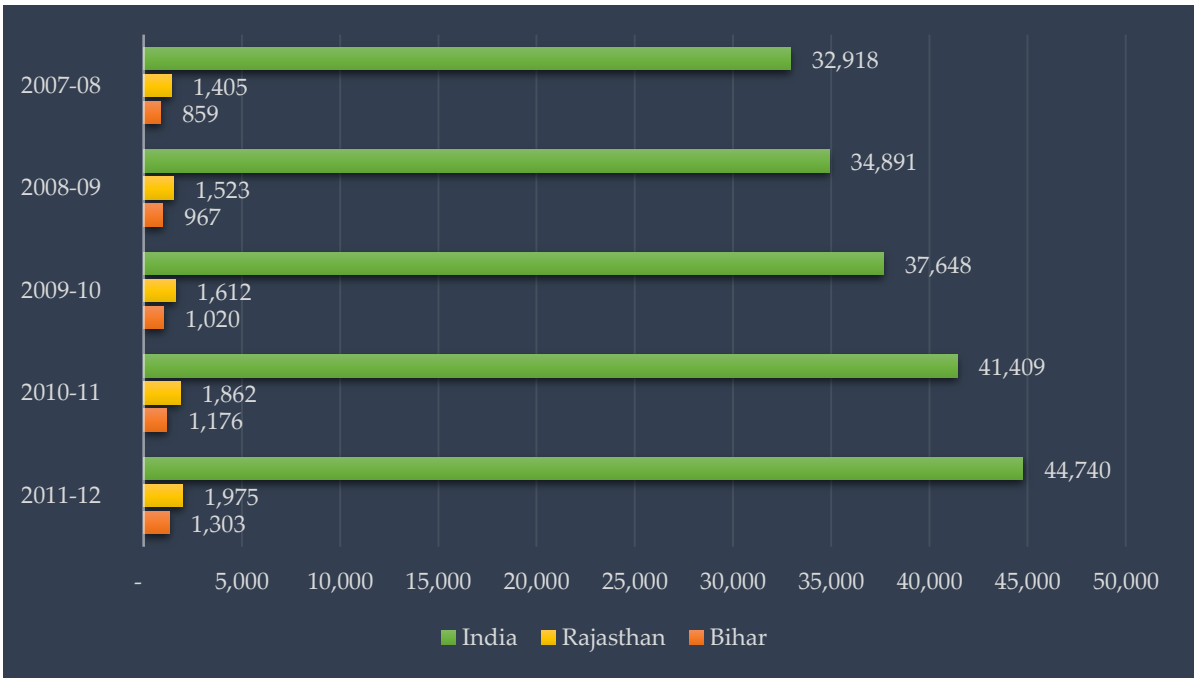
[25] See appendix to chapter 3 for a more detailed discussion on the rationale for selection of the two states.

- Agricultural performances and practices of Rajasthan and Bihar are significantly different in terms of yield while recording a lower consumption of fertiliser. Seed Replacement Rate in Rajasthan was also higher along with consumption of electricity for agricultural purposes and level of mechanisation.
- As part of its agricultural plan, a number of initiatives were taken by Bihar in the seed sector which brought in greater public and private investment and significantly improved its seed availability scenario.
- In terms of marketing, Bihar repealed the Central Government's Model APMC Act altogether, thereby abolishing the State government regulated mandis and allowing market forces to operate in agriculture market.. In sharp contrast, Rajasthan followed the Model APMC Act, and adopted the main three objectives of the model Act – direct marketing of agricultural produce, private markets and contract farming.
- Moreover, procurement of wheat in Bihar has recently been transferred away from national level agencies like Food Corporation of India (FCI) to local agencies – Primary Agricultural credit Societies (PACS) under the aegis of Bihar State Food Corporation (BSFC). In contrast, Rajasthan still largely follows a dual system of both state and central level procurement, and is currently experimenting with Decentralised Procurement System (DPS) in Alwar district.

Overview of Wheat Sector in Bihar & Rajasthan

The size of Rajasthan's economy (in terms of net state domestic product at factor cost at 2004-05 constant prices) is around 1.5 times that of Bihar. However, Bihar has been growing at a faster pace in the recent times – at 8.7 per cent pa relative to Rajasthan's 7.1 per cent pa over 2007-12. As on 2011-12, Bihar and Rajasthan accounted for 3 and 4 per cent of the national economy respectively.

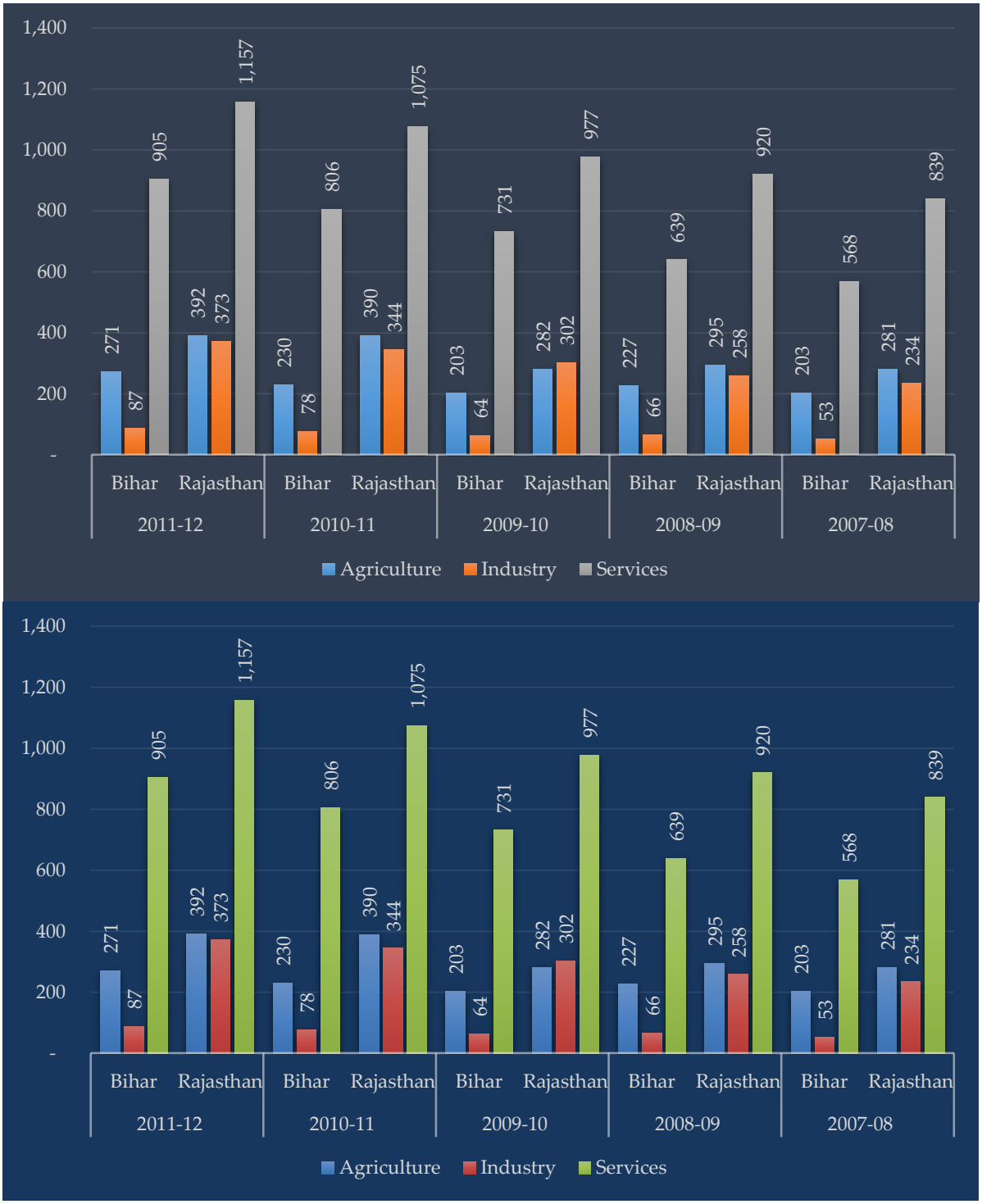
Figure 0.1: Net state domestic product at factor cost (2004-05 constant prices, in Rs bn)



Source: Handbook of Indian Statistics 2012-13

The share of the two states in national agriculture (excluding forestry, logging, fishing etc. allied activities) output was marginally higher at 5 per cent (Rs271bn) and 7 per cent (Rs 392bn) in 2011-12. The agricultural growth pattern, however, reverses the relative positions of the two states in overall growth – against Bihar's 6.0 per cent pa growth over 2007-12 Rajasthan recorded a higher 6.8 per cent. Agriculture had a 1/5th share of the state economy in either of the states.

Figure 0.2: Sectoral distribution of net state domestic product at factor cost (2004-05 constant prices, in Rs bn)



Source: Handbook of Indian Statistics 2012-13

In 2010-11, India had around 160 million hectares agricultural land holding of which Bihar accounted for 6 million hectare (4 per cent) and Rajasthan 21 million hectares (13 per cent). However, number of landholdings in Rajasthan was considerably higher than in Bihar, reflecting higher land fragmentation and lower holding size. Whereas national average size of landholdings was 1.15 hectares, and even higher 3.07 hectares in Rajasthan, the same was only 0.39 hectares in Bihar. In fact Bihar trailed both Rajasthan and national average landholding size across all the landholding categories[26].

The agriculture economy in Bihar is dominated overwhelmingly by marginal and small farmers – these two categories accounted for 97 per cent of landholding units covering 76 per cent of agricultural land. The large farmers in the state accounted for only 1 per cent of agricultural land. In contrast, large farmers accounted for 6 per cent of Rajasthan landholding units covering 33 per cent of agricultural land area. Marginal farmers accounted for only 6 per cent of agricultural land in the state.

This dominance of marginal/small farmers in Bihar has important ground level implication for policy design. Inputs for production need to be affordable and locally accessible for marginal/small farmers to benefit. Greater access to credit from institutional sources is another major requirement. With low individual production, individual bargaining power in open market will also be low. In addition, it may not be cost effective to transport produce to a far off market. In short, it should focus more on developing local level markets for agricultural produces.

Area under cultivation of wheat in Bihar has increased at 0.69 per cent pa, lower than the national average of 0.95 per cent and Rajasthan figure of 1.91 per cent. As a result of the lower rate of expansion in Bihar, its share in total area under wheat production in India declined from 8 in 95-96 to 7 per cent in 11-12. In contrast, Rajasthan raised it share from 7 to 10 per cent.

Rajasthan similarly fared significantly better in improving its yield over the period – increasing from 1,464 kg/hectare in 1980-81 to 3,175 kg/hectare in 2011-12 at a CAGR of 2.53 per cent, higher than the national average of 2.14 per cent. Starting from a similar yield level, Bihar could increase it only to 2,206 kg/hectare in 2011-12. Higher (historical) Seed Replacement Rate, better irrigation facility, better availability of electricity, higher level of mechanisation are some of the contributory factors behind better performance of Rajasthan compared to Bihar.

As a joint consequence, wheat production in Bihar increased at a slower pace (2.38 per cent pa) than the national average (3.11 per cent). In contrast, Rajasthan more than trebled its output from 2,394,000 tonne in 1980-81 to 9,320,000 tonne in 2011-12.

[26] See appendix to chapter 3 for a graphical presentation of land holding pattern across size categories.

Table 0.1: Area, production and yield of wheat

		1980-81	1990-91	2000-01	2010-11	2011-12
Area (in '000 ha)	Bihar	1755	1965	2068	2104	2170
	Rajasthan	1635	1014	2310	2479	2935
	All India	22279	24167	25731	29069	29902
Production (in '000 tonne)	Bihar	2306	3560	4438	4098	4787
	Rajasthan	2394	4309	5547	7215	9320
	All India	36313	55135	69681	86874	93904
Yield (kg/ha)	Bihar	1314	1812	2146	1948	2206
	Rajasthan	1464	2375	2402	2910	3175
	All India	1630	2281	2708	2989	3140

Source: Commission for Agricultural Costs and Prices

Over the period 1990-91 to 2012-13, cost of many of the agricultural input increased by many fold. Fertiliser price increased around 5 times (CAGR of 7 per cent), electricity (irrigation) 7 times (CAGR of 9 per cent), high speed diesel 9 times (CAGR of 11 per cent), fodder 4 times (CAGR of 7 per cent) and cattle feed 5 times (CAGR of 8 per cent). In general, the price increase was higher in 1990-2000 compared to the 2000-2010, and particularly true in case of fertiliser and electricity. For other items, the cost increase trend remained the same or decelerated marginally (by 2 to 3 percentage points).

However, the rate of cost increase in the recent period (i.e. 2010-11 to 2012-13) looks to be accelerating again for all items except non-electrical machinery. Since the beginning of the decade, cost increase for fertiliser and electricity has been 13 and 15 per cent per annum respectively. For others, the acceleration has been moderate.

Cost of cultivation per hectare in Bihar increased from Rs11000 to Rs25000 (approx.) @ 6 per cent pa over the period 1996-2011. Of total cost, operational cost (labour, seed, fertiliser, etc.) accounted for 72 per cent as on 2010-11. It increased by 7 per cent pa over the period, whereas fixed cost (rental value of owned land, land revenue, etc.) increased by 4 per cent pa. Among the major operational cost items, human labour cost increased by 8 per cent pa, machine labour cost increased by 12 per cent pa, seed and irrigation by 7 per cent.

In case of Rajasthan, cost of cultivation per hectare is considerably higher and increased from Rs 15000 to Rs33000 @ 5 per cent pa over 1996-2011. Operational cost accounted for about 60 per cent in Rajasthan as on 2010-11. Among the major operational cost items, human labour cost increased by 5 per cent pa, machine labour cost increased by 6 per cent pa, seed by 6 per cent and irrigation by 4 per cent. Thus, cost increase has been relatively lower in Rajasthan compared to that of Bihar.

Reforms in Wheat Sector and Implications on Producers (Farmers) and Consumers

The study considered five nodes of the wheat supply chain – (i) production (fertiliser and seed related issues only), (ii) agricultural marketing of the produce, (iii) procurement of wheat by the government for maintaining buffer stock for food security purposes, (iv) warehousing sector developments and (v) distribution of wheat including the public distribution system (PDS) for subsidised delivery of foodgrain.

Policy making in some of the areas, such as fertiliser warehousing, distribution[27] was found to be more in the hands of the Central Government, with very limited say by the States**.** Consequently, the study focused on nodes of the wheat supply chain which were governed by state-level poli**c**ies viz. seed market**,** agricultural marketing and procurement. It also presents a comparative assessment of their impact on beneficiaries in the two states (Bihar and Rajasthan).

Bihar

Seeds

In Bihar, competition reforms in the seed sector have had a significant impact on availability of quality seeds for the farmers. This has increased seed replacement rate (application of 'certified' seeds per unit area cropped) leading to better productivity for farmers. Further, an enabling business environment has also helped to attract a number of private players in the state's seed market.

Before the year 2008, only 6200 quintals of certified/quality seed on subsidy was distributed in Bihar. Seed Replacement Rate (SRR) was very low at only 11 per cent for wheat. It was similarly low for paddy 12 per cent, pulses 5 per cent, oilseed 30 per cent and maize 50 Per cent. This poor state of affairs was mainly due to the non availability of requisite amount of quality seeds (certified seeds) with a weak State Seed Corporation and non-participation of state in the central sector scheme for strengthening of seed infrastructure. Private sector presence was also limited to just one seed company.

To improve the condition, a holistic Agricultural Road Map 2008-12 was prepared encompassing reform initiatives for various nodes of the seed supply chain. A target was set for seed replacement rate (SRR) for wheat/paddy, pulses, oilseed and maize at 35, 20, 55 and 70 per cent respectively. Further, to achieve higher seed production and better SRR seed production targets of Bihar Rajya Beej Nigam (BRBN) were considerably increased. Concomitant budgetary allocations were also made to ensure additional fund for Bihar Rajya Beej Nigam (BRBN) to strengthen its capability.

Some of the schemes introduced to boost Bihar's seed sector (under the Agriculture Roadmap of 2008) were as:

- **Mukhyamantri Tibra Beej Bistar Yojana**

Two farmers were selected by the Block Agricultural Officer from each village for each selected crops, and foundation seed of selected crops were distributed in small packets (20 kg packet for half acre land in case of wheat) at a subsidised rate. One day before the distribution, farmers are given training on seed production technology. A district scientist was also provided for each district to solve farmers' seed related problems. Certified seed

[27] Public Distribution System (PDS)

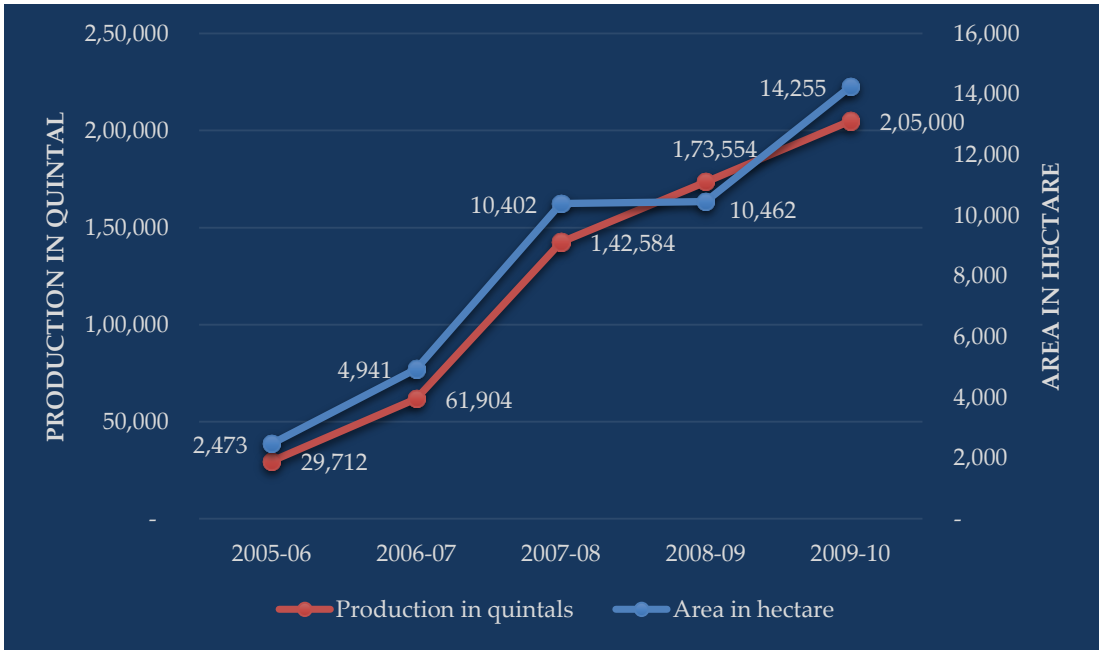
produced by farmers spread through traditional method of exchange. Registration with Seed Certification Agency was voluntary.

Under the scheme, foundation seed distribution by 2009-10 reached 26.5 thousand quintal for paddy, wheat, gram and lentil with 0.25 million beneficiaries resulting in quality seed production crossing 0.83 million quintal.

- **Beej Gram Yojna**

4 villages in each block were being covered, and desirous farmers of selected villages were imparted training at three stages and given foundation seed at half the cost. Seed storage bins of 5 quintal capacity were also provided to farmers on subsidy. 1064 villages had been covered by 2009-10 under wheat starting from a mere 34 villages in 2007-08. In addition, 1024 villages were covered under paddy by 2009-10, almost doubling from 529 villages in 2008-09.

Figure 0.3: Seed production in Bihar



Source: Department of Agriculture, Government of Bihar

- **Seed Production on Government farms**

Foundation seed production was started in 2006-07 on Government farms with the cost of cultivation fully funded by state. Infrastructure facilities like irrigation, land leveller, mechanised harvesting, barb-fencing, 150 storage godowns, etc. were strengthened through Rashtriya Krishi Vikas Yojana (RKVY). Seed were distributed among farmers through BRBN under various schemes. In total, around 3000 hectare of state farm area were brought under seed development, producing around 51,500 quintal of foundation seed, most of which accounted for by paddy (1476 ha, 35000 qntl) and wheat (1120 ha, 15000 qntl).

The reforms initiated under the Agricultural Road Map 2008-12 also mandated an enhanced role of private players in boosting seed production and marketing. The given action is said to have been one of the main reasons for increase in private participation of Bihar's seed sector,

where the number of private players increased from 1 in 2006 to over 10 in 2013.[28]On the flip side, such private producers were also given the option to sell to the National Seed Corporation rather than developing their own distribution channel. Though this reduced cost for private players, but at the same time reduced scope for improving accessibility by attracting private investment in distribution channels.

Overall, seed production in Bihar increased around seven fold over 2005-06 to 2009-10. From 2008 onwards, the yield (especially in paddy) improved in response to the reforms in this sector. In case of wheat, the yield augmented from ~18 – 20 quintal/hectare in 2008 to 38 – 40 quintal/ hectare in 2013. Furthermore, as emerged from the field survey undertaken for this report, 87 per cent of the respondents in Saran and Vaishali districts reported that there was an increase in access while 83 per cent reported increased reliability of supply and higher purchase. 79 per cent of the respondents also reported improvement in seed quality. The seeds also became more affordable for 77 per cent of farmers.

Marketing

APMC Act was repealed in Bihar in view of widespread systemic corruption and malpractices. However, in absence of government support in infrastructure development, and to some extent due to marginal/small farmer dominated agricultural scenario, no significant private investment materialised to help in setting up new markets ('mandi') or in contract farming or direct marketing. Notwithstanding some cost gains reported by farmers post abolishment of APMC, they continue to depend on local traders (and/or village assemblers) for sales and remain vulnerable to the price fluctuations.

In case of Bihar, APMC Act has been repealed since September 01, 2006. The market infrastructure created earlier by the Bihar State Agricultural Marketing Board is still in use with the Nodal Officer (SDM) is in-charge of. These agriculture markets are unregulated as far as provisions of APMC Act are concerned, and there is no public control over the trade practices. No market fees are charged from the farmers, but other charges for loading/unloading and 'hamal' charges are imposed.

Here, the survey tried to capture the effect of the abolishment of government markets (mandis) in Bihar on the farmers. When asked about the impact of this abolishment of mandis by the government, 86 per cent of the respondents in Saran district reported that they had benefitted the farmers as it had reduced cost while 13 per cent reported that it had no impact. In Vaishali district 70 per cent of the surveyed farmers suggested having benefitted while 30 per cent did not. The respondents explained that with the abolishment of the mandis, the transaction fee (mandi fee) had been removed. This benefitted those farmers, who were able to sell their produce at the mandis. For other farmers, who were unable to access these mandis (as they could not afford to transport their grains) there seem to have been no noticeable impact of the abolishment of the government mandis. They continued to rely on the traders/village assemblers who would pick the grain from their farm gate.

There are around 53 markets having basic infrastructure as open/covered platforms, shops, godowns, weighbridge, etc. The repeal of the APMC Act in 2006 freed the market for private participation. However, in the absence of any significant public investment in infrastructure post 2006, the sector has failed to attract much private investment. As a result, the marketing

[28] As obtained from project surveys

setup has remained underdeveloped with limited private mandis and some proliferation of informal mandis.

Post 2006, there is also no legal barrier to direct marketing and contract farming. However, with most of the Bihar farmers belonging to the marginal or small category, no significant progress could be made in either of these two areas. Some other aspects inhibiting progress in these areas are:

- Lack of transparency in contracting process
- Lack of sanctity of the contract
- Lack of public investment in infrastructure and resultant logistical issues
- Lack of protection for crop failure, crop insurance
- Credit availability and cost issues

One of the most important welfare gains of any policy is ease of sales in competitive prices. Any policy that enhances farmers bargaining power to sell the harvests at the price they choose to sell in a competitive market should be considered as a successful policy implementation. The primary survey shows that the small farmers sell only about 50 per cent of their harvest and the rest are used for self-consumption. With such low level of marketable produce, the individual bargaining power in the open market of the overwhelming number of marginal/small farmers in Bihar thus is quite low. Moreover, the productions of the marginal/small farmers in Bihar are far lower than large farmers and have increased at a significantly lower rate.

Figure 0.4: Production and proportion of production sold – Bihar

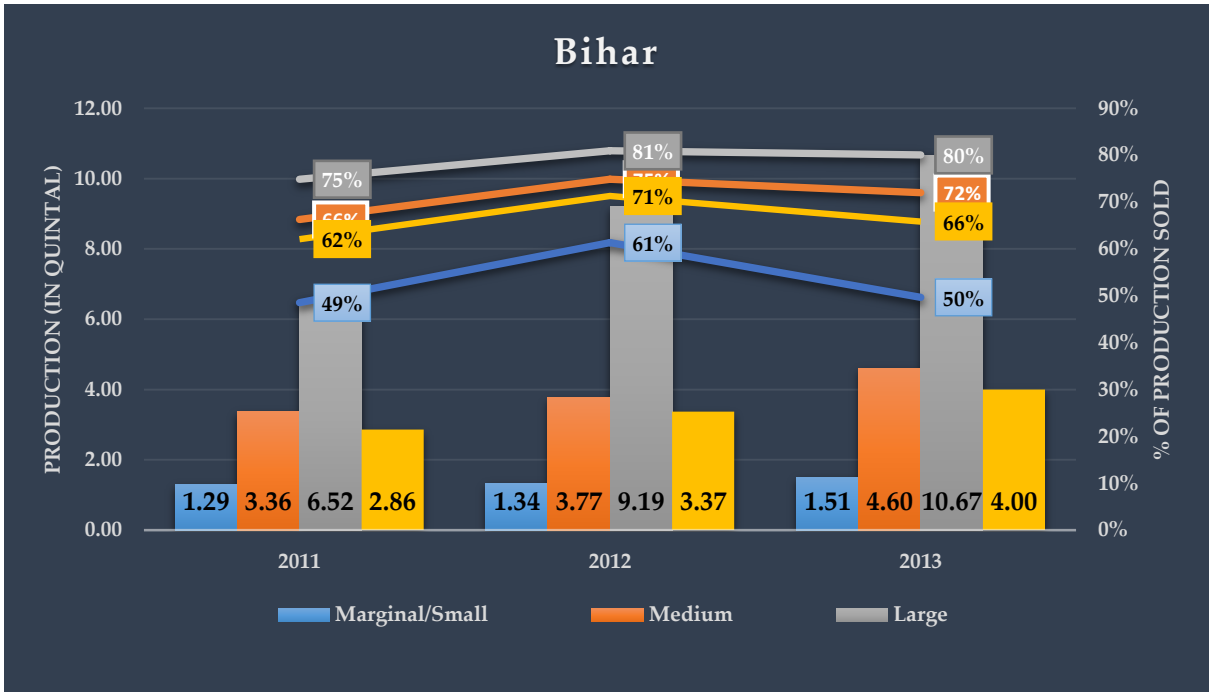
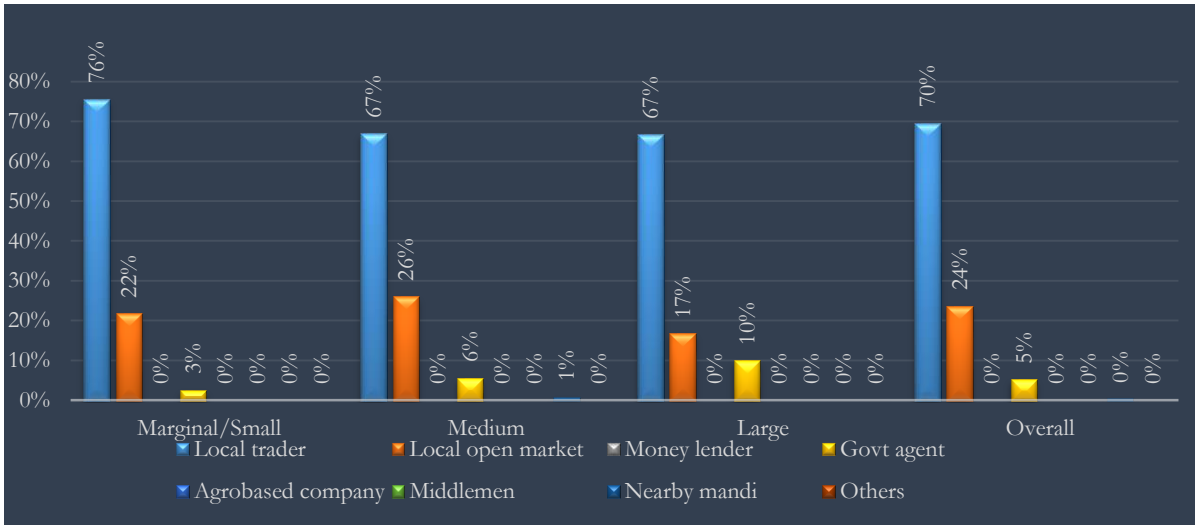


Figure 0.5: Whom the farmers sold their produces to - Bihar



Further, majority of the farmers surveyed across all categories sold their crop to local traders. Only 10 per cent of the large farmers have sold their crop to government agencies, which further reduces to 3 per cent in case of marginal/small farmers. Even in terms of preference (as against actual sales) too more than 90 per cent of farmers reported local traders as their preferred buyer and only 65 per cent preferred government procurement agencies. Non-availability of local markets within easy reach, delay in payments by government agencies, etc. are commonly stated reasons. The importance of such factors to farmers becomes even more evident if we keep in mind the pre-dominance of marginal/small farmers in Bihar and their low level of marketable produce. It is apparently more economical for these farmers to sell at home to local trader against ready cash.

It also needs to be noted that more than 90 per cent of the farmers reported that they sell at a price which is generally prevalent in market and only about 10 per cent go by government set Minimum Support Price (MSP). Thus, dependence of local traders results in the marginal/small farmers being exposed to the vagaries of price fluctuation, especially during periods when price slumps.

Procurement

Procurement of wheat was handed over to Primary Agriculture Cooperative Societies (PACS) in 2013-14 in the state of Bihar by the state government. With wide network of ~8500 centres at village panchayat level, the move was expected to bring significant welfare gain for the farmers. However, the move failed to have any significant impact due to inherent institutional failure in PACS, as seem to emerge from the analysis. PACS have considerable potential to benefit small farmers – as they had been conceived as institutions 'of the farmers, for the farmers, by the farmers' – however, their effectiveness in benefitting ordinary farmers have diminished over time due to social and political undercurrents.

In Bihar, since Ravi Marketing Season 2013-14, number of procurement agencies were been pruned down from 7 to only 2 local entities – Primary Agriculture Cooperative Societies (PACS) under the aegis of Bihar State Food Corporation (BSFC) as the nodal agency. PACS

purchases from the farmers and sells it to BSFC, who in turn delivers it to the Food Corporation of India (FCI) – the entity responsible for maintaining the national food grain reserves.

However, on an average only about 30 per cent of the farmers surveyed in Vaishali and Saran are of the opinion that they have increased market access because of PACS. Varied opinions were observed regarding impact on price realisation across these two districts as well as across categories of farmers. In general, about 80 per cent of the small farmers do not perceive any increase in price realisation because of PACS. Moreover, the move has effectively introduced a state government monopoly in procurement of wheat in the state. Lack of cross agency competition has resulted in limited to no choice for farmers in selecting the agencies.

The farmers' experience with PACS also raises a few points. Farmers need to submit land ownership records which are issued by the local authorities (tehsil office) and require a lead time of at least a month. This creates additional barriers especially for small farmers and others who have inherited their lands. Complaints about PACS refusing to purchase farmers produce, citing quality related problems were commonly encountered. Farmers also reported a systemic bias in PACS towards paddy procurement. In addition, PACS as an organisation is politically influenced, and have not yet put in place any system of performance audit. As a consequence of all these factors, a 'broker' segment has emerged who purchases their produce from the farmers at a discounted price and sells it to PACS. Some observers feel these 'brokers' were delivering a public service for the farmers and it was a win-win.

Figure 0.6: % of farmers who reported increase in access because of PACS - Bihar

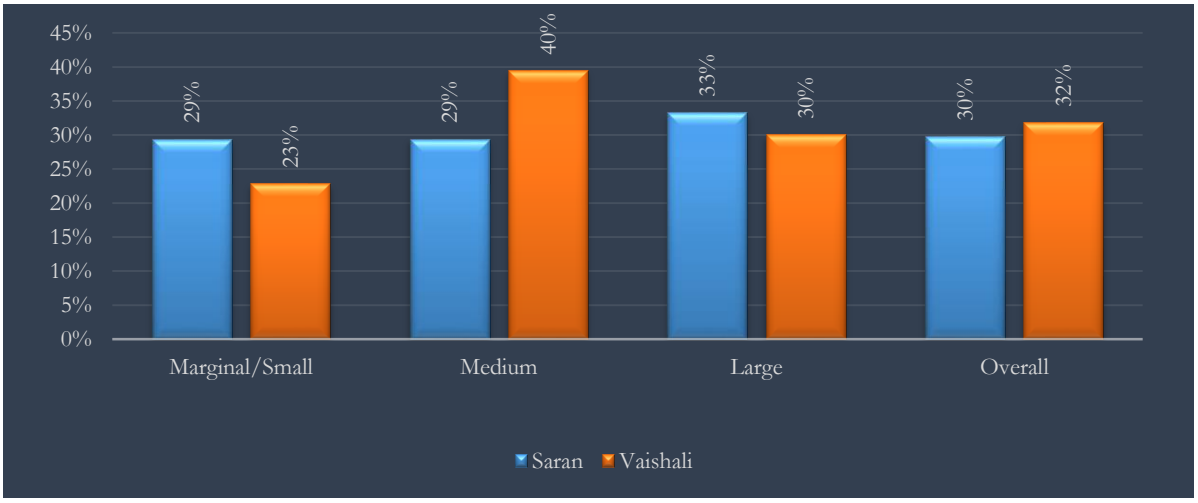
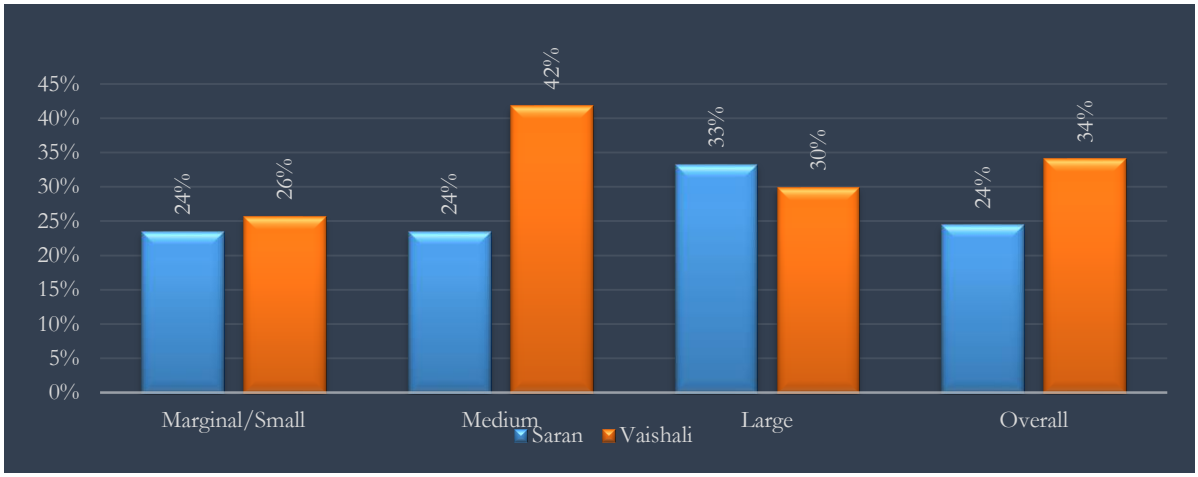


Figure 0.7: % of farmers who reported increase in price realisation because of PACS in Bihar



Rajasthan

Seeds

Rajasthan Seed Plan sets target but fails to bring in reforms covering all the important elements of the seed supply chain. As a result, Seed replacement rate in 2011-12 remains at a similar level to 2007-08.

In contrast to the positive impact of seed reforms in Bihar, minimal impact was noted in Rajasthan. This may be partly be attributable to the fact that Rajasthan has been fairly self-sufficient in seed production, especially characterised by presence of large number of private players in the state. As per record with Rajasthan Agriculture Department, 117 out of 149 registered seed producers, 78 out 111 registered seed processing plants and 6,522 out of 15384 registered seed growers were in the private sector.

But, in part, it is also due to the implementation failure of the state seed plan[29]. The target seed replacement rates for wheat was set at 50 per cent by 2011-12 at the planning stage of the seed plan in 2007-08. However, the actual data shows that the state could achieve only 30 per cent SRR in wheat by 2011-12, actually dropping from 33 per cent recorded in 2008-09 immediately after the plan implementation.

Table 0.2: Seed replacement rate (SRR) – prior year actuals and target set for wheat by the Seed Plan

	SRR (%)						Desirable SRR (%)	Planned SRR (%)			
	02-03	03-04	04-05	05-06	06-07	07-08		08-09	09-10	10-11	11-12
Wheat	14	12	16	19	19	29	50	35	40	45	50

The failure can be largely attributed to lack of micro level planning to chalk out a concrete ground level implementation strategy for the overall macro level state plan. For example, the plan avows to follow a strategy of incentivising public and private sector to develop appropriate varieties for each agro-climatic zone with focus on suitable varieties for dry land

[29] http://www.krishi.rajasthan.gov.in/

farming. However, apart from a slew of targets for the Rajasthan State Seed Corporation (RSSC), it fails to outline any policy reforms or fiscal/financial incentives for attracting more investment into the sector. Even in case of RSSC, no estimation is provided in the seed plan on the financial and physical requirements for the enhanced target, and the path to adopt to fulfil these.

Marketing

Despite ushering in reforms to enable private investment in developing agriculture markets, direct marketing and contract farming, no ground level progress could be made in absence of parallel policy reforms in related areas like public investment in infrastructure, credit policy, land policy, etc. The fine prints in the rule books also many a time proved to be a hindrance in attracting private investment.

Rajasthan is among the leading states in terms of implementation in many of the reforms as envisaged in the Model APMC Act. On paper, it has promoted e-trading, made provision for single point levy of market fee, allowed single registration/license for trade/transaction in more than one market, etc. (see tables in appendix to chapter 3 for more details). However, the actual overall progress on the field has been rather slow, especially in case of private markets and contract farming.

Even after the reform initiatives in Rajasthan, currently there are only around 130 regulated markets and 307 market sub-yards under the APMCs. The extent of failure of the reform process can be gauged from the facts that no farmer-consumer market is operational in the state, only 2 licenses have been issued for private markets, and only 1 license has been issued for trading in more than one market. Some of the factors often mentioned by stakeholders during interaction as responsible for low uptake on private initiative are:

(a) heavy security deposit for both physical market license and market functionaries operating in them;
(b) land availability for private markets/it's collection centre including change in land-use pattern;
(c) minimum distance requirement between existing APMC markets and the proposed private markets;
(d) logistical issues, especially connectivity; and
(e) large investment with low incentives (20 per cent of fees), etc.

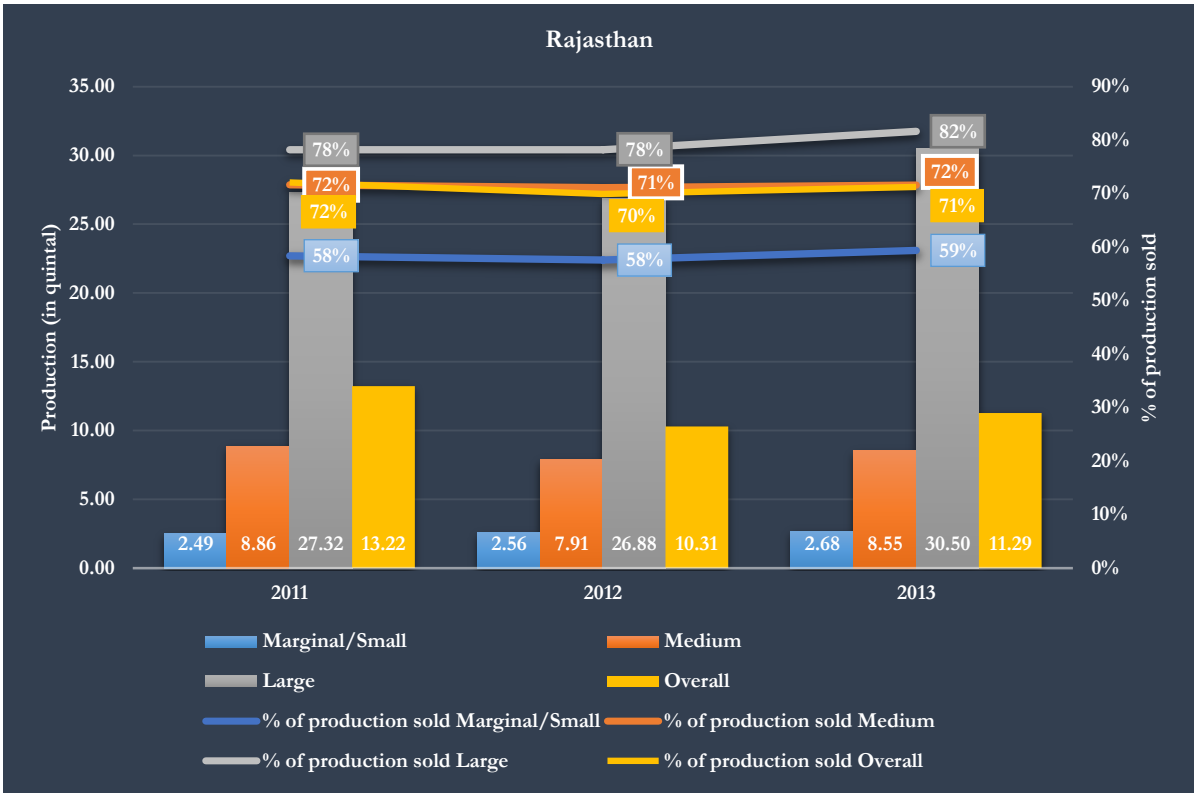
Similarly, even though contract farming is permitted in Rajasthan, none has been registered so far. The only positive has been the 76 number of direct marketing licenses issued for direct sourcing from farmers by private entrepreneurs. However, actual progress again has been rather slow with a slew of market barriers injected through the fine print[30]:

- the direct purchaser should buy minimum of 2000 MT (soya and wheat) per market yard;
- fixed deposit receipt for one day's maximum purchase to be deposited security with respective APMC;
- buying points have to be located outside municipal limits, leading to higher logistics costs due to non-availability of sufficient infrastructural support; and

[30] Report of the Working Group on Agricultural Marketing Infrastructure, Secondary Agriculture and Policy Required for Internal and External Trade for the XIIth Five Year Plan 2012-17

- need to obtain documentation clearances for every despatch from the respective APMC.

Figure 0.8: Production and proportion of production sold – Rajasthan

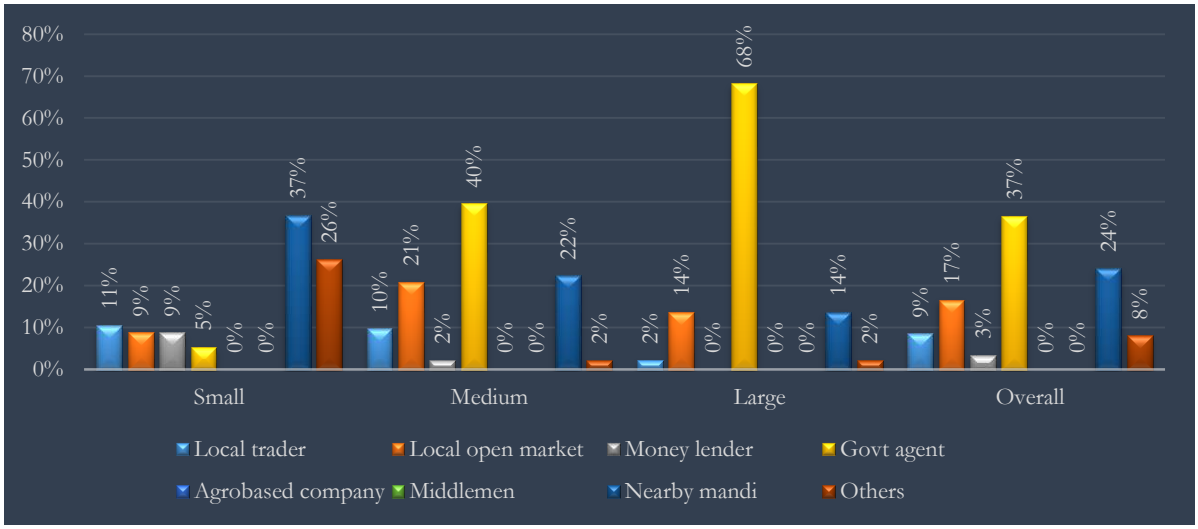


Another distortionary practice that continues is the requirement of transaction between sellers and buyers in APMC markets through licensed commission agents only (even though commissions are paid by the purchaser). This has created a barrier for entry of new players and allowed the incumbent licence holders a degree of market power.

In Rajasthan, the agriculture sector is dominated by the medium and large farmers. These groups sell almost 3/4th of their produce. In contrast to Bihar, a large part of these farmers sold their harvest to government agencies. Amongst the small farmers, majority have sold the harvest in local mandis. It is also important to mention that about 10 per cent of the small farmers sold the crop to money lenders. It is imperative that a large proportion of those who reported selling their produce to "others", must be selling it to either money lenders or some middlemen.

Furthermore, in Rajasthan a large number of farmers surveyed (Alwar and Bhilwara districts) sold their harvest to government agencies.

Figure 0.9: Whom the farmers sold their produces to - Rajasthan



Procurement

Procurement in Rajasthan continues to be done through the Agricultural Produce Marketing Committee (APMC) recognised markets ('mandi'), and as such the farmers are exposed to the negativities associated with APMC system.

In Rajasthan, apart from Central Government institutes like Food Corporation of India, state entities like Rajasthan State Co-operative Marketing Federation Ltd (RajFED) are active in procurement.

Given procurement is largely through APMC markets in this state, all negative factors affecting the APMC markets such as licensing rules, infrastructural bottlenecks, intermediation cost, lack of market integration, etc. affects farmers interested in selling to the government procurement agencies at Minimum Support Price (MSP). There have been frequent complaints of refusal citing quality issues, delay in payment, etc.

This public monopoly-like condition in the procurement node can be broken by opening the sector for private entry. The selection of the agencies may be done on the basis of open bidding, with the one asking for the lowest commission margin being the winner. This shall allow setting up more procurement centres closer to the farmers, thus increasing access and also enabling even the marginal/small farmers to avail the price security net. The wastages can also be reduced by reimbursing the private players based on the amount delivered to the warehouses rather than procured from farmers.

Additionally, procurement takes place at government declared MSP plus any additional incentive or bonus mark-up declared by the states. This declaration of MSP inhibits free market operation in price determination, especially when procurement involves 1/4th to 1/3rd of production. Moreover, though it was originally designed as a floor price to protect farmers' interests in case of a collapse in market prices, actual experience in the recent times show MSP being set above market prices under quite normal conditions and thus proving to be a highly inefficient subsidy[31]. This has also led to selection bias among farmers in favour

[31] Thomas, S., 2003, Agricultural commodity markets in India: Policy issues for growth (http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.197.6692&rep=rep1&type=pdf)

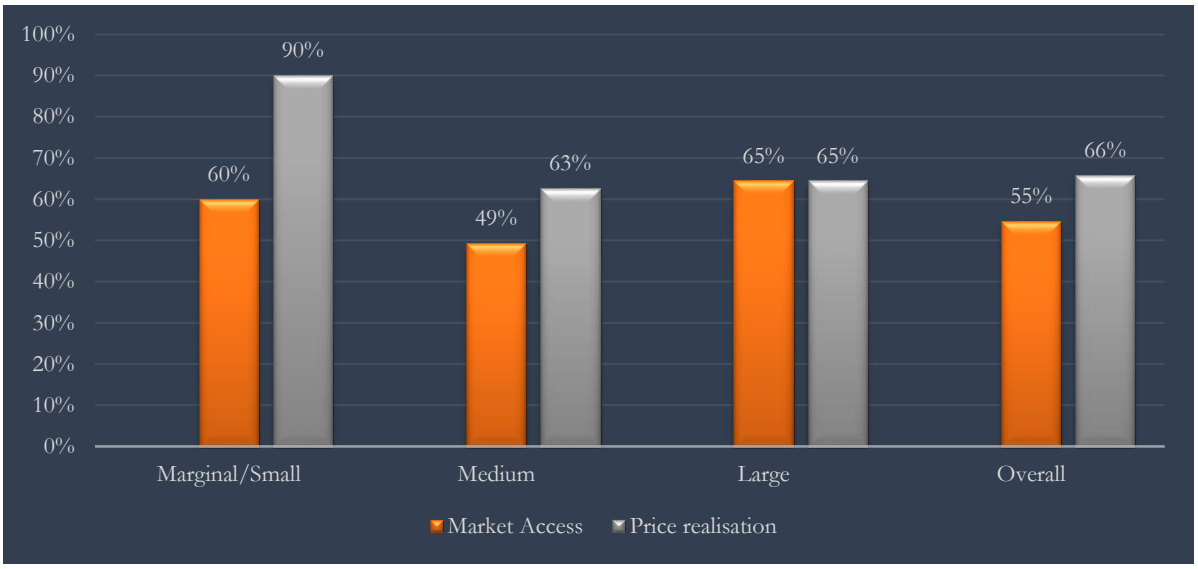
of crops with assured profitability from sowing MSP covered crops *vis-à-vis* other crops. Plus, declaration of bonus sometimes creates an arbitrage opportunity for traders, especially when it creates a disparity in procurement prices across two neighbouring states.

Decentralised Procurement System (DPS) for wheat improves price realisation of farmers but no significant impact on receipt of payment.

Recently, from Kharif marketing season 2013-14, Rajasthan has implemented DPS for wheat in Alwar district on a pilot basis. The economic cost of procurement, storage and distribution incurred by the States is fixed by the Central Government in consultation with the State Governments, and the difference is reimbursed to the States as food subsidy.

In the primary survey farmers were observed to be more satisfied with market access as well as price realisation because of DPS. It is worth noting that the proportion of surveyed farmers expressing satisfaction with price realisation is considerably higher at 90 per cent for small and marginal farmers. In terms of payment, only about 30 per cent have reported of any improvement in payment, whereas almost 50 per cent reported that no change has been observed regarding the same.

Figure 0.10: Farmers' satisfaction with DPS

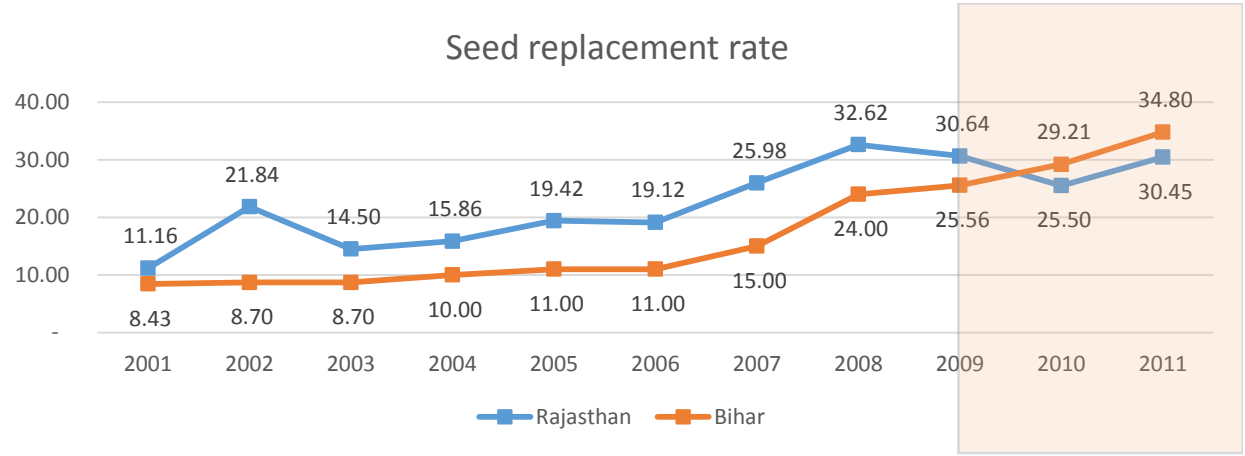


Comparison in the Findings between the States[32]

Seed

In Bihar, well-structured and funded reforms encompassing seed production, private participation, budgetary support, public schemes (state-level) initiated in the seed sector under the Agricultural Road map 2008-12 had a significant impact on seed production, availability and usage. In contrast, the Seed Plan prepared by Rajasthan, has not been a subject of such focused implementation, perhaps on account of the fact that the state has been self-sufficient in seeds. Annual data available for 2000-01 to 2010-11 shows that Bihar overtook Rajasthan in SRR by 2010-11 from a 9 percentage point deficit in 2007-08.

Figure 0.11: Seed replacement rate in Bihar and Rajasthan

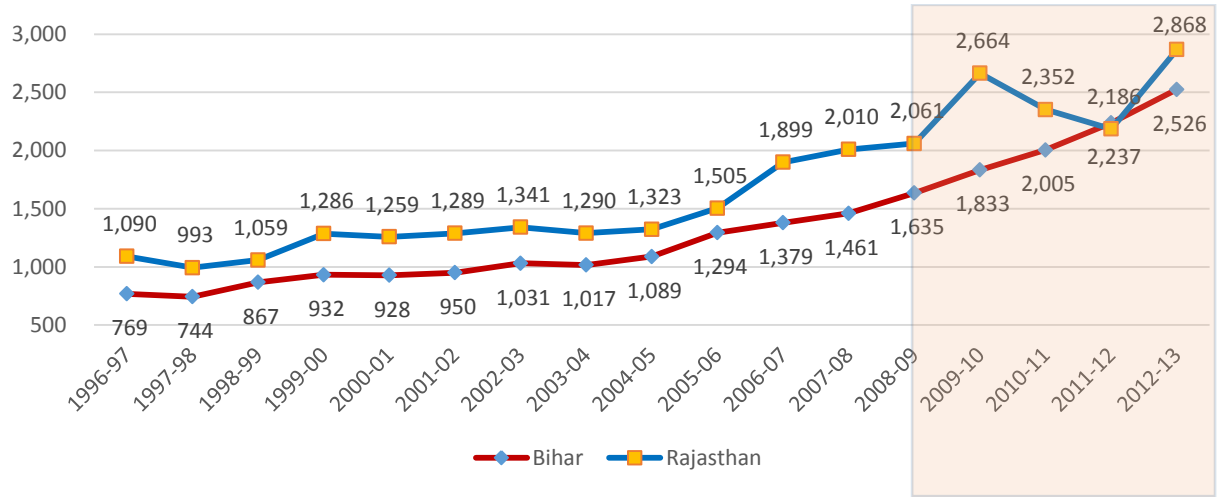


Source: http://seednet.gov.in/Material/SRR-13.pdf

Expenditure on seed per hectare is on the rise, and more so in case of Bihar despite success in raising local seed production – whereas cost in Bihar was 73 per cent of Rajasthan in 2007-08, it increased rapidly to become 88 per cent in 2012-13. In fact, in 2011-12, the cost in Bihar had crossed Rajasthan. Similarly, expenditure on seed, both as percentage of total cost and operational cost of cultivation of wheat, also do not reflect any significant reduction in expenditure on seed in Bihar post reform. This likely indicates continued local demand-supply gap despite the recent improvement in the seed sector, especially considering the low base from which Bihar started.

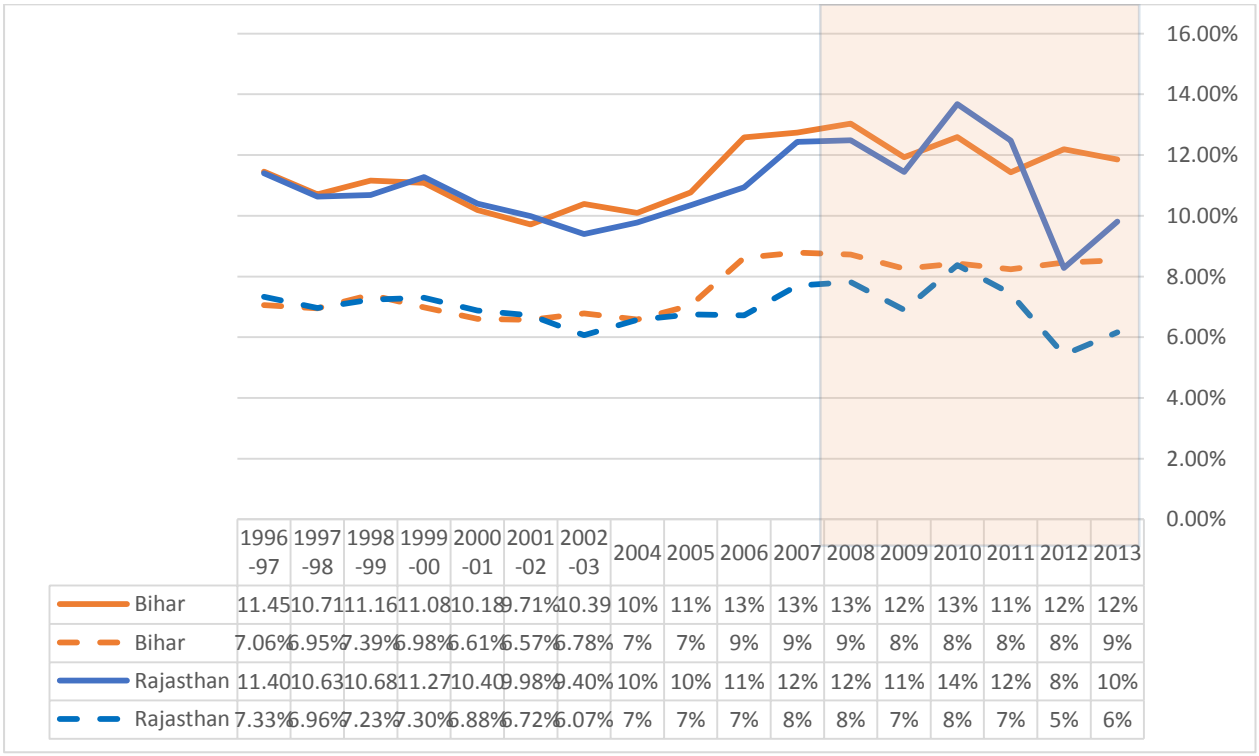
[32] See Appendix to chapter 3 for a detailed state of affairs in the two states under study in fertilizer sector, warehousing and targeted public distribution system.

Figure 0.12: Expenditure on seed per hectare (in Rs.)



Source: Commission for Agriculture Costs and Prices

Figure 0.13: Expenditure on seed as % of operational cost (OC) and total cost (TC) of wheat cultivation per hectare



	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bihar	11.45%	10.71%	11.16%	11.08%	10.18%	9.71%	10.39%	10%	11%	13%	13%	13%	12%	13%	11%	12%	12%
Bihar	7.06%	6.95%	7.39%	6.98%	6.61%	6.57%	6.78%	7%	7%	9%	9%	9%	8%	8%	8%	8%	9%
Rajasthan	11.40%	10.63%	10.68%	11.27%	10.40%	9.98%	9.40%	10%	10%	11%	12%	12%	11%	14%	12%	8%	10%
Rajasthan	7.33%	6.96%	7.23%	7.30%	6.88%	6.72%	6.07%	7%	7%	7%	8%	8%	7%	8%	7%	5%	6%

Source: Commission for Agriculture Costs and Prices
Note: The years indicate end of financial year. For example, 2004 represents 2003-04, and so on.

Marketing

Despite the contrasting reforms undertaken in the select states, it is clear that neither of the states succeeded in effectively bringing producer welfare. Private investment is still meagre while direct marketing or contract farming has failed to gain popularity among farmers and/or private investors. As such, no significant benefits accrued to the farmers.

The Rajasthan experience highlights the need for bringing harmony across the multiple policy verticals (both legislative as well as administrative) having an impact on the sector. For example, no farmer-consumer market is operative in the state and only 2 licenses have been issued for private markets despite adherence to the model APMC Act, ostensibly due to factors such as (a) heavy security deposit requirement, (b) problems in land availability/acquisition or changing usage pattern, (c) minimum distance required from existing APMC markets, (d) logistical issues, like assured water, electricity availability and/or road/rail connectivity, (e) large investment with low incentives (20 per cent of fees), etc. A relative position of the state *vis-à-vis* some other reform states is presented below:

Table 0.3: APMC reform relative status

Name of the progressive State/UT	**Number farmer-consumer markets operated and managed by State Govt./APMC**	**Number of direct marketing licenses issued for direct sourcing from farmers by private entrepreneurs**	**Number of contract farming cases registered**	**Number of licenses to private markets issued**	**Number of licenses issued for trading in more than one market**
Rajasthan (fully reformed)	-	76	Permitted but not registered so far	2	1
Maharashtra (fully reformed)	-	107 (48 operational)	7	23 including 3 Terminal Market Complex (TMC)	38
Andhra Pradesh (fully reformed)	107 Rythu Bazaars functional	171	1	4	-
Gujarat (fully reformed)	-	17	2	13	No provision
Karnataka (fully reformed)	15 Raithara Santhe functional	9	Permitted but not registered so far	3	249
Madhya Pradesh (partially reformed)	-	2	1	No provision existed	8
Haryana (partially reformed)	37 Apni Mandi functional	Provision has recently been made as per State Govt.	6	Permitted	
Punjab (partially reformed)	26 Apni Mandi functional	22	1 and 8 old registration	Not permitted	
Tamil Nadu (through executive orders)	179 Uzavar Sandhai functional	-	5	6 (including Terminal Market Complex)	No provision

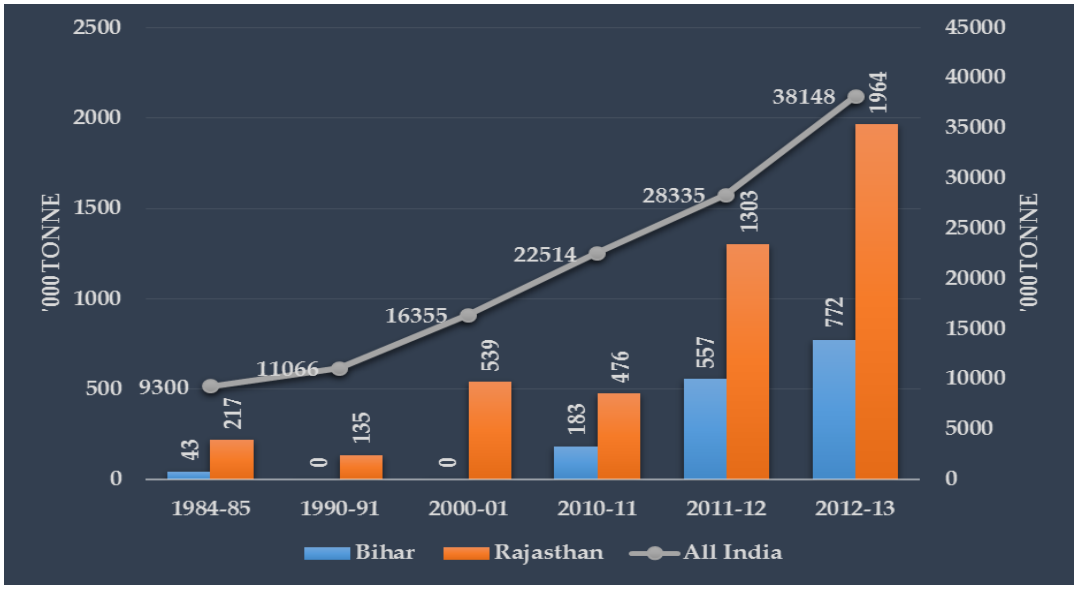
In the case of Bihar, even though the market infrastructure created under APMC continues to operate even after repeal of the Act, their operations now are unregulated as far as provisions of erstwhile APMC Act are concerned. There is no government oversight of the trade practices like pricing dynamics, terms, mode and regularity of payment, number of players, cartelisation, etc. Moreover, withdrawal of state was also accompanied by decline in public investment in agricultural marketing infrastructure. Even though legislative freedom was available for private entry, the state government failed to develop a holistic attractive investment environment by its neglect of related policy parameters. Associated support initiatives such as gap financing, easier credit availability and lower cost, good connectivity, reducing administrative red tapes, etc. were also marked by their absence. Factors such as predominance of marginal and small farmers in Bihar, with average landholding size barely a third of national average at 0.39 hectare, also acted as a considerable irritant in popularising direct marketing or contract farming.

Analysis of the divergent experiences of these two states show the limitations of the model Act in ushering private investment, and at the same time brings out the fact that complete abolishment of APMCs as demanded by many may not be the appropriate answer. A harmonised multi-pronged policy approach encompassing land, infrastructure, connectivity, administrative reform, credit, investment, etc. will be required to address this multi-faceted problem.

Procurement

There was almost zero to negligible procurement from Bihar in the initial period, and the process started only recently. In 2008-09, procurement from Bihar was 499,000 tonne only, which increased to reach 772,000 tonne by 2012-13. The state share in national procurement over the period was ~2 per cent. The rate of growth in the state at 12 per cent pa was also lower than the national average of ~14 per cent. Moreover, post introduction of local procurement through PACS in 2013-14, no wheat procurement could took place as the market price was higher in Bihar compared to the Minimum Support Price (MSP) declared by the Government.

Figure 0.14: Wheat procurement



Source: Commission for Agricultural Costs and Prices, Department of Food and Public Distribution

In case of Rajasthan also wheat procurement has been marginal, though the state fared better than Bihar. Over 2008-09 to 2012-13 period, procurement grew at the rate of 20 per cent pa to reach 1964,000 tonne from 935,000 tonne. The higher-than-national growth rate led to its share in procurement rising from 4 to 5 per cent over the period.

Key Findings and Recommendations

The prevailing policy stance of the government across the wheat supply chain in the two states varies widely. Consequently, the market environment that has developed is also considerably different. One common feature in almost all the segments of the supply chain studied is that the impact on competition and welfare is a joint culmination of a web of policy measures and government actions.

Seed sector reforms

The success of the seed sector in Bihar was buoyed by effective implementation of the reforms and strengthening of the government institution (BRBN). Further the channels were made to attract private investments.

As per the research undertaken, it was found that quality seed production increased seven fold. The number of private players also increased from 1 to over 10. The farmers surveyed also reported increased access, increased reliability of supply and higher purchase, quality improvement and better affordability. Higher seed production and better accessibility also led to an increase in seed replacement rate in wheat and yield. However, despite commendable progress in ushering in private participation in the sector, a few areas such as more intensive ground level initiative for ensuring quality standards of seeds and price monitoring need further attention to keep a check on unscrupulous elements.

The Bihar seed sector reforms reflect a clear example of pro-competitive reforms bringing benefits to producer and consumer (here, farmers) welfare. It is argued that such reforms be advocated and replicated in other states of India where seed sector is dominated by public players and suffer from lack of availability and quality.

Agricultural marketing

With agriculture being a subject of the state legislature under Indian constitution, the APMC reform experience since 2003 have been quite divergent across the states. While Rajasthan went the whole hog to introduce legislative provisions for private markets, contract farming and direct marketing, Bihar went for a complete repeal of the APMC Act. However, despite these completely diagonal approach of the two states, the marginal impact on private participation and competition have been quite similar – one of failure.

The Rajasthan experience again highlights the need for bringing harmony across the multiple policy verticals (both legislative as well as administrative) having an impact on the sector. For example, no farmer-consumer market is operative in the state and only 2 licenses have been issued for private markets despite adherence to the model APMC Act, ostensibly due to factors such as (a) heavy security deposit requirement, (b) problems in land availability/acquisition or changing usage pattern, (c) minimum distance required from existing APMC markets, (d) logistical issues, like assured water, electricity availability and/or road/rail connectivity, (e) large investment with low incentives (20 per cent of fees), etc.

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Procurement

In Bihar, procurement monopoly is enjoyed by the PACS. They have a grand network of about 8500 and are present at every panchayat level through the state. However, in spite of the given network, the PACS have been unable to gain momentum in procurement. While big farmers prefer to sell in the market (as market price is higher than the MSP at which the PACS buy), small and marginal farmers prefer to sell to local traders as it does not entail showing any official documents (as required by the PACS). This structure exists in spite of the fact that both local traders as well as the PACS provide payment at the time of sale.

There is a crucial need to revamp the PACS in order to meet the objective of the institution. While the institution is marred by political influence and loose administrative structure, it is critical to note that the organisation also suffers from financial paralysis. While they are mandated to provide payment to farmers at the time of buying, they receive payments only after the produce is forwarded to the BSFC and then the FCI. Once the FCI obtains the produce, it releases the payment for the BSFC and the PACS, which comes with a lag of minimum one month. There are no guidelines or rules or mechanisms to build their capacity in place to strengthen them.

It is recommended that as the PACS was envisaged as an institution to enhance the competition between farmers by providing them credit and platform to sell, process be undertaken to empower the institution. Clear guidelines be slated for them and financial stability be provided. The PACS structure and best practices in other states be looked at where they are performing well.

4. Competition Reforms in Bus Transport Sector and Implications on Beneficiaries (Gujarat and Madhya Pradesh)

Introduction

The level of development and efficiency of the transportation sector of a country has a significant direct and indirect impact on its economy. At the macroeconomic level, a more efficient transportation system enables greater mobility of inputs (including manpower) and outputs, ensuring better productivity and competitiveness. At the same time, at the micro-economic level, transportation has a varied impact on producer, consumer and production cost.[33] In parallel to the direct impacts of transportation sector, the indirect impacts of an efficient network are equally important. It opens the access to the rural and semi-urban markets, more uniform spread of economic development, more cultural exchange, assimilation and unity – all helping in its own way to build a stronger nation.

Transport sector in India includes various alternative modes like roads, railways, aviation, inland waterways and shipping, giving a wide variety of choice for conveyance of goods and ferrying people across the country. However, road transport remains the backbone of the system. While the transportation sector as a whole accounted for 6.5 per cent of GDP in 2011-12, road transport alone accounted for 4.8 per cent of GDP with railways at a distant second position at 1 per cent of GDP.

Transportation, under the Indian Constitution, belongs to the dual list, allowing both Central/ Federal and State Governments to promulgate legislation on this sector. Motor Vehicles Act (MV Act), 1939 and Road Transportation Corporation Act (RTC Act), 1950 enacted by the Central Government are the two overarching Central legislations that govern the sector in India. These legislative changes enabled State Governments to establish State Road Transport Undertakings (SRTU) to offer bus transport services, and also empowered them to nationalise road transport services. These limited the scope for private participation and thus restricted competition.

The focus of this report is on the bus transport market as this market offers good scope for private participation and allows direct and immediate impact of any reform measure on both passengers and operators because of the close contact between them.

This chapter looks at the regulatory structure in the bus transport sector in the states of Gujarat and Madhya Pradesh. Both the states have formed the various institutions in bus transport, as per the provisions of the parent act i.e. the MV Act. The narrative focuses on the various barriers the state specific regulatory environment poses in the intercity and intracity bus market. The chapter also mentions the comparison between the two states. The competition concerns are highlighted throughout the flow of the narrative.

[33] Rodrigue, J. P. and Notteboom, T., The Geography of Transport System, Chapter 7 – Transportation and the economy (http://people.hofstra.edu/geotrans/eng/ch7en/ch7menu.html).

Selection of States and Cities

Based on the objectives of CREW project, the selection of states and cities for bus passenger transport sector in case of India were based on certain criteria. First, the state as well as city should be large enough to ensure high demand for inter-city and intra-city travel. These should be higher level of economic activities as well as large number of fast growing economic centres. Similarly, on the supply side, the infrastructure facility such as road network should be large. To reduce analytical complication, it was desired that substitutes to bus passenger transport should not be significant.

Based on these, first, the top 10 capital cities in terms of total population were shortlisted for further consideration, with the only exception being Ahmedabad considering its size in terms of population as well as its pre-eminence as the economic hub of Gujarat. These capital cities also belong to larger states with multiple cities, enabling us to study the inter-city transport network too without any problem.

A step wise analysis, detailed in appendix to chapter 4, led us to select Ahmedabad, Gujarat and Bhopal, Madhya Pradesh (MP) based on comparison of the reforms undertaken regarding the bus passenger transport sectors in these. Whereas Ahmedabad, Gujarat, followed a public sector dominated transport system in both intra and intercity routes, Madhya Pradesh allows far greater private participation since the abolishment of Madhya Pradesh State Road Transport Corporation (MPSRTC) altogether in 2005.

Overall Bus Transport Policy Environment in Gujarat and Madhya Pradesh, and Recent Reforms

Gujarat

The bus transport services in Gujarat are largely dominated by the public sector SRTUs under the provisions of the MV Act and RTC Act. The aforementioned legislations also authorises state governments to nationalise the road transport services in the state in general or any particular class of such service in relation to a particular area or route or a part of it if it deems such an act to be in public interest[34]. Such reservation may be effected in favour of the SRTUs with partial or complete exclusion of other persons or entities. It also authorises the State/ Regional Transport Authorities to refuse any application for grant or renewal of permit by private entities, cancel existing permits, modify terms to limit its validity period or authorised number of vehicles or route covered[35].

The Government of Gujarat has nationalised its intercity and intracity routes creating monopolies of the SRTUs. In the regular intra-city segment (city bus transport) in Ahmedabad, the SRTU of the municipal corporation (through its transport wing) has been enjoying legal monopoly since around independence. Recently, this has been extended to the city Bus Rapid Transport (BRTS) system. In case of inter-city, Gujarat State Road Transport Corporation (GSRTC) enjoys a monopoly in the stage carriage routes. The general public sector dominance of the sector and its resultant impact on market structure, competition and welfare has been discussed below.

[34] Section 99 – Preparation and publication of proposal regarding road transport of a state transport undertaking.
[35] Section 103 – Issue of permits to state transport undertakings

The general public sector dominance of the market and its resultant impact on market structure, competition and welfare has been discussed in this chapter.

Intra-city Regular Bus Services (Ahmedabad)

Based on the provisions in the MV Act and RTC Act as mentioned above, the regular intra-city services in Ahmedabad is under the administrative control of the transport wing of Ahmedabad Municipal Corporation (AMC) through its SRTU, Ahmedabad Municipal Transport Services (AMTS). As a result of the reservation in favour of the local SRTUs, there is complete absence of any direct competition. Being a legal monopoly, there is no threat of new entry, no competitive rivalry and no threat of substitution.

With no other significant alternative mode of mass public transport at the intra-city travel, the SRTUs do not face any inter-modal competition. Moreover, fares are not decided by market forces of demand and supply, or cost of inputs. AMTS has an internal committee for fare revision and recently have put in place a state government approved (annual) fare revision formula. However, such formula mainly focuses on the incremental changes in cost of main inputs like fuel, bus prices, overall inflation, etc. but fails to address the historical imbalance between cost of operation and income earned. This has been one of the main contributory factors for its continued dependence on subsidy.

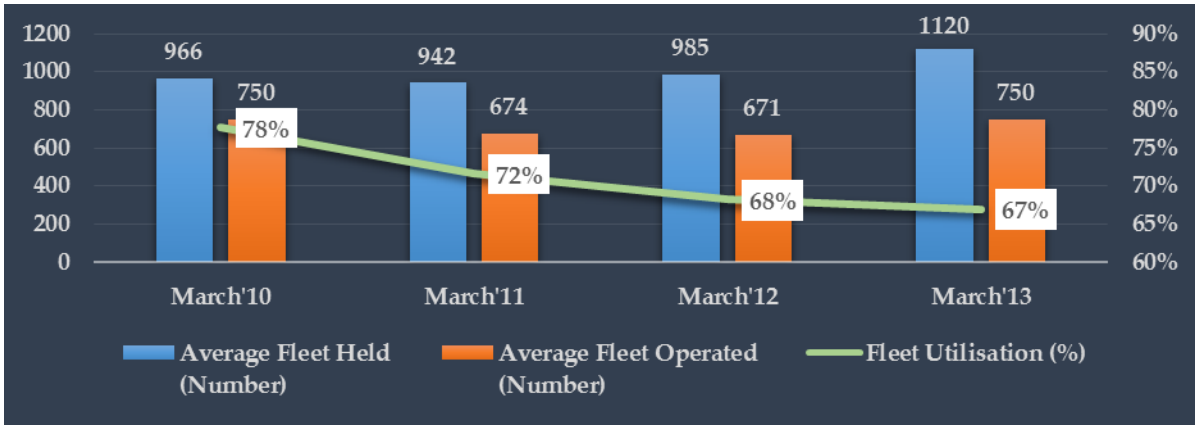
Though the regulatory environment does not allow direct entry of private bus operator in the regular intra-city bus services in Ahmedabad, private bus owners have gained an indirect entry into the system as service providers to AMTS. This has arisen due to the shortfall in the AMTS fleet size relative to the requirements and also the limitations of its maintenance facilities.

As per the information provided by the AMTS officials in March 2014, around 170 AMTS owned buses have been leased out for operation and maintenance, whereas AMTS had hired around 210 buses from private bus operators on own-operate-maintain basis. Matched with the data available from Transport Research Wing, Ministry of Road Transport and Highways as presented below, the number of buses operated by private operators servicing the AMTS network translates to around half of the AMTS operational fleet.

In short, despite the legislated public monopoly, almost half of the intra-city bus services in Ahmedabad is privately operated. This is because the AMTS is unable to meet the demand of passengers by its own operational capacity.

The selection of these private bus operators by AMTS is through open tenders. Post selection, the private operators have to operate as per the schedule given by AMTS, on the routes as specified. Moreover, as the operators are paid a fixed sum on per km basis (currently around Rs 52 per km) and assured daily run of approximately 200 km per bus, there is an assured revenue for the winning bidders and no incentive to provide a better service than others.

Figure 0.1: Operated fleet size of AMTS largely static; fleet utilisation on the decline



Source: Transport Research Wing, Ministry of Road Transport and Highways

In other words, all the inefficiencies of public monopoly are retained while private operators run half the network without enjoying any flexibility/incentive to innovate or provide better services. Additionally due to the policy restriction, these private operators are unable to use their brand name on the buses as they strictly operate under AMTS. Worse still, the operational cost efficiency of the private operators is also lost to AMTS as they are bound to pay on per km basis.

Intra-city Bus Rapid Transportation System (BRTS) services (Ahmedabad)

As in the regular bus services case, the BRTS services in Ahmedabad is also under the administrative control of Ahmedabad Municipal Corporation (AMC) based on the provisions in the MV Act and RTC Act as mentioned above. BRTS was introduced in Ahmedabad in 2009 as part of the overall urban mobility plan. Ahmedabad Janmarg Ltd was incorporated as a "Special Purpose Vehicle" by AMC to operate the BRTS service. It is a 100 per cent subsidiary of AMC, registered under Companies Act, 1956.[36] Janmarg being the sole authority with the legal mandate to run BRTS services, there is no direct competition. Apart from running the bus services, the decision on fare, routes, schedules are also the sole domain of Janmarg, with no participation from the selected bus operator.

In contrast to AMTS, which runs its own fleet of buses, BRTS model runs on a Public Private Partnership (PPP) model. Unlike AMTS, Janmarg here performs more of a regulatory role, and does not run the bus services itself. Hiring of private service providers like bus operators, maintenance services, security services, ticketing services, IT services, etc. are made by Janmarg through open bidding. The terms and conditions of such services are pre-specified by Janmarg.

Currently, there is only one private operator who runs the full Ahmedabad city BRTS service. A round of bidding is in process to allow a second operator, though even with two players the operators will be allocated mutually exclusive routes.

[36] As per the Memorandum of Association, Municipal Commissioner is the Chairman of the Ahmedabad Janmarg Ltd.

For both AMTS and Janmarg the revenue is collected through 'gross cost model'**.** Under gross cost system, the fare is collected by these SRTUs and a pre-decided per km charge based on actual running of bus is provided to the operator. As such, the revenue risk is borne by the SRTUs, allowing operators to run an assured return based on distance covered. The competitive bidding as a result in this system is made on the charge per km – the one quoting the lowest charge becomes the winner.

Inter-city Services

Gujarat State Road transport Corporation (GSRTC) was formed in 1960 under the provisions of the RTC and MV Act as mentioned earlier, mandated with providing inter-city bus services both within Gujarat and neighbouring states. In the initial phase, both GSRTC and private operators co-existed in the market. However, taking advantage of the provisions of MV and RTC Act, in 1994 Government of Gujarat reserved the stage carriage segment in the inter-city routes for Gujarat State Road Transport Corporation (GSRTC). As a result, only GSRTC henceforth had the stage carriage permit to operate its inter-city service whereas all the private operators in the inter-city segment were given contract carriage permit.

Despite the legal monopoly accorded to GSRTC in stage carriage permits, the reservation does not seem to be having its intended impact in the recent past – the fleet size and passenger carried have declined. This gradual decline in GSRTC fleet has resulted in considerable supply shortage in the stage carriage segment in the face of fast expanding demand. The expanding supply-demand gap has led to a grey market where private operators with contract permits have started to ply the inter-city routes as *de facto* stage carriages.

Table 0.1: Physical performance of GSRTC over the decade

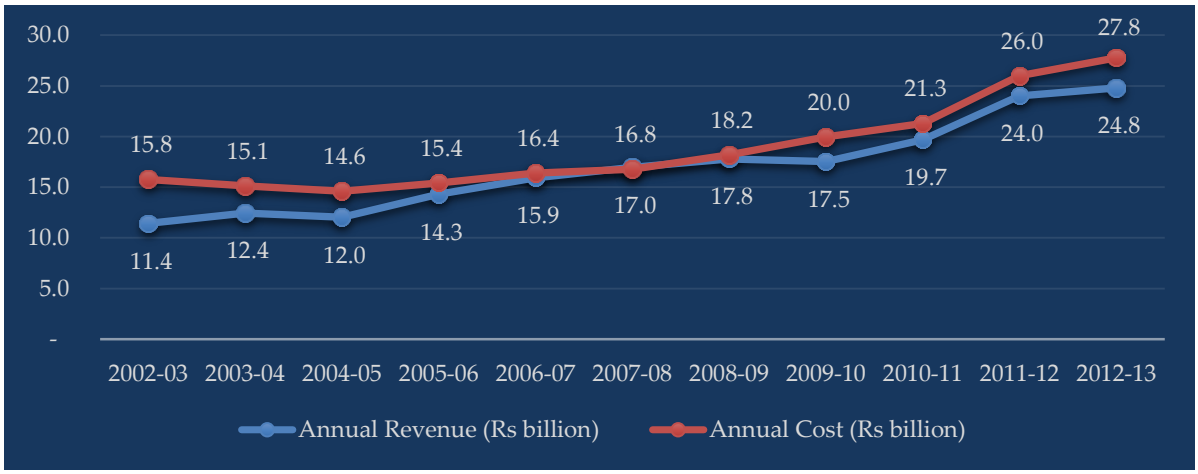
	Mar-03	**Mar-08**	**Mar-13**
Average Fleet Held (Number)	9,097.00	8,069.00	7,719.00
Average Fleet Operated (Number)	7,793.00	6,932.00	6,694.00
Revenue Earning Kms (Billion)	1.0126*	0.9,97	1.0349
Staff Strength (Number)	50,324.00	44,557.00	40,370.00
Fuel Efficiency (Km/litre of HSD)	5.20*	5.37	5.50
Passenger Kms Offered (Billion)	52.13	50.38	50.82
Passenger Kms Performed (Billion)	35.17	31.83	35.15
Passenger Carried (Billion)	1.27	0.85	0.84

Source: Transport Research Wing, Ministry of Road Transport and Highways
Note: As on March 2004.

This gradual decline in GSRTC fleet has resulted into a gradual build-up of excess demand in stage carriage service in the state, being fulfilled by the clandestine entry of private operators in the face of continued legislative monopoly for GSRTC.

Apart from the declining size, the inefficiency in the operational aspect of GSRTC can be seen from the consistent phenomenon of cost overshooting revenue, even though the revenue growth rate over the period has been marginally higher than the increase in costs.

Figure 0.2: Cost overruns revenue consistently, requiring ever increasing external support



Source: Transport Research Wing, Ministry of Road Transport and Highways

Madhya Pradesh

Madhya Pradesh State Road Transport Corporation (MPSRTC) was set up in 1962 to provide bus service to rural and urban passengers on no-profit and no-loss basis. From an army of 36,000 buses in the early 90s, it was left with only 1,800 buses by 2000; but the staff strength remained disproportionately high at 13,000[37]. At the time of abolishment in 2005, it had a fleet of around 1500 (of which on an average 1,000 were on road) and 11,500 employee – implying more than 11 staff per operational bus. Monthly losses of MPSRTC were running into Rs50mn per month, with accumulated salary backlog itself touching Rs450mn. The closure was estimated to cost the state government Rs12bn[38], including cost of offering voluntary retirement services to the staff.

Inefficiency caused due to monopoly, massive entry of private transport operators who were running buses legally or illegally taking advantage of a small enforcement team with the transport commissioner, negative unionism and strikes, massive pilferage of resources, etc. are the main reasons cited for the considerable losses and the resultant closure in 2005[39]. A study by Singh and Anand in 2003[40], which compares 23 SRTUs having 700+ fleet size as on March 2001 on their efficiency, also finds MPSRTC to be the least efficient SRTU in the lot.

This closure resulted is a significant change in bus transport system both at intra as well as inter city level, as has been presented below:

Intra-city Regular Bus Services (Bhopal)

In the case of Bhopal, a Special Purpose Vehicle (SPV) called *Bhopal City Link Limited (BCLL)*, majorly owned by the Bhopal Municipal Corporation was set up in 2006 soon after the abolishment of the MPSRTC. It has been tasked with operating and managing the public transport system in the city of Bhopal. The legislative monopoly accorded to BCLL in the intra-city bus transport segment implies that the private players cannot enter the sector on

[37] Hindustan Times, October 15th, 2012; Page 2.
[38] http://www.downtoearth.org.in/node/9032
[39] Hindustan Times, October 15th, 2012; Page 2.
[40] Singh S. K. and Anand V. (2003), 'Comparing Efficiency across State Transport Undertakings: A Production Frontier Approach,' *Indian Journal of Transport Management* 27(3): 374-391.

their own, but only as a service provider to BCLL. This creates a public legal monopoly situation in the intra city market in Bhopal.

In such a legal monopoly condition, the spread of the network, the number of buses to put on the road, identifying the bus routes, the variation in services, etc. all become part of an administrative decision making process with limited scope for market. All buses are registered in the name of municipal commissioner, the permits are also held by BCLL, the operational decisions like route determination, fare determination, bus schedule preparation, etc. are also handled by BCLL in cooperation with other public bodies such as Bhopal Municipality, Road Transport Authority (RTA), Public Works Department (PWD), etc. The infrastructure like road, bus stops, depots, etc. is provided by BCLL.

The operation of buses are through private bus operators, who are chosen through open route-wise competitive bidding. The private operator is responsible for fleet acquisition, maintenance, manpower and operation of the service. As of now, there are two private operators – (a) Prasanna Purple and (b) Capital Roadways, currently operating on 11 regular routes (apart from 1 BRTS route). Out of these, 8 are operated by Prasanna Purple with around 150 buses and the remaining 3 by Capital Roadways with around 75 buses.

It needs to be noted that on winning the bids, the winner thereafter enjoys monopoly over its routes over the contract period of 8 years. Even though two operators are active, they ply on mutually exclusive routes, with no direct competition among them. As such, the extent of service provided is based solely an outcome of the bureaucratically set out contractual obligations between BCLL and private operations with no role for market based competition.

BCLL follows a net cost model in choosing the operators where the operators have to pay BCLL a pre-agreed fixed royalty amount per bus (around Rs5000 per month per bus), but collect fare on 'as is basis' which will vary based on actual number of passengers travelled. This secures the revenue of BCLL, whereas gives the operators an incentive to try to optimise revenue collection and cost incurred.

Intra-city Bus Rapid Transportation System (BRTS) Services (Bhopal)

The BRTS system in Bhopal is comparatively a very recent introduction. It started operation in September 2013. The legislative monopoly accorded to BCLL in the intra-city segment in Bhopal extends to the BRTS system. Thus, unlike Ahmedabad which has two different entities to run its regular and BRTS bus services (viz. AMTS and Janmarg), BCLL in Bhopal controls both intra-city BRTS and regular services.

Similar to Janmarg in Ahmedabad, BCLL in Bhopal also acts as a kind of regulator of the BRTS system and possesses the power of making operational decisions like determination of bus routes, allocation of routes, preparing bus schedule, revision of fare, etc. The bus operation on the ground, however, is run by private operators, who are selected through competitive bidding. As of now, BRTS system in the city is run by one single operator - Capital Roadways.

Currently, the Bhopal BRTS system has a 24 km single operational corridor, spread from Misrod to Bairagarh. The corridor consists 82 bus shelters at an average distance of 500-700 kms. Currently the BRTS services are being run by 12 low floor ultramodern A.C. buses, each of which runs around 200 km - 210 km a day. The average frequency of buses is currently around 18 minutes. The BRTS services are equipped with state of art GPS system,

passenger information system, passenger announcement system, CCTV cameras and other safety features.

Inter-city Services

With abolishment of MPSRTC in 2005, the inter-city bus passenger transport sector was thrown open for entry by the private bus transport operators. This opened up a closed market reserved by legislation for the public operator for open competition among the interested players

The choice of type of permit (stage or contract) is now left at the discretion of the service provider, who is free to decide based on the service they want to provide. There is currently no restriction on the number of permits or fleet size for the private players. These permits are issued for a period of 5 years, and are renewable on the basis of the demand on the route and the condition of the vehicle. The RTA are authorised to specify the stage rates and all the operators are required to charge fares based on these rates.

Though the market currently is dominated by the private players, it is fragmented with none enjoying any significant market power. The estimated number of private operators in Bhopal alone is likely to be around 200 as per the industry players, with fleet size ranging from a single bus to up to 20-25 buses.

One shortcoming of the reform measure has been the failure on the part of the state government /state transport authority/regional transport authority to strengthen the system of regulatory oversight of the inter-city bus transport sector. Though on paper the system of permit issuance has checks like inspection of bus quality (such as road worthiness, pollution, etc.), ensuring proper bus route allocation and scheduling, fare setting by RTA, etc., in the absence of strong and effective regulator the situation on the ground looks to be far different from the desired. Interactions with various local stakeholders suggested that operators pick and choose routes based on profitability, often dropping unprofitable routes and plying on routes not allocated to them.

Comparative Assessment of Intra-city Segment (Ahmedabad & Bhopal)

The transport related policy measures in place in Ahmedabad and Bhopal as discussed in the previous sections give rise to a number of competition and welfare concerns. Some of the major ones are compared below. Apart from secondary information, the comparative assessment incorporates the feedback received from government officials, public and private operators in the course of in-depth interview sessions, as well as perception survey conducted on intra-city bus passengers.

Regular Intra-city Bus Transport

Legal monopoly for the public operators in both cities - legislative barrier to entry, no competitive rivalry – results in embedded inefficiencies in the system.

In a public monopoly situation, the spread of the network, the number of buses to put on the road, identifying the bus routes, the variation in services, etc. all become part of an administrative decision making process with limited scope for market forces to play a role in such decision making. With no competition, the operating performance of the SRTUs gets stricken with inefficiencies. In addition, in such an administrative decision making process

where ultimate administrative control rests in the hands of a municipality elected through a political process, the decision taken are always exposed to populist political pulls and pressures.

The general tendency of public operators to emphasise on minimal fare rise with lesser priority on operational efficiency plus input costs results in a flatter trajectory for revenue while costs keep rising. Over time this results in a ballooning gap between revenue and costs, putting solvency of the operator at risk. The extent of inefficiency is also exemplified by AMTS – its staff cost is more than twice the cost of fuel, tyres & tubes, spares.

Figure 0.3: Cost overruns revenue consistently and expanding rapidly, requiring ever increasing external support

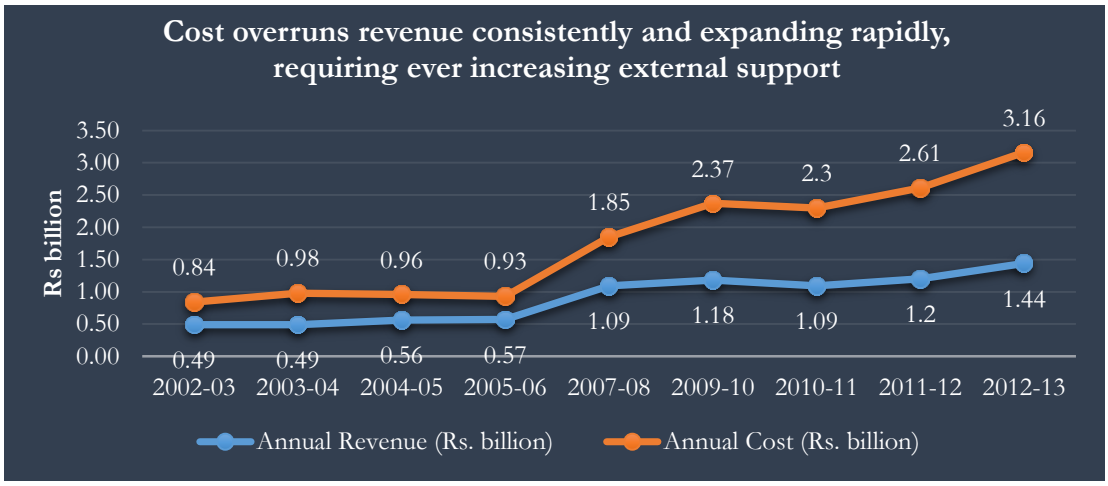
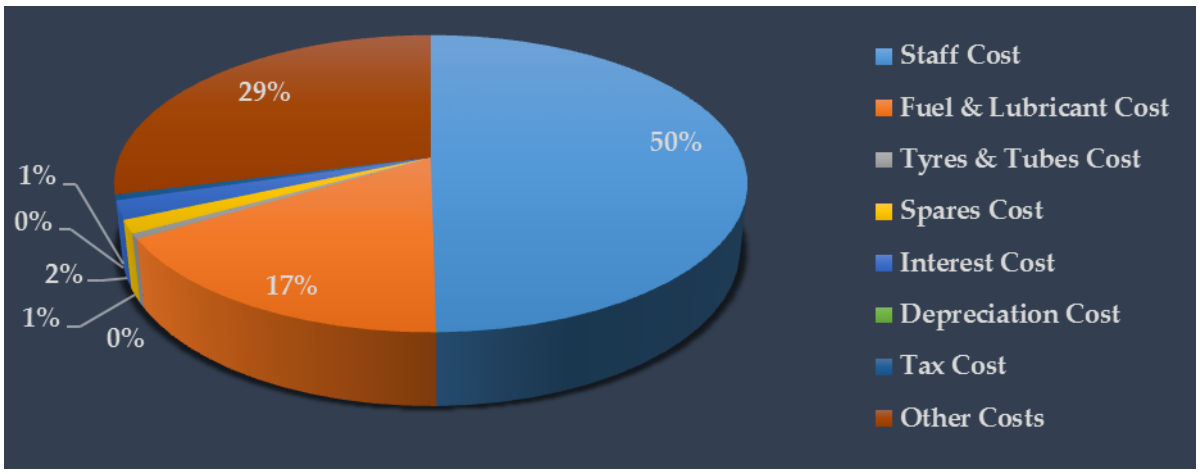


Figure 0.4: Staff cost accounts for half of AMTS total cost (2012-2013)



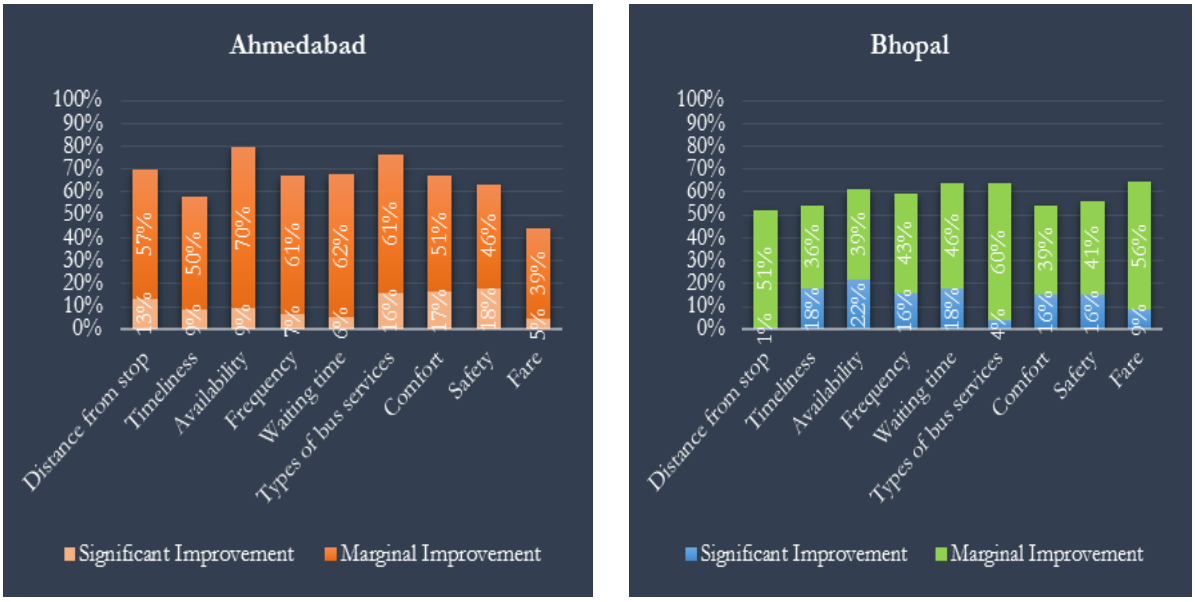
This urgently requires a system of fare revisions in tandem with the changing cost structure. AMTS currently is experimenting with an annual automatic fare revision formula pre-approved by the state transport department, which takes into account major cost heads like bus prices, fuel cost, etc. along with general inflation level. BCLL is also looking to put in place such a system. Though this is a forward looking move, it fails to correct for the historical mismatch between cost and revenue. Moreover, an 'annual' revision may not be

appropriate in the light of recent market linking of the fuel prices and resultant frequent price adjustments.

The operational inefficiency among public operators also adversely hits the quality of buses, number of routes operated, frequency of service offered, etc. Moreover, the monopoly limits the choices available to commuters, further exacerbated by the absence of alternate mode of mass intra-city transport in both the cities. Public control over the transport system also stymies innovation, and the largely homogeneous services on offer also fail to offer variation in accordance with the needs of the commuters. These in turn hampers the welfare of the commuters adversely.

This is also reflected in the passenger survey, where Bhopal scores higher than Ahmedabad in terms of 'significant' ***incremental change***. It needs to be noted that whereas Ahmedabad already had a well-established wide network of intra-city bus transport, in Bhopal the current services replaces a system which primarily consisted of mini-buses and tempos. As a result, the incremental changes have been more substantial to the commuters in Bhopal relative to Ahmedabad.

Figure 0.5: Ahmedabad falls behind Bhopal in terms of passenger perception on incremental 'significant' improvement in the recent times



However, the bus services in Bhopal still have some way to go. Only 42 per cent of passengers viewed the recently set up proper bus services to be better relative to the alternative modes of private vehicle or auto available (Ahmedabad 80 per cent). One of the possible reasons for such higher acceptability of bus services in Ahmedabad is the wider spread of its network, with 87 per cent of the passengers able to reach nearest bus stop from their home within 15 minutes by walking (Bhopal 52 per cent). The reported time gap between buses are also significantly lower in case of Ahmedabad (less than 5 minutes: 34 per cent and 6 to 15 minutes: 51 per cent) relative to Bhopal (17 and 38 per cent respectively). Similarly, Ahmedabad also scored marginally better in terms of the adhering to the time table (45 vs. 32 per cent).

As a consequence, the satisfaction level of commuters with AMTS is still considerably higher relative to BCLL in Bhopal. Thus, simply allowing greater private entry and introducing

competitive bidding with contractual specification of service standards is not sufficient for attaining optimal consumer welfare. The network spread and service standards needs to be synchronised with the needs of the public.

No role for private operators in operational decision making in either of the cities; important decisions like route determination, bus schedule, frequency, type of service, fare, etc. all become hostage to bureaucratic inertia and political interference.

Most operational decisions are taken by the public authorities, either by AMTS/BCLL on their own, or in cooperation with other public bodies like State Transport Authority, Regional Transport Authority, Ministry of Transport, PWD, etc. As a result, decision making becomes hostage to bureaucratic inertia and political interference with no role or bargaining power for market players. Consequently, as found in the interaction with a number of transport operators in both the cities, the intra-city bus transport segment loses its attractiveness for many private operators.

No benchmark to compare to in case of Ahmedabad, due to presence of a single operator.

Presence of two operators in the regular intra-city service routes under BCLL in Bhopal, operating within similar cost conditions, can provide benchmark comparison of relative efficiency of the different operators. This will enable BCLL to take a more nuanced approach to operational decision making to enhance efficiency. However, such measures will not be possible in Ahmedabad with AMTS being the sole regulator-operator.

Private participation is not banned but subordinated to public monopolist operator, limiting level of competition

BCLL does not run bus services on its own, but follows a public tendering approach to select the winning private operators based on pre-decided service norms and other operational terms and conditions. But, competition is restricted as these private entities do not have any operational autonomy like deciding on fare, routes or schedules. Moreover, each operator runs on mutually exclusive routes with no direct competition.

On the other hand, AMTS runs its own services, and also hires services of private bus owners for part of its operation. Currently, almost half of the intra-city bus services in Ahmedabad are privately operated. However, with AMTS deciding the fare, schedule and in which routes such hired private buses will operate, there is no competition between AMTS and the private players or among the private bus owners themselves. Moreover, as the operators are paid a fixed sum on per km basis (currently around Rs52 per km) and assured daily run of approximately 200 km per bus, there is a fixed revenue for the winning bidders and no incentive to provide a better service than others.

Table 0.2: Comparative picture of AMTS and BCLL (as on March 2014)

	Ahmedabad	Bhopal
Route length (km.)	549	216
Number of routes	184	11
Number of stops	543	325
Number of buses operated	900	225
Km operated per bus	200	222
Average trip length (km)	7.70	--
Per day passenger carried (number)	6,50,000	90,000
Per bus revenue per day (Rs.)	6,000	6,000

Source: Based on inputs from SRTU officials during meetings in March 2014 and shared public documents.

In Bhopal, entry into the system may require high investment. This has the potential to reduce competition by favouring large players at the entry stage itself.

As interested private players need to bid for a route or cluster of routes, with single operator per route, each such operator needs to enter the market with a large fleet of buses. As such, only those players with the capacity to arrange finances[41] for large number of buses at one go will be able to enter. In addition, the net cost model followed by BCLL shifts the revenue risk onto the private operators. This again favours larger operators with better risk bearing ability.

In comparison, as AMTS hires buses from private bus owners for its overall network, even small operators can potentially enter the market as service provider to AMTS.

Revenue sharing model can adversely impact revenue risk and profitability of private operators

BCLL follows a net cost model, where the revenue risk is entirely borne by the private operator. The operators have to pay a fixed royalty to BCLL per bus, but the revenue depends on actual passengers travelled and advertisements tapped. Thus, even if an operator achieves cost efficiency, its profitability will still be subject to uncertainty in revenue flow. As a result of this net revenue risk, the operators are complaining of banks charging a higher rate of interest on loans, raising the cost of fund.

In contrast, in case of AMTS, the private operators receive a fixed amount on per km basis. This assures the private operators an almost fixed revenue, allowing them to raise profitability by focusing on achieving operational cost efficiency.

One thing that has to be underlined here is that even though gross cost model entails the element of fixed revenue being received from the government, the success of PPP in this model depends on the government's ability to pay the private operator on time. In the interviews with the private operators engaged in the BRTS segment, it was revealed that the BRTS operation in Ludhiana (city in the Indian state of Punjab) had to be suspended after running for few months because the state government could not pay the private operator due to lack of funds. Hence the success of such PPPs is hugely dependent on balanced terms in the contracts.

[41] The private operators need to finance up to 30 per cent of the cost of the bus, plus taxes of around 8%. Under JNNURM scheme, Centre and State governments pitch in with 50 and 30 per cent of the cost of the bus.

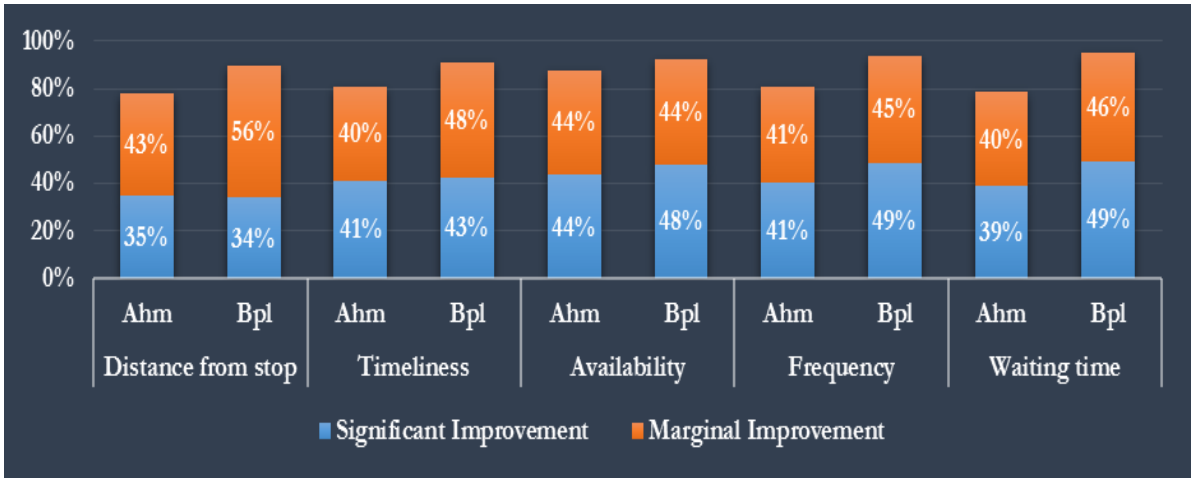
Intra-city BRTS

In both the cities, the SPVs formed (Janmarg in Ahmedabad and BCLL in Bhopal) act as a kind of regulator of the BRTS system and both possess the power of making operational decisions like determination of bus routes, allocation of routes, preparing bus schedules, revision of fares, etc. The bus operation on the ground, however, is run by private operators, who are selected through competitive bidding under specific contractual obligations which specifies standards such as fleet utilisation, bus utilisation, occupancy ratio, trip efficiency, reliability of buses, safety of operation, punctuality, cleanliness, etc. The objective has been to retain the overall operational control with the local government while ensuring minimum quality of service.

Improvement in Service Standard and Efficiency Raises Consumer Welfare

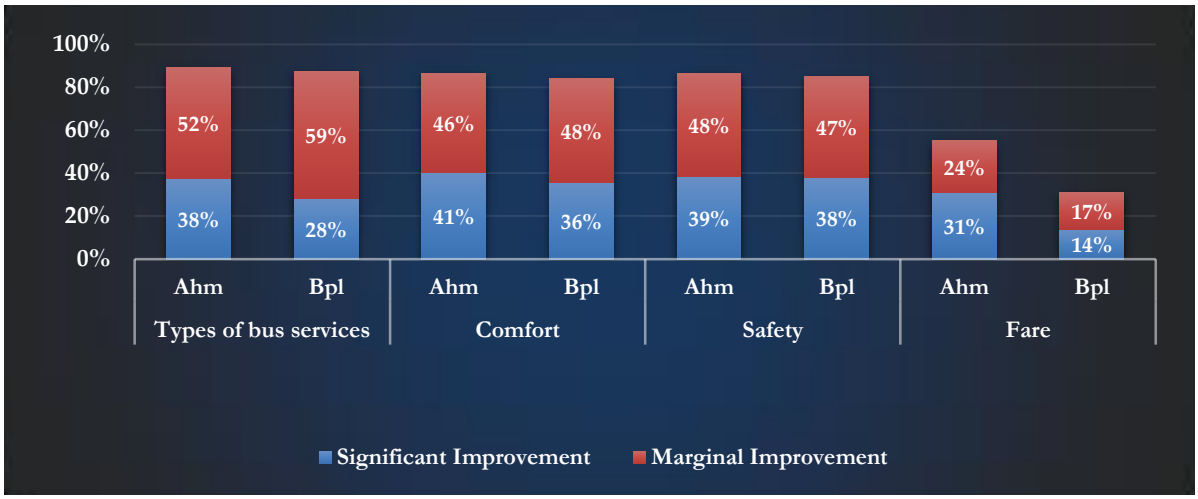
Introduction of BRTS in 2009 in Ahmedabad under Janmarg by AMC has proved to be more efficient relative to the regular intra-city services being run by AMTS for more than 60 years. Average speed during peak hour is 25 kmph and 27 kmph in off peak hours, whereas AMTS speeds are in the 16-18 kmph range. Similarly, Janmarg bus carries 1,500 passengers per day on an average compared to only around 950 passengers per day on AMTS. Average revenue per bus at Rs9,700 per day is also considerably higher in Janmarg relative to AMTS revenue of Rs3,700 per bus per day[42]. Even accounting for wide disparity in the BRTS network of the two cities in terms of network outreach, the acceptability and satisfaction of commuters with its introduction are considerably high and similar in both the cities.

Figure 0.6: Perceived positive impact of introduction of BRTS in both the cities on distance to travel to reach bus stop, timeliness of service, availability, frequency and waiting time



[42] http://www.guangzhouaward.org/650/content_797.html

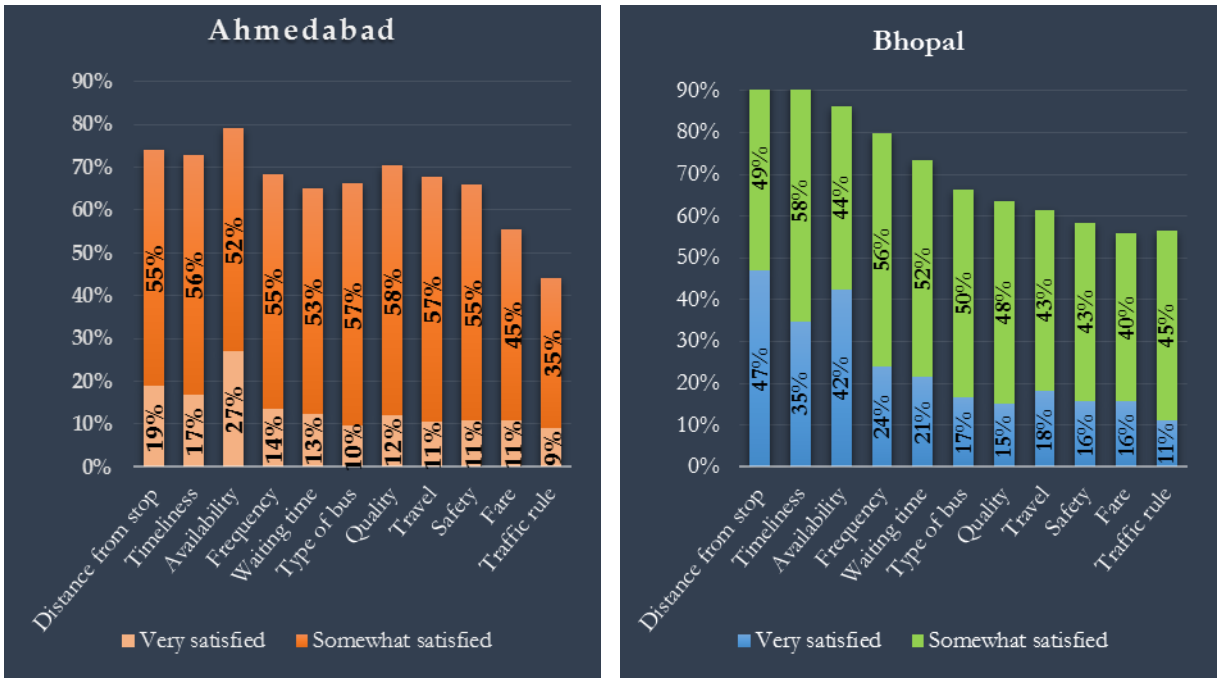
Figure 0.7: Perceived positive impact of introduction of BRTS in both the cities on bus type, comfort, safety too. Impact on fare though is not that positive



The BRTS system in Ahmedabad also scores better relative to the AMTS services with 22 per cent assessing the difference to be significant and 56 per cent as marginal. In contrast, in Bhopal, where both the regular and BRTS services operate under BCLL and contract obligation of the operators are also similar, only 7 per cent of Bhopal commuters find any significant difference in between the regular and BRTS services. It also needs to be noted that BRTS in Bhopal is operated with AC buses, whereas regular services are run with non-AC buses.

However, probably reflecting the considerable shift in the intra-city bus transport system in Bhopal from the erstwhile system dominated by minibuses along with tempo, auto, etc., the city commuters show 'considerably more' overall satisfaction relative to Ahmedabad.

Figure 0.8: Satisfaction level is higher in Bhopal



Single operator, no competition

As of now, BRTS system in both the cities is run by one single operator each[43] – Chartered Speed Carrier in all 12 BRTS routes in Ahmedabad and Capital Roadways in the BRTS route in Bhopal. The private operators thus face no competition in either of the cities. As a result, there is no direct benchmark to assess the efficiency of the incumbent operator. This may result in setting of suboptimal performance targets, and resultant systemic inefficiency.

This also limits the choice available to consumers, and fails to set any competitive benchmark against which the consumer satisfaction with the services of an operator can be assessed. The lack of competition may also limit the quality of services available.

Significant entry barriers may limit competition at entry stage

There exist elements of significant entry barriers for private operators in the current system of regulated private entry. As the bid document for Ahmedabad BRTS shows[44], "technical qualification for a vendor (along with its sister concerns, parent or subsidiary) requires it to own or have the experience of operating 100 buses or more in India". In case of foreign firms, the requirement is set higher at 250 buses. It also seeks an average annual turnover of Rs100mn or more for previous three years, and a net worth of Rs30mn. As such, only the larger players will be eligible for entry into the BRTS system

In comparison, BCLL only seeks prior experience of three years in transport business, average annual turnover of Rs3mn and a net worth of Rs1.5mn [45].

Ahmedabad BRTS follows a gross cost system (GCS) for revenue sharing, BRTS in Bhopal follows the net cost system (NCS).

Under GCS in Ahmedabad, each applicant needs to quote a charge on per km basis irrespective of the route allocated and for all the buses put up for bidding[46], with bidder quoting the least charge winning. The fare is collected by Janmarg, bearing the revenue risk in full. Operators are assured a minimum run per bus on an annual basis, and are paid a per km charge at the winning bid rate based on actual running of bus. While on the one hand it provides minimum assured return, on the other it limits the upside as operator loses the opportunity to benefit from higher passenger load (over time or across routes). In GCS, the buses may also be reallocated to different routes at different points of time over the contract period as per traffic needs.

In contrast, bidding under NCS in Bhopal is held separately for each route. This allows the operators to quote different Route Allocation Fee (RAF) for different routes as per their route-wise traffic and revenue estimation, with the highest bidder winning. The fare collection here is the responsibility of the operator and it shares the route-wise RAF with BCLL as per the winning bid. The operator under NCS thus has to bear a fixed pay out commitment assuring BCLL of a fixed revenue inflow while revenue flow for the operator is uncertain. The revenue risk borne by operator is leading to higher cost of fund. In this model, the competitive bidding takes place on the RAF – the operator committing to pay the highest RAF per bus or seeking the lowest subsidy becomes the winner.

[43] However, there exists provision for multiple operators in both the city BRTS services, and the number of operators is likely to increase as the service network expands.
[44] http://www.egovamc.com/tenders/DOCS/6144/Janmarg_Bus.pdf
[45] http://bhopalmunicipal.com/Hindiversion/tenders/BCLL_Operator_RFP_01.06.pdf
[46] Janmarg though reserves the right to allocate lesser number of buses per operator and introduce more than one operator.

No incentive for innovation or better performance

The contract terms lay bare the minimum standard of services expected from the private operators, but fail to provide any incentives to the operators to excel or innovate. As a result, the minimum required may become the set standard, more so in the current situation with single operator run BRTS system in both the cities.

This limitation in the current architecture will also limit consumer welfare. With no incentive to excel, operators will show no interest in providing better (than minimum required) services. Innovations, such as introducing differentiated services (say express service, point-to-point (no stop) service between major commuter hubs, etc.) for different strata of commuters, will also be absent.

Annual adjustment of fare based on escalation in input costs may not provide full protection

Janmarg has introduced an automatic, formula based annual adjustment in fare based on escalation in input costs. BCLL is also in the process of implementing a similar system. However, annual adjustments may prove to be inadequate in face of frequent price fluctuation in case of major inputs. While consumers will not benefit in case of downward price adjustment, producers will have to suffer when prices record a sharp uptrend. As an example, despite the sharp decline in fuel prices in the recent past, the benefits have not been passed on to the passengers.

Ahmedabad (77 per cent) and Bhopal (58 per cent) commuters largely find the fare to be inexpensive. With intra-city bus fares being strongly regulated by the public authorities and fare rise infrequent, the fare hikes have been rather muted, and largely in tune with the general price increase.

Figure 0.9: Passengers in Bhopal finds the fare to be more expensive

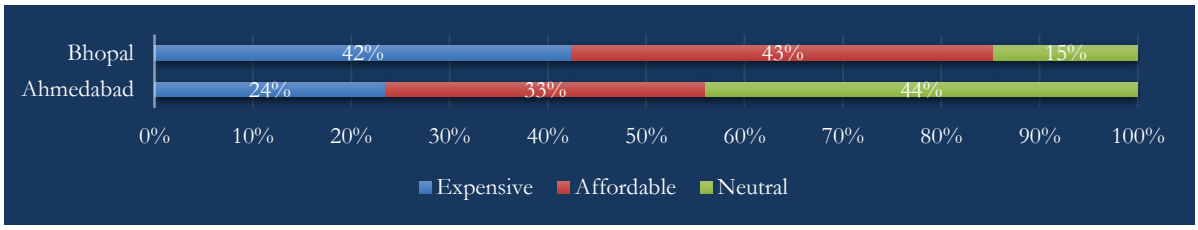
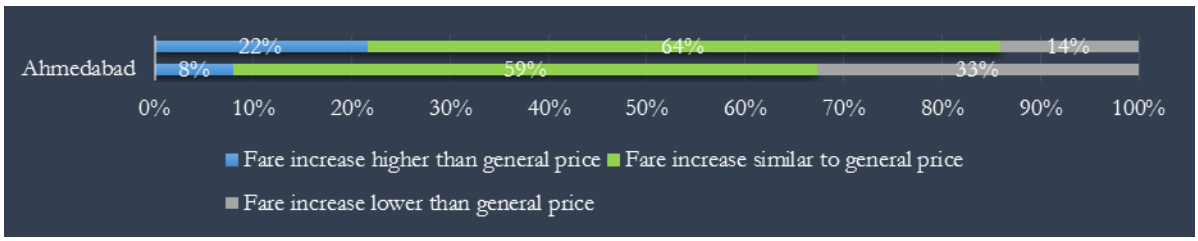


Figure 0.10: Fare increase is largely in tune with general price rise



Ahmedabad BRTS follows a closed system, BRTS in Bhopal is based on an open architecture

In Ahmedabad, the design of the buses and bus stops effectively disallows the normal city buses from accessing the BRTS infrastructure. The bus stops are elevated from the ground level and bus doors open directly at the bus stop level with no stairs. In Bhopal, however, the

corridor and bus stops along BRTS are open for the city regular buses too. Thus buses plying on non-BRTS regular city routes can utilise the dedicated bus corridor for the portion of its route which coincides with the BRTS corridor.

Inter-city Bus Passenger Transport Segment

The continued monopoly of GSRTC in the stage carriage services and abolishment of MPSRTC have had considerable impact on competition and producer-consumer welfare and the resultant market structure across Gujarat and MP. This section focuses on a comparative assessment of the same. The assessment incorporates the feedback from in-depth interview sessions with government officials, public and private operators, as well as perception survey conducted on inter-city bus passengers.

Reservation of Services in Favour of SRTUs Limits Competition

Legal monopoly status for GSRTC in stage carriage segment limits scope for direct competition. Entry barriers created in the form of reservation of stage carriage segment for GSRTC reduces the market size for the private operator. The private players holding contract carriage permit cannot openly compete with GSRTC as the availability, schedule, fare, etc. of private services cannot be pre-specified by them. For passengers, this artificially limits the horizon of service availability, more so in the face of shrinking size of GSRTC services.

Assured availability of budgetary support from government without any minimum performance requirements weakens the incentive for reigning in inefficiencies. Moreover, in absence of competitive benchmark, such inefficiencies remain unchallenged. Any cost increase leads to either higher subsidy or higher fare with limited emphasis on cost neutralisation through improving efficiency. In addition, presence of financial support for GSRTC introduces market distortion as fare charged by GSRTC acts as benchmark for private contract operators, allowing inefficiencies of GSRTC to have a systemic adverse impact.

In contrast, abolishment of MPSRTC in 2005 enabled open entry by the private bus transport operators in the inter-city sector in MP, allowing open competition among the interested players. Currently, the sector is dominated by the private players, though the market is fragmented with none enjoying any significant market power. The new regime accorded the private operators the freedom to choose type of permit, route, and schedule under regulatory oversight[47]. The freedom has improved market access, services on offer and enabled private operators to improve profitability.

The authority of fare determination though remains with Road Transport Authority (RTA). In addition, operators need to approach multiple RTAs with no centralised system for issuance of permit, adding to administrative cost.

A few public entities like Madhya Pradesh Tourism Development Corporation, Bhopal City Link Ltd, Atal Indore City Services Ltd, etc. have also recently entered the inter-city market in MP. However, fleet size of such players is limited as they are mostly operating high end services with Volvo buses. Plus, these public players have to compete on equal footing with the private high end operators.

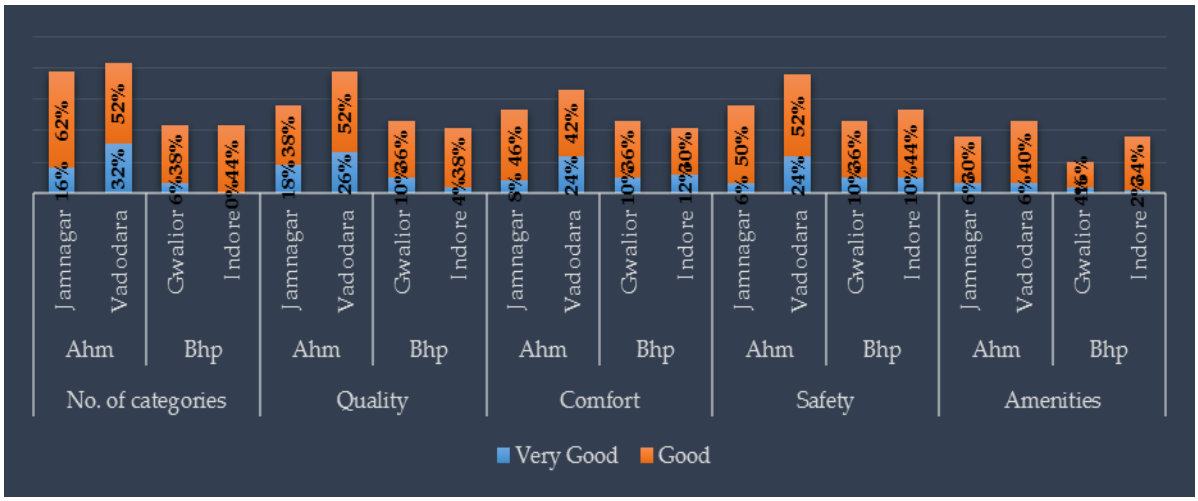
[47] In case of a stage carriage permit, the operator applies for a certain route and time and his application is put up for objection on the RTA notice board. If there is an objection from any existing operator for the route and time, a hearing is done by a committee set up for this purpose.

However, abolishment of monopoly does not necessarily lead to automatic improvement in services. Significant continued government involvement in provisioning of infrastructure is required

In Madhya Pradesh, according to the private operators, limited infrastructural support (quality road network, bus depots, maintenance facilities, bus stops, etc.) from the state government has added to cost of operation and has led to suboptimal service delivery in many routes. Limitation in even basic passenger amenities like bus depots, bus stops, etc. also leads to passenger discomfort and pose safety and security issues.

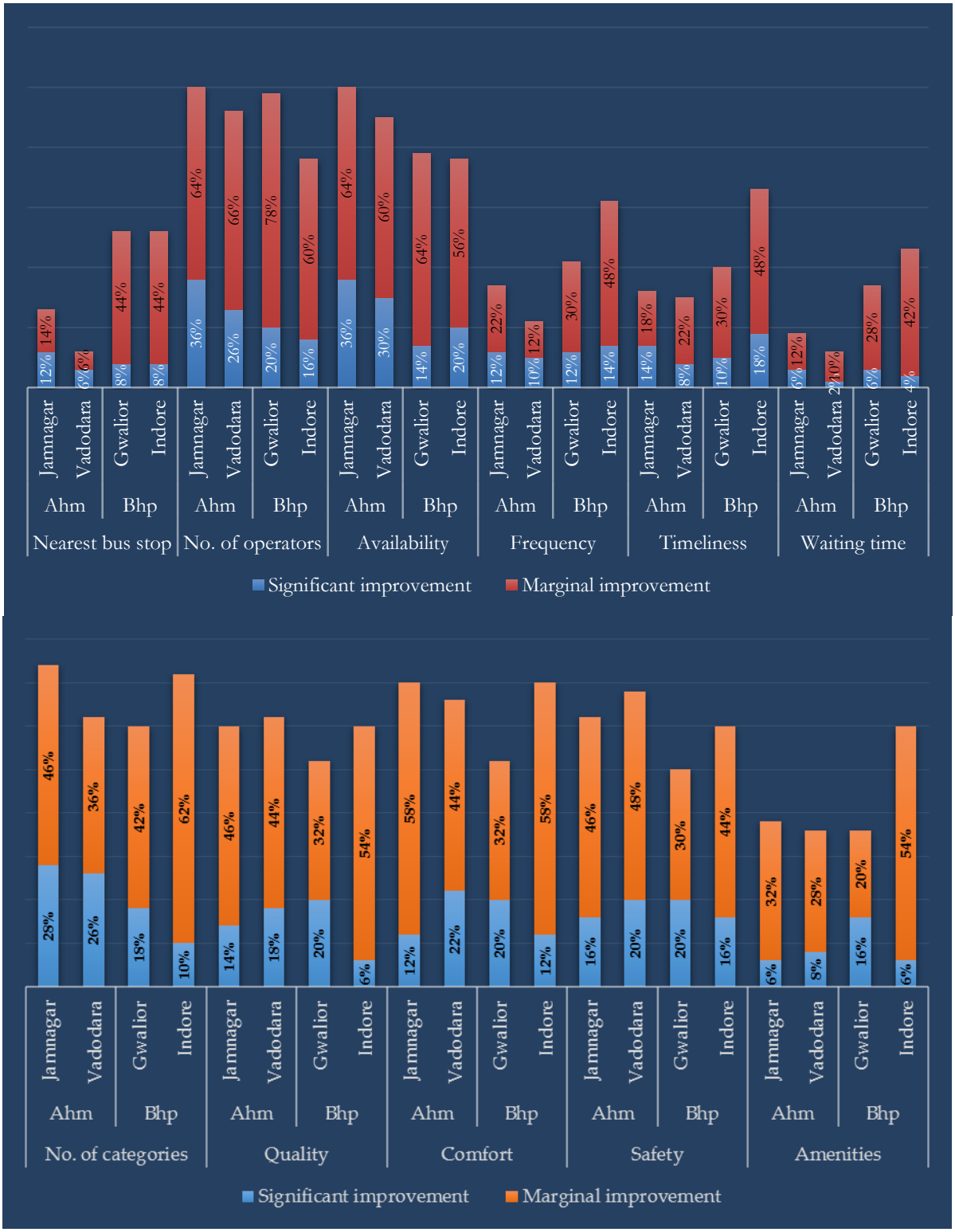
Reflecting the larger bus network in Gujarat, the accessibility is also better – whereas 39 per cent of commuters in Gujarat need to travel more than 15 minutes by walking to access the inter-city bus network, the share is significantly higher in Madhya Pradesh at 59 per cent. Similarly, whereas 60 per cent of Gujarat commuters find the access to be easy, the ratio falls significantly to 40 per cent in Madhya Pradesh. The presence of an SRTU in Gujarat (GSRTC), and its involvement in creating a wide network may also have a role in this positive feedback. The frequency of buses is also better in Gujarat – 36 per cent of respondents claimed a frequency lesser than 15 minutes relative to only 20 per cent in Madhya Pradesh.

Figure 0.11: Better general rating for inter-city bus services in Gujarat



Despite the relative backwardness of the inter-city bus network in Madhya Pradesh *vis-à-vis* Gujarat, abolishment of monopoly in Madhya Pradesh however looks to be leading to more positive incremental changes than in Gujarat, with Madhya Pradesh respondents relatively more euphoric about improving access, frequency, timeliness, waiting time and amenities. Gujarat showed more significant improvement in service availability and range on offer. The states compared well in other parameters.

Figure 0.12: Commuter perception regarding improvement in services



Weak Regulatory Oversight Leads to Unruly Competition Irrespective of Market System

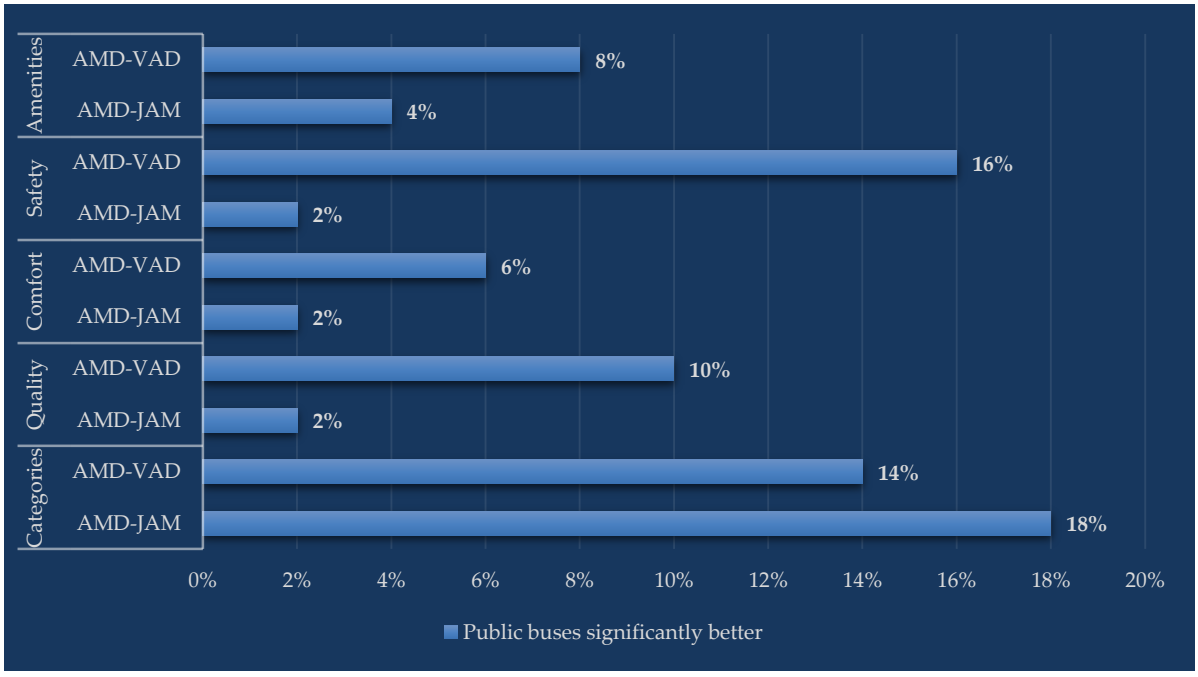
Despite the significant dis-similarity between Gujarat and Madhya Pradesh inter-city bus transport system, one feature in common is the weak regulatory system. In Gujarat, the services of GSRTC have been on the decline even in the face of rising passenger demand for inter-city travel. This has led to private operators with contract carriage permits plying as de

facto stage carriages. This clandestine operation as stage carriage gives rise to a number of systemic issues such as unregulated fares-routes-schedules, no proper ticketing system or passenger records, no dispute resolution mechanism, etc.

Private carriages in Gujarat are incurring additional transaction costs in form of deploying travel agencies, paying protection/speed money to officials/politicians, etc. to circumvent the legal restrictions on contract permits. This increases operational cost and are ultimately passed on to the passengers, lowering consumer surplus. In addition, pre-planning travel becomes problematic as the availability, schedule, fare, etc. of private services cannot be pre-specified by private operators with contract permits. As tickets are not issued in individual name (when plying as stage carriage), arranging documentary proof becomes problematic in case of accident or death.

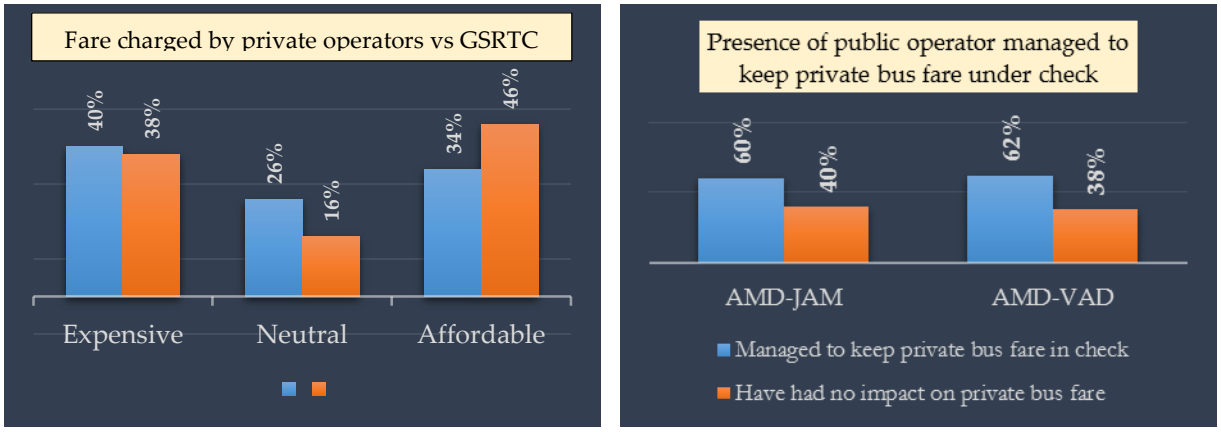
However, the perception survey shows considerable acceptance of private operators among the passengers. Only 2 to 18 per cent of the respondents rated the service of the public operator across different parameters to be significantly better than private competition. Moreover, two-third of passengers are indifferent between private and public services even as 57 per cent are aware of the illegality involved in the nature of the operation of private operators and 63 per cent do not approve of in-between halts by private operators.

Figure 0.13: Commuter perception on service standards of private (contract carriage) and public (stage carriage) operators in Gujarat



Increase in fare and impact on household finances have also been nil to marginal for more than 3/4th of the respondents. The commuters in Gujarat also do not find any significant difference in fare between private and public operators. However, the fare charged across private operators varies in both the routes covered in Gujarat, mainly depending on the class of service offered (regular vs. luxury, etc.). Most of the respondents in Gujarat also agree to the view that the presence of the public operator has had a salutary impact in reigning in the fare charged by the private operators.

Figure 0.14: Fare across public & private operator in Gujarat

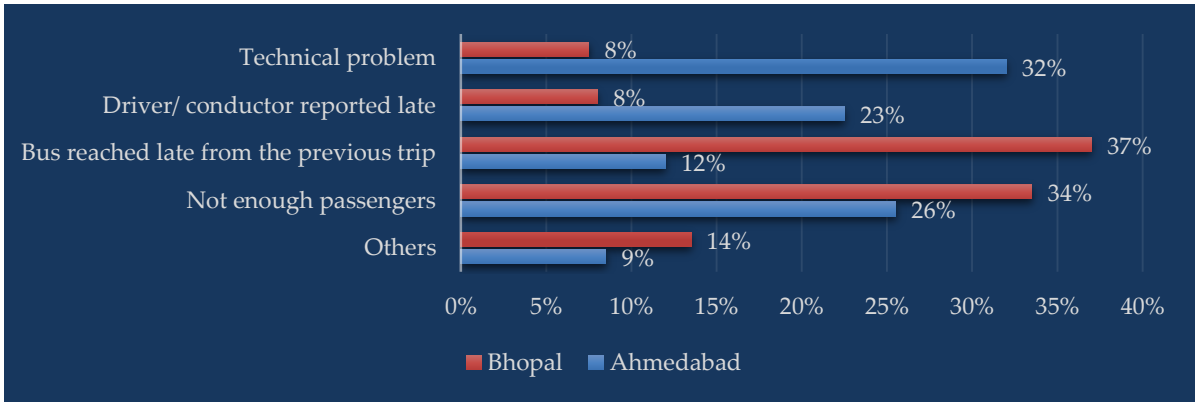


On the other hand, interactions with various local stakeholders in MP suggested that operators regularly ply on routes not allocated to them – practice of picking profitable routes even when an operator does not hold permit for it is quite common. As a result, though the variety of services as well as quantum has improved in profitable routes, service availability on non-profitable routes (especially rural connectivity) has been affected badly.

Fare charged also often varies from RTA approved rates. Bus quality and comfort (higher end buses), additional services provided (video, snacks, water, etc.), etc. are commonly cited to charge higher fares. However, according to the over 75 percent of survey respondents, general hike in fare has been marginal and more or less in line with general price increase.

Complaints on non-adherence of approved schedule citing reasons such as low passenger turnout were also quite common, creating uncertainty for passengers on service availability. In fact, whereas in Gujarat delay due to technical problems is the single dominant factor for delay (at starting point), not having enough passengers in Madhya Pradesh turns out to be most cited reason by the survey respondents.

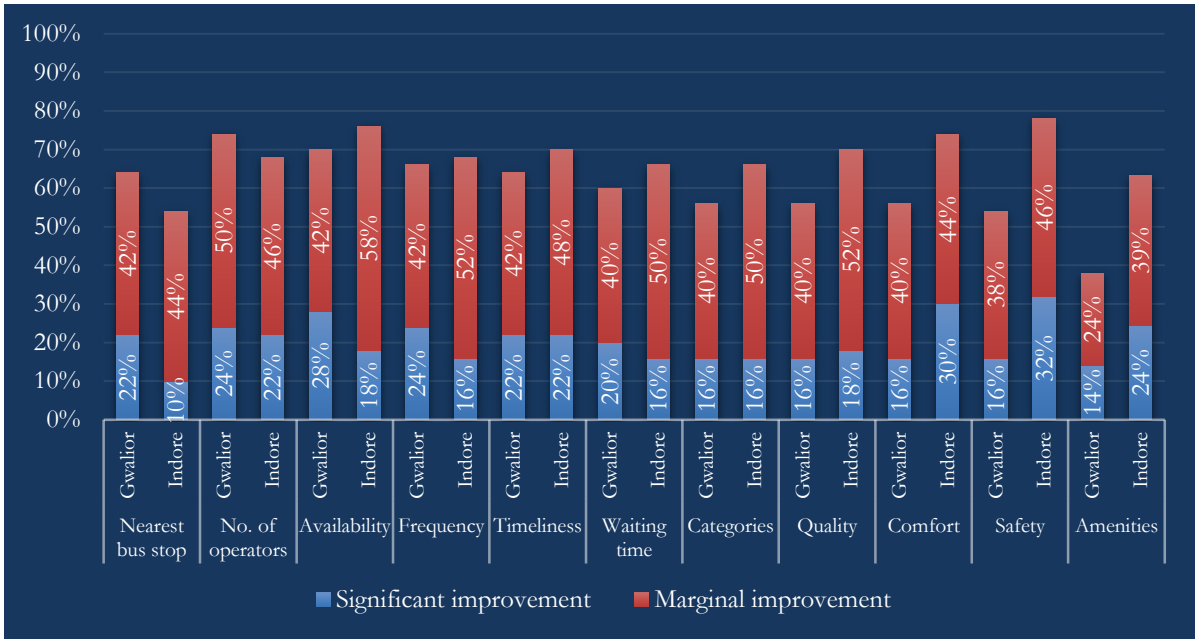
Figure 0.15: Varied reasons for delay at the starting point



Though on paper the system of permit issuance has checks like inspection of bus quality (such as road worthiness, pollution, etc.), actual implementation is quite weak. Operators often deploy agents or brokers to attract passengers. Passengers often complain of their

misbehaviour and promises in deviation to actual services delivered. Sometimes even proper tickets are not issued[48].

Figure 0.16: Commuter perception on the impact of abolishment of MPSRTC on services



Key Findings

Shift in policy stance since the early 90s seeking greater private participation in the transportation market needs to be recognised with concomitant reform in the legislations and rules governing the market, which largely originated in the early days of the post-independence policy era seeking state control. It is undeniable that continued involvement of public authorities in the transport sector will be required to ensure the welfare of consumers, but at the same time the scope for enhancing the efficiency of the system also needs to be explored to enhance producers' welfare and limit the burden on the public exchequer. This calls for adopting a policy stance amenable to greater and more open competition, including preparing the SRTUs to compete with private operators in a level playing field.

The biggest finding from both the states in the bus transport sector (Madhya Pradesh and Gujarat) is that, the *presence of government as a monitoring and evaluation authority is imperative to ensure sustainability and level playing field in the sectors like public transport*. However a sustainable approach of constructive regulation should be adopted.

Active engagement of private players in bus services: Public Private Partnership (through a process of competitive public procurement) looks to be a promising approach for introducing private competition in the bus transport sector. However, there is a need for state governments to develop institutional strategies for promoting competition in public procurement in this sector. This is an issue where the Competition Commission of India needs to extend its support to some of the relevant state governments.

[48] Hindustan Times, October 15th, 2012; Page 2.

The government authorities may retain the operational control to maintain a balance between divergent interests of producers and consumers. The routes may be determined by the public bodies, along with retaining the powers of deciding on fare in each route. At the same time, the actual bus operations may be handed over to private parties through competitive bidding to enhance the efficiency level.

Whereas it allows the public authority freedom to regulate the fare based on the commuters' ability to pay, it also allows them to reap the benefits of increased operational efficiency with introduction of private players. In presence of sufficient competition, the winning bid shall approximate the competitive revenue and/or cost outcome, and this has the potential to reduce overall subsidy burden. A minimum standard of service quality can also be assured by proper specification of the service obligations at the bidding stage itself. The extent of public support that shall be available to the private operators may also be specified at the outset to enable them to plan and quote accordingly.

The route of competitive bidding process can be used to ensure supply of bus services in both profitable and unprofitable routes. In case bidding takes place on cost per km basis under gross cost model, it does not matter to the operator as to which route it is operating. Similarly, when operators have to bid in terms of revenue to be shared with authority for a particular route in a net cost model, competition may take place in terms of subsidy sought – the operator seeking the lowest subsidy winning the bid for the route.

The bidding process to be followed though needs to be carefully planned. It shall be structured in a way so that entry barriers are minimal and a balance between such barrier and service quality can be maintained. This is needed to ensure multiple players in the system to allow comparative benchmarking and creating scope for further efficiency gain from the competition. For example, route wise bidding as implemented in Bhopal requires operators who can raise finances for an entire fleet of buses. Now, only the single BRTS route in Bhopal is planned to be operated with 20 AC buses, which effectively excludes the possibility of market entry by smaller operators. In addition, route wise bidding precludes the possibility of adjustment in deployment of buses across different routes in response to any shift in passenger flow dynamics.

Similarly, Ahmedabad and Bhopal bid documents mention the service standards to follow and penalty clauses, there is no provision for bonus for operators in case they return better result than stipulated. The incentive structure implemented in Goteborg, Sweden[49] may be studied and considered for implementation to incentivise operators for better performance.

Need for a proactive regulator: Another issue that comes out to be very important in assuring competitive structure of the market is a strong proactive regulator (at the state level) – both in terms of legislative backing as well as resources available at its disposal and its ability to intervene. Inability to ensure adherence to the rules of the game can severely distort the competitive framework as has been the experience in Madhya Pradesh.

Pro-activeness will also be required in terms of defining the contours of the service availability. It needs to be noted that when the services to be delivered, standards to be maintained and financial obligations are all specified in the contract, there remains little incentive for the private players to innovate. Plus, defined contract term with no assurance of

[49] NCAER, 2007, State policies affecting competition: passenger road transport sector.

renewal limits the incentives for private operators to invest more. Also in cases like BCLL, the SPV acts as both, an operator and quasi regulator, creating conflict of interests.

Thus, regulators would be required to have a clear differentiation of regulation with no role to lay in service provision. They would play a larger role in assessing the varied service needs of the commuters and wherever possible/ required create an amenable environment for introduction of such additional services.

Abolishing the monopoly of SRTUs: Lastly, maintaining monopoly of SRTUs, even when their scale of operation is falling, is imposing large subsidy burden on the state exchequer. For example, GSRTC (average) operational fleet size declined from ~7,800 in March 2003 to ~6,700 in March 2013, with corresponding decline in passenger carried from 1.27 billion to 0.84 billion. Similarly, AMTS experienced more than 10 percentage point decline (from 78 to 67 per cent) in fleet utilisation even though overall fleet size increased from 966 in March 2010 to 1120 in March 2013. The inherent operational inefficiency in GSRTC and AMTS resulted in Rs3bn and Rs1.7bn subsidy burden respectively in 2012-13 alone. However, in the current political-economic set up, the SRTUs are a reality and very few states unlike Madhya Pradesh are likely to abolish them. As a result, there needs to be some thinking on how to integrate these public operators in a reformed transport framework with greater private participation and competition. Some of the following measures can also be looked at:

- A *negotiated performance based contract model* may be followed with such SRTUs, tying state budgetary support to target fulfilment. A certain number of operational efficiency parameters such as ratio of on-road buses to total fleet, punctuality in services, revenue per km, cost per km, manpower deployed per bus, revenue staff, daily operational length per bus, etc. may be identified and a timeline may be prepared for the SRTUs to achieve the target set.
- *Benchmarks may be decided based on the performance of the other private/public operators* plying under identical/similar service environment. This can enhance operational efficiency of the public operators, preparing them for eventual free competition against private players. Better cost efficiency in operation will also reduce the subsidy burden on the state exchequer.
- The *need for state level public transport regulator* has also been proposed in the draft Road Transport and Safety Bill 2014, and some of states need to show the way. The findings from the CREW project clearly make a case for such state regulators in both the states of Gujarat and Madhya Pradesh.

5. Conclusion and the Way Forward

The Staple Food (Wheat) Sector

The role of the government in developing and implementing policies and reforms across the five nodes of the wheat supply chain (production, agricultural marketing, procurement, warehousing and distribution) varies widely. In some areas the Central Government plays a dominant role, while in others the State Government is responsible for developing and implementing policies and/or reform actions.

Some of the main findings and key takeaways are enumerated below:

Effective Operationalisation of Seed Policy Can Benefit Small Farmers

The study finds that 'seed policy' in Bihar under the overall national seed policy framework and as an integral component of the Bihar Agricultural Road Map 2008-12 enabled the state to increase seed production, improve usage of certified seeds, attract higher private participation and record higher yield and production. In addition to facilitating private sector participation, the public sector seed company (Bihar Rajya Beej Nigam or Bihar State Seed Corporation) embraced institutional reforms and innovation to evolve its role in the sector in the state. Overall seed infrastructure was improved by strengthening public bodies such as Bihar Rajya Beej Nigam; Bihar State Seed Certification Agency; and Seed Multiplication Farms. This was further supplemented by announcement of various schemes focused on the seed sector. It helped in achieving a higher seed replacement rate (usage of certified seeds per unit land cropped) thus contributing to better yield. This was in sharp contrast to the Seed Plan of Rajasthan which also covered the same period. The Rajasthan plan set out year wise targets, but seems to have failed to make provisions for financial support and a proper operational strategy.

The Bihar 'seed sector' reform case is one that should be looked at more closely from the point of developing it as a 'Good Practice' case for consideration by policymakers and practitioners in other states.

To improve agriculture marketing, need to focus beyond Agriculture Produce Market Committee (APMC) Reform:

Though contrasting reform initiatives in both Bihar and Rajasthan enabled greater private participation on paper, but neither had any significant impact on potential beneficiaries (especially small farmers) due to implementation problems. The experience across both these states brings out the need for a broader approach to agriculture marketing reform. It is also clear that any reform in agriculture marketing (and procurement) will need to take into consideration the nature of the farmers/farming community in the state and their experience from earlier reform initiatives.

Withdrawal of state in Bihar was accompanied by decline in public investment in agricultural marketing infrastructure. Apart from infrastructural issues like assured water supply, electricity availability and/or road/rail connectivity, stakeholders in Rajasthan also cited reasons such as problems in land availability/acquisition or changing usage pattern. Large

investment requirements with low incentives, heavy security deposit amount emerged as main factors inhibiting private entry into agricultural marketing.

Thus, to bring ground level changes in agricultural marketing, there is a need to look beyond APMCs and develop a policy framework integrating land policy, infrastructure policy, credit policy, etc. Identification of potential private investors and discussions with them could provide key inputs on what measures can be taken by the state governments to attract private participation in agriculture marketing. Specifically, it is necessary to identify issues affecting private participation, understand the reform measures required, assess the possible benefits from such reforms and educate the relevant departments/policy makers on the same.

More emphasis on localised procurement such as through Primary Agricultural Credit Societies (PACS) in Bihar:

One of the major drawbacks of the existing system of food grain procurement by government agencies such as Food Corporation of India (FCI) is their centralised structure and operations. They procure from APMC markets, which as of now are not easily accessible to all farmers, especially the marginal and the smaller ones. As such, there is a need to develop alternative systems, especially in states like Bihar where the agricultural landscape is dominated by the marginal/small farmers.

In recent times, Bihar has notified PACS as the nodal agency for procurement. PACS has significantly better local presence through a formidable network of 8,463 centres at 'panchayat[50]' level. Procurement through PACS thus holds considerable promise in providing greater access for marginal/small farmers to government procurement activities.

However, politicisation and lack of administrative reform has limited the ground level impact that PACS can provide. Bihar State Food and Civil Supply Corporation (BSFC) has realised this and embarked on an ambitious programme to improve the PACS as a means to reinvigorate the farmers' cooperatives in the state of Bihar. Mandating PACS to be the sole procurement in the Rabi Season from 2013 has been a step in this direction. However, a process of institutional reform also needs to be introduced in the PACS – which seems to remain an uphill task.

The Bus Transport Sector

Abolish the Monopoly of Gujarat State Road Transport Corporation (GSRTC)

Monopoly breeds inefficiency by restricting competition. Assured state financial support which is not linked to any pre-specified performance benchmark in case of state monopolies further vitiates the operational dynamics. As seen in the case of Gujarat State Road Transport Corporation (GSRTC), it recorded a revenue deficit of Rs3bn in the financial year 2012-13 alone. Similarly, at the time of abolishment of Madhya Pradesh State Road Transport Corporation (MPSRTC) in Madhya Pradesh, it had 11500 staff for 1000 operational buses – implying more than 11 staff per bus! As a result, retaining monopolies for SRTUs generally results in a large subsidy burden on the state exchequer and instills inefficiency in the system.

Financial constraints have been restricting GSRTC from expanding its services with increasing demand. Its operating fleet has declined by around 1000 buses over 2003-13, with

[50] A **panchayat** is the local government created under the **Panchayati Raj** system either at the village level (or a small collection of a few villages) or at the level of a small town, and has a Sarpanch as its elected head

annual passenger count declining by more than 400 million. The ensuing demand-supply gap has led to surreptitious entry by private 'contract' carriage operators into the stage carriage segment. The passenger feedback received in the course of survey conducted under CREW study also shows wide acceptance of the private services among the passengers. One of the reasons was that passengers found the fare charged by the private operators to be largely comparable to GSRTC. This calls for the legislative changes to do away with the monopoly status of GSTRC in the 'stage carriage' segment.

This shall allow GSRTC performance to be compared against industry benchmarks, allowing for scope to improve its operational performance. Budgetary support of GSRTC can also be linked to achievement of such benchmarks. On the other hand, it will also ease entry requirements for private operators in the 'stage carriage' segment – especially small operators.

Move towards Private Public Partnership (PPP) in the Intra-city Segment

Considerable volume of bus services are being procured for BRTS and city bus services in both Bhopal and Ahmedabad cities through a process of competitive bidding by private sector providers. Direct entry by private bus service providers is however not allowed.

The BRTS system in Ahmedabad shows better operational efficiency relative to AMTS. The BCLL run regular city operations in Bhopal under PPP mode is also rated higher than public monopolist AMTS run services in Ahmedabad by survey respondents in terms of incremental changes introduced in terms of service availability and quality. Thus the PPP model may be considered for implementation in other cities too. While the operational decision-making powers may be retained with the government, services like bus maintenances and allied services may be provided by private operators.

However, there is a need for developing institutional strategies for promoting competition in such public-private partnerships. Even though the PPP model looks to have improved efficiency and passenger welfare, there are a few areas which need to be addressed:

- First, the number of providers of buses as of now is quite limited. BRTS in both the cities are currently provided by a single entity. Even in regular operations in Bhopal under BCLL, the number of providers is just 2.
- Second, entry barriers set in the process of competitive bidding limits competition. For example, a prospective entrant in BRTS in Ahmedabad requires experience of operating a fleet of 100 buses or more in India and Rs100mn or more of annual turnover. The term of bidding – whether for entire services, per route or per bus – also have significant bearing on the minimal operational size required. If bidding requires committing to a fleet of buses, it will act as an entry barrier for small operators. Technical inputs are required from agencies like the Competition Commission of India in order to help the state and urban local bodies (Municipalities) to promote 'pro-competitive' elements in the procurement process.
- Third, the revenue sharing model to be followed needs more careful consideration. Both Gross and Net Cost Systems are followed with their respective pros and cons in the two states. Under Gross Cost System (GCS) in Ahmedabad, the operator offers services against a fixed per km charge irrespective of actual revenue collection. On the one hand, it assures the operator of minimum revenue, but at the same time takes away the opportunity of higher revenue from increased passenger traffic. In case of Net Cost System (NCS) in Bhopal, the private operators collect the revenue and pay a

fixed sum to BCLL. Here the entire revenue risk is borne by the operator along with a fixed cost burden.

- Fourth, the current terms of bidding only provides for a minimum standard of services and no incentive for the operators to excel or innovate. From a long term perspective, incorporation of this aspect in the PPP structure needs to be explored.

Legislation for strong State Road Transport Regulator

MPSRTC abolishment experience seems to indicate some progress towards a more competitive market environment in Madhya Pradesh in the inter-city segment. Discussions and feedback from passengers indicate prevalence of some malpractices like not following schedule or route by the operators and some cases of overcharging as well. This calls for tougher regulatory supervision in this market.

Further, given that PPP seem to emerge as a way forward – there is a need for greater attention to the terms of engagement of private players under such PPP arrangements. These issues thus make a strong case for introducing State level Road Transport Regulators in Indian states. Provision for the same has also been included in the draft Road Transport and Safety Bill 2014 – which is likely to be adopted into an Act by mid-2015. Apart from legislative powers, to be effective such regulators also need to be adequately resourced.

Endnotes

The diagnostic research has been able to highlight certain areas in policy and practice in both the staple food (wheat) and bus transport sectors that needs to be tightened. It is expected that such actions would help introduce and/or consolidate pro-competitive forces and curb anti-competitive tendencies in the interest of the consumers and producers in these two sectors.

Evidences that have emerged from this diagnostic exercise would be further refined in consultation with state-level stakeholders in each of the states to find the possible way forward. Certain issues would need to be discussed and deliberated at the national level with relevant actors and institutions, and would be handled accordingly.

Appendixes

Appendix 1

A1.1 Outline of Primary Research Conducted under CREW

Primary research comprised of data/information that was gathered from various actors in the supply chain through:

- perception surveys of wheat producers, consumers and bus passengers
- in-depth interview with experts, policymakers and various stakeholders along the value chain

Perception Survey

Primary survey was conducted for producers and consumers pertaining to both sectors under study. The objective of this survey was to assess the perception of the wheat farmers and consumers as well as bus passengers and operators on their satisfaction with the current state of affairs, recent changes experienced and view on the impact of select policy measures. Structured questionnaires were used for different target groups. The questionnaire followed in general a five level bipolar Likert scale in case of questions seeking respondents' opinion on reform related experiences.[51] The wheat farmers' questionnaire solicited views on production-price-procurement-sales, inputs availability and cost; warehouse facility scenario and marketing and distribution of produce. The wheat consumers' questionnaire focussed on assessing the perception of consumers on efficacy of both the Public Distribution System (PDS) as well as open market in fulfilling their needs and expectation. The bus passengers' questionnaire (both intra and inter-city) focussed on respondents' preference for mode of transport, accessibility-availability-timeliness of bus services, quality of services and price issues.

Sampling Framework for Perception Survey

(A) Staple Food - Wheat

- States: Rajasthan and Bihar
- Sample size: 400 respondents - 200 farmers and 200 consumers from each state.
- Districts: From amongst the top and middle wheat producing districts. 100 farmers, 100 consumers from each of the districts.
    - Rajasthan: Alwar, Bhilwara
    - Bihar: Saran, Vaishali
- From each districts, two blocks were covered (50 farmers from each block)
- From each block, two villages were covered (25 farmers from each block)
- Farmer sample selection at village level was stratified random.
    - 5 samples were drawn from each of the following 5 land holding based categories

[51] For details, please refer to the questionnaires available at http://www.cuts-ccier.org/CREW/. Also note that in some cases the scores were converted into a three level Likert scale at the time of reporting in cases where central tendency bias was observed.

- Marginal (<1 hectare)
- Small (1 to 2 hectare)
- Semi medium (2 to 4 hectare)
- Medium (4 to 10 hectare)
- Large (>10 hectare)

- Consumers were sampled randomly from urban areas/district headquarter of districts where farmers were surveyed.

(B) <u>Bus Passenger Transport</u>

- States/cities: Gujarat/Ahmedabad and Madhya Pradesh/Bhopal.
- Sample size: 300 respondents from each of the two states.
  - Intra city bus passenger: 200 samples from each city
    - 5 busy routes or 40 regular passengers per route on average
    - Routes were selected from both BRTS services and regular city services routes
  - Inter-city bus passenger 100 samples from each state:
    - Two routes (50 passengers from each route) from amongst the busiest ones.
    - The selected two routes should show contrast in terms of operators/buses, frequency, route length etc.
    - Bhopal:
      - Bhopal-Indore (high frequency, large no. of buses, 250km distance);
      - Bhopal-Gwalior (low frequency, limited number of buses, 450 km distance)
    - Ahmedabad:
      - Ahmedabad-Baroda (Public dominance, short distance of 110 km, high frequency, alternate mode train available throughout the day),
      - Ahmedabad-Jamnagar (Limited public service, Longer distance of 320 km, lower frequency, limited alternate mode of travel)
- Respondent selection was based on random sampling procedure from regular bus commuters

In-depth Interview

The objectives of incorporating in-depth interviews in the study were twofold:

1. Assimilate views of various stakeholders and experts on policy environment, market structure and how it is affecting welfare; various legislative and administrative measures suggested to address the welfare loss
2. To address the data paucity. It was expected that interaction with government officials will also lead to additional data and information on the focus sectors, enriching the analytical depth of the study.

The stakeholders identified and met in the sectors can be broadly classified as follows:

Table A0.1: Stakeholders in wheat and bus transport sector identified for in-depth interviews

Staple food - Wheat	Bus transport
✓ Government officials ✓ Input suppliers ✓ Middlemen, traders and commission agents ✓ Distributors, wholesalers, retailers ✓ Warehouse ✓ Millers ✓ Farmers' associations, community based organisation	✓ State government officials ✓ Bus operators ✓ Service providers (to bus operators)

A1.2 Figures

Figure A0.1: Analytical steps for assessing competition framework

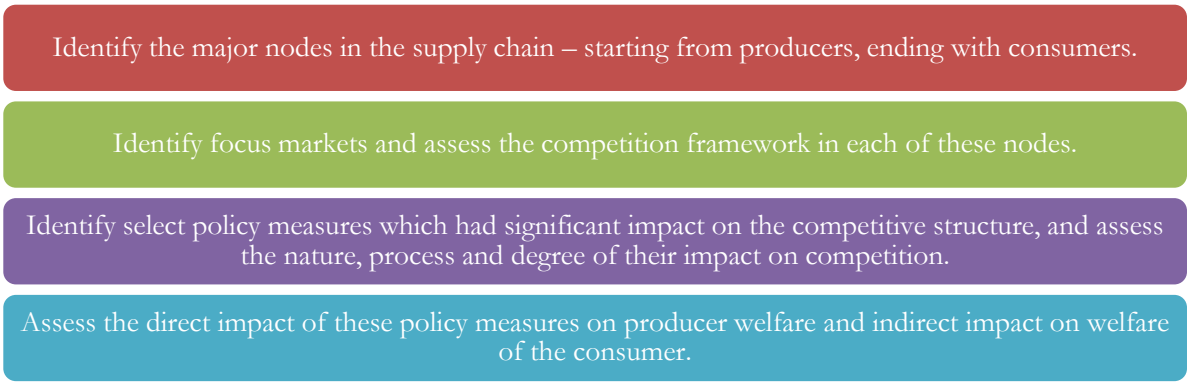


Figure A0.2: Parameters for assessment of degree of competition

A1.3 Tables

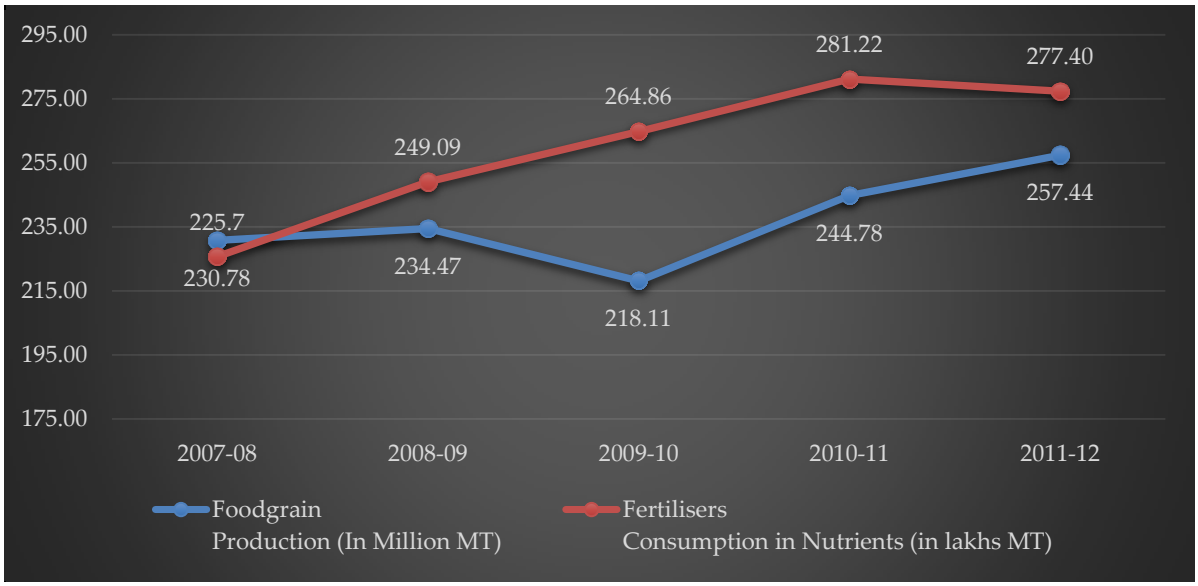
Table A0.2: Indicators for assessment of impact on consumer and producer welfare

Consumers' Welfare	Producers' Welfare
✓ Access: Goods and services reach consumers in areas where they were not available earlier ✓ Quality: Better quality goods and ✓ services are available for consumers without any appreciable increase in prices ✓ Choice: Increased choice that benefits consumers ✓ Price: Prices are reduced to the relief of consumers	✓ Fair market processes: Easy entry and exit in markets; considerable ease of doing business ✓ Predictability of regulatory actions, transparency in implementation process: Well laid out rules, regulation, legislations; enforced by autonomous yet accountable institutions; predictable implementation processes ✓ Freedom in operational decision making; cost and profit: Extent of freedom for players in business decisions, impact on cost and profit ✓ Access to inputs and essential services: Access to inputs and support services like infrastructure networks ✓ Free movement of goods & services: Mobility not affected by policies, practices ✓ Level-playing field: Principle of 'competitive neutrality' is observed

Appendix 2

A2.1 Figures

Figure A0.1: Agricultural production failing to keep pace with increased fertiliser consumption



Source: Indian Fertiliser Scenario 2012, Department of Fertiliser, Ministry of Chemicals and Fertilisers, Government of India

A2.2 Tables

Table A0.1: State-wise number of wholesale and rural markets, regulated markets as on 31.12.2012

Sl. No.	Name of the States/UTs	NUMBER OF MARKETS			REGULATED MARKETS		
		Wholesale	Rural Primary	Total	Principal	Submarket Yards	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Andhra Pradesh	331	574	905	331	574	905
2	Arunachal Pradesh	22	63	85	16	115	131
3	Assam	405	735	1140	20	206	226
4	Bihar	325	1469	1794	APMC ACT REPEALED		
5	Jharkhand	201	603	804	28	173	201
6	Goa	4	24	28	1	7	8
7	Gujarat	205	129	334	199	201	400
8	Haryana	284	194	478	106	178	284
9	Himachal Pradesh	42	35	77	10	40	50
10	Jammu & Kashmir	16	8	24	APMC ACT NOT IMPLEMENTED		
11	Karnataka	507	730	1237	153	354	507
12	Kerala	348	1014	1362	APMC ACT NOT ENACTED		
13	Madhya Pradesh	246	1321	1567	246	275	521
14	Chhattisgarh	2	1132	1134	73	112	185
15	Maharashtra	881	3500	4381	300	581	881

Sl. No.	Name of the States/UTs	NUMBER OF MARKETS			REGULATED MARKETS		
		Wholesale	Rural Primary	Total	Principal	Submarket Yards	Total
16	Manipur	24	94	118	APMC ACT NOT ENACTED		
17	Meghalaya	35	88	123	2	0	2
18	Mizoram	10	105	115	APMC ACT NOT IMPLEMENTED		
19	Nagaland	19	174	193	18	0	18
20	Odisha	398	1150	1548	45	269	314
21	Punjab	425	1346	1771	149	276	425
22	Rajasthan	434	312	746	129	305	434
23	Sikkim	7	12	19	1	0	1
24	Tamil Nadu	300	677	977	277	15	292
25	Tripura	84	554	638	21	0	21
26	Uttar Pradesh	584	3464	4048	249	364	613
27	Uttarakhand	36	30	66	25	33	58
28	West Bengal	279	2925	3204	44	641	685
29	A & N Islands	0	28	28	NIL	NIL	NIL
30	Chandigarh	1	0	1	1	0	1
31	D & N Haveli	0	8	8	APMC ACT NOT ENACTED		
32	Daman & Diu	0	2	2	APMC ACT NOT ENACTED		
33	Delhi	30	0	30	8	10	18
34	Lakshadweep	0	0	0	APMC ACT NOT ENACTED		
35	Puducherry	4	5	9	4	5	9
Total		**6489**	**22,505**	**28,994**	**2456**	**4734**	**7190**

Source: Report of Committee of State Ministers in-charge of Agriculture Marketing to Promote Reforms, 2013

Table A0.2: State-wise progress of reforms in 'State Agricultural Produce Marketing (Development & Regulation) Act, 2003' as on 31.12.2012[52]

S.No.	Stage of Reforms	Name of States/ Union Territories
1.	States/ UTs where reforms to APMC Act has been done for Direct Marketing; Contract Farming and Markets in Private/ Coop Sectors	Andhra Pradesh, Arunachal Pradesh, Assam, Goa, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Maharashtra, Mizoram, Nagaland, Orissa, Rajasthan, Sikkim, Tripura and Uttarakhand .
2.	States/ UTs where reforms to APMC Act has been done partially	**a) Direct Marketing:** NCT of Delhi, Chhattisgarh, Madhya Pradesh, Punjab (In Rule only not in Act) and Chandigarh (In Rule only not in Act) **b) Contract Farming:** Chhattisgarh, Madhya Pradesh, Haryana, Punjab (Only waiver of market fee and in rule only) and Chandigarh (Only waiver of market feel and in Rule only) **c) Private Market:** Punjab (In Act only not in Rule and also not implemented) and Chandigarh (In Act only and not in Rule and also not implemented)
3.	States/ UTs where there is no APMC Act and hence not requiring reforms	Bihar*, Kerala, Manipur, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, and Lakshadweep.
4.	States/ UTs where APMC Act already provides for the reforms	Tamil Nadu
5.	States/ UTs where reforms are not initiated	Meghalaya, J&K, West Bengal, Puducherry and Uttar Pradesh.
6.	Status of APMC Rules	a) States where Rules have been framed completely : Andhra Pradesh, Rajasthan, Maharashtra, Orissa, Himachal Pradesh, Karnataka. b) States where Rules have been framed partially : Mizoram only for single point levy of market fee; Haryana for contract farming

[52] DAC – MoA, 2013, *op. cit.*

Table A0.3: Area wise Progress of Market Reforms as per major areas identified in 'State Agricultural Produce Marketing (Development & Regulation) Act, 2003' as on 31/12/2012

Sl. No.	Area of Reforms	States adopting the suggested area of market reforms
1.	Setting up of Special Markets and Special Commodity Market	Andhra Pradesh, Gujarat, Maharashtra, Karnataka, Nagaland, Sikkim, Tamil Nadu, Tripura, Jharkhand, Mizoram and Uttarakhand
2.	PPP in Market Extension activities of Market Committee	Andhra Pradesh, Himachal Pradesh, Karnataka, Mizoram, Nagaland and Sikkim.
3.	To promote and encourage e-trading, Market Committee may establish regulatory system, create infrastructure and undertake other activities and steps needed thereto	Gujarat, H.P., Karnataka, Rajasthan, Nagaland, Sikkim, Goa and Maharashtra (under Rule 5 license granted to Commodity Exchanges registered under FMC), Uttarakhand and Haryana (On pilot basis).
4.	Secretary to be Chief Executive Officer of Market Committee. CEO shall be appointed by the Market Committee from the panel maintained by the Director/Board which may include professionals from open market.	Nagaland, Sikkim
5.	Contract farming sponsor shall register himself with the Marketing Committee or with a prescribed officer in such a manner as may be prescribed.	Andhra Pradesh, Arunachal Pradesh, Assam, Goa, Himachal Pradesh, Karnataka, Haryana, Maharashtra, Madhya Pradesh, Nagaland, Orissa, Rajasthan, Chhattisgarh, Sikkim, Tripura, Jharkhand, Uttarakhand
6.	The contract farming sponsor shall get the contract farming agreement recorded with the prescribed officer.	Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh, Gujarat, Goa, Karnataka, Haryana, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Rajasthan, Sikkim, Tripura and Jharkhand, Uttarakhand
7.	No title, rights, ownership or possession shall be transferred or alienated or vest in the contract farming sponsor or his successor or his agent as a consequence arising out of contract farming agreement.	Arunachal Pradesh, Assam, Goa, Haryana, Maharashtra, Nagaland, Orissa, Rajasthan, Sikkim, Tripura and Jharkhand, Andhra Pradesh, Karnataka, Uttarakhand
8.	Dispute settlement mechanism	Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh, Gujarat, Goa, Karnataka, Haryana, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Jharkhand, Himachal Pradesh, Uttarakhand
9.	Exemption of market fee on the sales to the contract farming sponsors taking place outside the market yard under the contract farming agreement	Arunachal Pradesh, Goa, Karnataka (Reduced by 30 percent), Maharashtra, Nagaland, Orissa, Rajasthan, Sikkim, Tripura and Punjab (exempted under the Rules) and Uttarakhand
10.	Specification of model agreement for contract farming	Chhattisgarh, Gujarat, Goa (As may be prescribed), Karnataka (As may be prescribed, Maharashtra (Rules), Nagaland, Rajasthan, Sikkim, Tripura and Jharkhand
11.	Single point levy of market fee	Andhra Pradesh, Rajasthan, Chhattisgarh, Gujarat, Goa, Himachal Pradesh, Karnataka, Madhya Pradesh, Nagaland, Sikkim, UT of

Sl. No.	Area of Reforms	States adopting the suggested area of market reforms
		Chandigarh, Punjab , Mizoram, Jharkhand and Uttarakhand
12.	Single registration/ license for trade / transaction in more than one market	Assam, Andhra Pradesh, Goa, Himachal Pradesh, Rajasthan, Maharashtra, Nagaland, Sikkim, and Jharkhand, Mizoram and Uttarakhand (single registration for trading in more than one market is not provided).
13.	No commission agent shall act on behalf of agriculturist seller and no deduction to be made towards commission	Madhya Pradesh, Chhattisgarh, Nagaland and Sikkim
14.	Establishment of private market yards/ private markets managed by a person other than a market committee.	Andhra Pradesh, Arunachal Pradesh, Assam, Gujarat, Goa, Himachal Pradesh, Karnataka, Maharashtra, Nagaland, Orissa (excluding for paddy / rice), Rajasthan, Sikkim, Tripura, Punjab (provided in Act not in Rules and also not implemented), UT of Chandigarh (provided in Act not in Rules and also not implemented), Jharkhand and Uttarakhand.
15.	Establishment of farmers/ consumers market managed by a person other than a market committee (Direct sale by the producer)	Arunachal Pradesh, Assam, Gujarat, Goa, Himachal Pradesh, Karnataka, Maharashtra, Nagaland, Rajasthan, Sikkim, Tripura, Punjab (only by State Govt), UT of Chandigarh (only by State Govt.), Jharkhand and Uttarakhand
16	Establishment of private yards and direct purchase of agricultural produce from agriculturist (Direct Purchasing from producer)	Arunachal Pradesh, Assam, Chhattisgarh, Gujarat, Goa, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Nagaland, Rajasthan, Sikkim, Tripura, Punjab (only in Rule not in Act), UT of Chandigarh (only in Rule not in Act),Jharkhand and Uttarakhand , U.P. (Only for bulk purchase from agriculturist of Wheat and Sarson through executive order time to time)
17.	Power to grant exemption from market fee by the State Government	Andhra Pradesh, Chhattisgarh, Gujarat, Goa, Madhya Pradesh, Maharashtra, Nagaland and Sikkim, Himachal Pradesh and Uttarakhand.
18.	Setting up of separate Market Extension Cell in the Board, establishment of State Agricultural Produce Marketing Standard Bureau	Nagaland, Sikkim and Karnataka

Source: Report of the Committee of State Ministers-in-charge of Agricultural marketing to Promote Reforms, 2013, Department of Agriculture and Cooperation - Ministry of Agriculture.

Table A0.4: Production and consumption of fertiliser (in thousand MT)

	Production	Consumption
2002-03	14,468	16,094
2003-04	14,265	16,798
2004-05	15,405	18,398
2005-06	15,575	20,340
2006-07	16,095	21,651
2007-08	14,707	22,570
2008-09	14,334	24,909
2009-10	16,221	26,486
2010-11	16,380	28,122
2011-12	16,363	27,567

Source: Indian Fertiliser Scenario 2012, Department of Fertiliser, Ministry of Chemicals and Fertilisers, Government of India

Table A0.5: State-wise capacity completed by CWC, SWCs & private investors under PEG scheme as on 31.01.2014 (in thousand tonne)

Sl. No.	Centre	Capacity approved by HLC	Capacity for which tenders sanctioned/ allotted	Capacity under construction	Total completed capacity
1	Punjab	4,999	4,302	533	3,720
2	Haryana	3,953	,3545	915	2,268
3	Uttar Pradesh	3,296	1,446	582	784
4	Maharashtra	700	588	058	530
5	Madhya Pradesh	2,367	1,937	1,089	401
6	Chhattisgarh	543	541	204	316
7	Karnataka	355	350	25	288
8	Odisha	375	300	43	209
9	Andhra Pradesh	451	401	182	200
10	Rajasthan	250	250	57	163
11	Tamil Nadu	345	295	50	105
12	Jammu & Kashmir	362	328	92	70
13	Bihar	940	575	48	67
14	Jharkhand	475	188	75	50
15	Gujarat	100	50	-	50
16	West Bengal	644	150	32	27
17	Kerala	55	5	-	5
18	Himachal Pradesh	143	38	35	3
19	Uttarakhand	25	10	10	-
	Total	2,0376	1,5298	4,028	9,255

Source: Food Corporation of India

Table A0.6: Warehousing capacity by the end of XIth Plan (2007-12)

S.No.	Name of the Organisation /Sector	Storage Capacity (in Million MTs)
1.	Food Corporation of India (FCI)	32.05
2.	Central Warehousing Corporation (CWC)	10.07
3.	State Warehousing Corporations (SWCs)	21.29
4.	State Civil Supplies	11.30
5.	Cooperative Sector	15.07
6.	Private Sector	18.97
Total		**108.75**

Table A0.7: Progress of rural godown scheme (as on 31st March 2014; cumulative figures)

1	Andhra Pradesh	1726	7,337,677	**15**	Assam	266	724,806
2	Madhya Pradesh	3127	6,981,671	**16**	Bihar	976	465,616
3	Punjab	1671	6,291,363	**17**	Jharkhand	16	79,918
4	Haryana	2174	6,205,438	**18**	Kerala	211	72,653
5	Maharashtra	3037	4,845,976	**19**	Jammu & Kashmir	7	35,648
6	Uttar Pradesh	1064	4,731,145	**20**	Himachal Pradesh	71	22,347
7	Gujarat	9293	3,029,714	**21**	Meghalaya	16	21,012
8	Karnataka	4251	2,933,085	**22**	Tripura	2	7,340
9	Chhattisgarh	519	1,646,450	**23**	Arunachal Pradesh	1	945
10	Rajasthan	1242	1,508,474	**24**	Mizoram	1	756
11	West Bengal	2467	1,352,308	**25**	Goa	1	299
12	Tamil Nadu	1037	1,110,793	**26**	Nagaland	2	250
13	Uttarakhand	265	784,677	**27**	UTs	0	-
14	Orissa	416	778,369		Total	33859	50,968,730

Source: Agmarknet, Directorate of Marketing & Inspection (DMI), Ministry of Agriculture

Table A0.8: Consumption habit in the recent times

		Rural	Urban
Rice	1993-94	82.61	62.42
	2004-05	77.62	57.31
	2009-10	74.70	56.64
Wheat	1993-94	52.56	54.02
	2004-05	50.98	53.05
	2009-10	53.03	52.82
Coarse cereals	1993-94	27.86	12.53
	2004-05	18.86	10.59
	2009-10	10.34	4.60
All cereals	1993-94	163.03	128.97
	2004-05	147.46	120.94
	2009-10	138.08	114.05
All pulses & Pulse Products	1993-94	9.25	10.46
	2004-05	8.64	9.98
	2009-10	7.92	9.60
All edible oil	1993-94	4.50	6.81
	2004-05	5.84	8.03
	2009-10	7.74	9.95

Source: State of Indian Agriculture 2012-13

Table A0.9: Number of Buses Owned by the Public and Private Sectors in India: 1961-2012

Year	**Public bus (in thousand)**	**Private bus (in thousand)**	**Total bus (in thousand)**	**Share of private buses in total**
1961	18	39	57	68%
1966	27	47	74	64%
1971	…	…	94	
1976	52	63	115	55%
1981	70	92	162	57%
1986	84	143	227	63%
1991	106	225	331	68%
1996	111	339	450	75%
2001	115	519	634	82%
2002	115	520	635	82%
2003	115	606	721	84%
2004	111	656	768	85%
2005	113	779	893	87%
2006	112	880	992	89%
2007	108	1,243	1,350	92%
2008	114	1,314	1,427	92%
2009	118	1,368	1,486	92%
2010	119	1,408	1,527	92%
2011	131	1,473	1,604	92%
2012	132	1,545	1,677	92%

Source: Road Transport Yearbook 2011-12, Transport Research Wing, Ministry of Road Transport and Highways.

Table A0.10: Compound Annual Growth Rates (in %) in Vehicles and Road Length

Period	Vehicles						Roads					
	Two Wheelers	Cars, Jeeps & Taxis	Buses	Goods Vehicles	three-wheelers and others	Total	National Highway	State Highway & other PWD roads	Rural	Urban	Project	Total
1961/1951	12.5	6.9	5.3	7.4	26.5	8.1	1.9	4.0	-0.5	NA	NA	2.7
1971/1961	20.7	8.2	5.1	7.4	15.0	10.9	0.0	2.6	6.0	4.5	NA	5.7
1981/1971	16.3	5.4	5.6	4.9	18.1	11.2	2.9	4.5	5.9	5.5	3.5	5.0
1991/1981	18.4	9.8	7.4	9.4	10.9	14.8	0.6	2.1	4.0	4.3	1.2	3.0
2001/1991	10.5	9.1	6.7	8.1	8.6	9.9	5.5	3.1	1.4	3.0	0.6	2.1
2011/2001	10.2	10.5	6.9	9.1	8.0	9.9	2.1	3.0	4.4	5.0	2.6	3.4
2012/2002	10.7	11.0	9.6	9.9	8.0	10.5	NA	NA	NA	NA	NA	NA

Source: Road Transport Yearbook 2011-12, Transport Research Wing, Ministry of Road Transport and Highways.

Table A0.11: The alternative frameworks for provisioning bus transport services

1. SERVICE PROVISION BY PUBLIC AUTHORITY	
The bus transport service is provided by a government agency; either as a monopoly or in competition with other public/private players. *Example: Gujarat, West Bengal, Delhi in India with parallel presence of public and private operators. In Maharashtra, public operators have the monopoly in intra-state segment.*	
Advantages	**Disadvantages**

• Less likely to abuse market power
• Greater prioritisation for public service objectives like
  ○ Reasonable fare
  ○ Greater spread of service network
  ○ Better quality of services
	• Efficiency loss
	• In the presence of budgetary support, limited incentive to improve efficiency
	• Bureaucratic inertia stifles innovation, becomes unresponsive to the changing requirements/ expectations of commuters
	  ○ Infrequent route rationalisation
	  ○ Limited type of services offered

2. COMPLETE DEREGULATION	
Free entry for private players, freedom to select routes, decide fares *Example: New Zealand.*	
Advantages	Disadvantages

• Better operational efficiency compared to public operator.
• Competition may lead to lower fare, better quality.
	• Profit motive reigns supreme. May lead to
	  ○ Higher fare if operator(s) has sufficient market power
	  ○ Overcrowding
	  ○ Lesser frequency
	• Limited service network
	  ○ Unprofitable routes are not serviced
	  ○ Fragmented network, requiring multiple transfers to reach destination
	• Economies of scale factor are quite significant with high fixed cost and relatively lower operating cost.
	  ○ If operators cannot reach sufficient size, introduces inefficiency.
	  ○ May lead to 'natural monopoly' kind of condition.

3. REGULATED FARE, SERVICE STANDARD	
Services provided by private operators, but Government plays a role in regulating fare and service obligation to ensure affordability and minimum service standards. *Example: Singapore.*	
Advantages	Disadvantages

• Reasonable fare
• Assured service standard
• Better operational efficiency compared to public operator
• Competition may lead to lower fare, better quality.
	• Requires a pro-active public regulator
	  ○ Strong legislative backing
	  ○ Broad powers to intervene
	  ○ Strong authorisation and ability for real time data acquisition and analysis
	  ○ Insulation from political interference
	• No control over input price escalation
	  ○ A reasonable fare may show large

	spikes in face of high inflation ○ Non-adjustments on the other hand reduces supply

4. COMPETITIVE TENDERING

- ***Private operators will compete to win the right to serve particular areas, routes***
- ***Competition may be on the basis of fare to be charged, royalty or premium to be paid/ subsidies required, standard of service to be rendered***
- ***Service standard to maintain can be part of the bid document, with specific mention of penalties in case of failure***

Example: International: United Kingdom, United States, France, Sweden, etc.; In India: Intra-city service in Ahmedabad, Surat, Indore, Bhopal, etc.

Advantages	Disadvantages
• In presence of sufficient competition, the winning bid shall approximate the competitive outcome. • Competitive fare • Competitive service standard • Service expansion with greater private participation • Better operational efficiency compared to public operator, • Reduced subsidy burden with better cost efficiency • Competitive entry may lead to lower fare, improvement in service quality	• Bus transport segment is characterised by high fixed cost ○ May require significant public support in provisioning infrastructure ▪ More so, as renewal of contract of the incumbent operator is not assured ○ May require a long contract period to recoup investment • Completeness of the contract depends on how well the future contingencies have been envisaged and accommodated at the time of entering into contract ○ A future unanticipated event with strong operational implication may derail the services. (E.g. Fall in passengers, rise in input costs, etc.) • Public authority needs to be pro-active to ensure that the contract terms are being adhered to ○ Power and infrastructure for real time data/information acquisition and analysis ○ Sufficient manpower ○ Legal backing to intervene • Cost savings that accrued at the time of regime change, may not extend to the subsequent rounds of tendering as the London, Copenhagen, Stockholm experience shows[53]. • Stipulation of very high standards for technical qualification may act as a barrier to entry for smaller operators. • Risk of collusion between public decision making authority/ regulator and operator in case of non-transparent bidding system, weak oversight power/ infrastructure to ensure adherence to contract terms

5. NEGOTIATED PERFORMANCE-BASED CONTRACTS

- ***Public authority/ regulator negotiates with the incumbent operator(s) to ensure minimum service quality across select performance parameters***

[53] Hensher, David A and Wallis, Ian P. 2005. Competitive Tendering as a Contracting Mechanism for Subsidising Transport: The Bus Experience. Journal of Transport Economics and Policy, 39 (3), pp. 295-321.

Advantages	Disadvantages
• Reasonable fare • Assured service standard • Better operational efficiency compared to public operator • Service terms are set through negotiation; potential to improve adherence • In case of incumbent private operators, lesser uncertainty associated with license renewal; incentivising long term investment • Facilitate negotiated improvement in service quality • Negotiated settlement enables quicker resolution of foreseen/unforeseen exigencies and improves mutual trust. • Can be adopted to improve the performance of the SRTUs. Performance may also be linked to financial support.	• Risk of collusion between public decision making authority/ regulator and operator. • Decision making may be slow. • Additional challenge of ensuring common standards in case of multiple operators

Appendix 3

A3.1 Rational for Selection of Two States

Based on the objective of CREW project, the criteria set forth for selection of states for staple food sector, wheat in case of India, are given below:

- The states should be top states in terms of wheat production. As such, six states were shortlisted – UP, MP, Punjab, Rajasthan, Haryana and Bihar. These six states accounted for more than 90 percent of national wheat production in 2011-12.
- To select the final two from the aforementioned shortlist, the following criteria were specified:
    - The states should exhibit differential behaviour from each other in terms of agricultural policy over time so that causal relationship of presence or absence of competition can be captured to a greater extent.
    - The states should have different characteristics in terms of general agriculture background (such as agro-climatic zone, agriculture performance, practices, etc.)

In terms of the above two criteria, Rajasthan and Bihar emerge as two most suitable states for analysis.

- Agricultural performances and practices of Rajasthan and Bihar are also significantly different.
    - Yield (3175 kg/ha in Rajasthan vs 2206 kg/ha in Bihar in 2011-12[54]) while recording a lower consumption of fertiliser (64 kg/ha vs. 184 kg/ha in 2011-12[55]),
    - Seed Replacement Rate (19 percent vs. 11 percent in 2006[56]),
    - Consumption of electricity for agricultural purposes (12073GWh vs. 794 GWh in 2009-10[57]),
    - Level of mechanisation (18.9 vs. 13.1 tractors per 1000 hectare of sown area in the 2005-08 period with 9.8 percent vs. 5.5 percent share in total sales of tractors[58]),
    - Area insured under National Agriculture Insurance Scheme (31 vs. 7 million hectare[59])
- As part of its agricultural plan, a number of initiatives were taken by Bihar in the seed sector which brought in greater public and private investment and significantly improved its seed availability scenario.
- In terms of procurement, in Bihar procurement has recently been transferred to the state government from national level agencies like Food Corporation of India. In contrast, Rajasthan still follows a dual system of both state and central level procurement. Thus, one can compare between the state government monopoly in procurement system in Bihar with that of multiple players in Rajasthan. The two states also show differences in terms of channel of government procurement.

[54] http://cacp.dacnet.nic.in/RPP/Rabi_Report_2013-14_English.pdf
[55] http://164.100.47.132/paperlaidfiles/AGRICULTURE/State%20of%20Indian%20Agriculture%202012-13%20(English)%20with%20cover.pdf
[56] http://seednet.gov.in/Material/National%20Seed%20Plan.pdf
[57] http://164.100.47.132/paperlaidfiles/AGRICULTURE/State%20of%20Indian%20Agriculture%202012-13%20(English)%20with%20cover.pdf
[58] http://www.ras.org.in/tractor_production_and_sales_in_india_1989_2009
[59] http://www.aicofindia.com/AICEng/Pages/Business_Profiles_Tenders/BusinessProfile.aspx

- In terms of marketing, Bihar has abolished the APMC Act altogether, thereby abolishing the APMC regulated mandis and allowing market forces to operate in agriculture market in the state. In sharp contrast, Rajasthan has followed the Central Government's model APMC act, and the only one among the six top wheat producing states to have implemented the main three objectives of the model Act – direct marketing of agricultural produce, private markets and contract farming. Considering that these markets are the place of first interaction between supply and demand, the contrast in market structure and extent of presence of competition across the two states is likely to have strong differential impacts on producer welfare as well as consumer welfare.
- Similar contrast is also observed in terms of creation of storage facility in the two states where Rajasthan is doing considerably better relative to Bihar.
- UP, with vast geographic spread, can be divided into three different agro climatic zones (Western, Middle and Central UP). To avoid the resultant complexities mar occur, both in capturing the situation in the state as well as comparing it against any second state, UP was eased out of the shortlist.
- The rest of the three states, viz., MP, Punjab and Haryana, do not show implementation of significant reform as mentioned above for Rajasthan and Bihar. Punjab and Haryana are from the same agro-climatic zone and also show lot of commonality in terms of agricultural performance and practices. With limited reform initiatives, the contrast factor in terms of difference in the path followed reform implementation is also weaker for these three states.

A3.2 Comparison in the Findings between States

Fertilisers

In case of fertiliser sector in production node, competitive environment could not develop among the fertiliser producers in light of domestic raw material scarcity and resultant distorted feedstock policy, equally distortionary pricing policy and unattractive investment policy. In case of the main fertiliser product urea, prices of the main input of natural gas as well as the final output are controlled by government. Many administrative lacunae such as non-release of subsidy on time, non-cash settlement of subsidy, etc. also have vitiated the investment climate. As a result, even though public sector presence in the sector is barely 7 percent and 29 percent in phosphatic and nitrogenous fertiliser production, large private sector presence has not translated in dynamic competition among the players. The legislative barriers may be low, but failure of the government to put in place enabling provisions has led to a sluggish business environment.

On the other hand, with the issue price of urea being kept artificially low, the consumption of fertilisers has been on the rise despite stagnancy in domestic production. Most noticeably, even the marginal and small farmers now enjoy better access and higher consumption. This, however, has led to a situation of higher import dependency (30 percent for nitrogenous fertilisers) and ballooning subsidy bill (Rs 730 billion estimated for 2014-15). Moreover, the distorted subsidy structure across different fertilisers have led to imbalanced usage, especially in the northern part of the country – in place of recommended 4:2:1 usage ration for N, P and K based fertilisers, the ratio in Punjab and Haryana in 2010-11 was 19:6:1 and 20:7:1. What is rather alarming is the stagnancy in agricultural production despite the increasing fertiliser consumption. In summary, government policy relevant to the sector has neither been able to foster competition in the market, nor have been able to unambiguously enhance the farmers' welfare.

Increased private participation in the distribution network though looks to be an important contributor to the improved access to fertiliser. The primary survey in both the states of Rajasthan and Bihar suggests that privately owned stores are, in general, more in number compared to government run stores. However, the survey also points towards significant within state variation in terms of access to inputs. For example, Bhilwara in Rajasthan and Saran in Bihar were found to be considerably lagging behind Alwar (Rajasthan) and Vaishali (Bihar) in terms of easy accessibility.

The following tables provide responses of the farmers when asked about number of stores near the locality of residence. A bifurcation between government and private makes it very clear that number of privately owned stores for both fertiliser and seed is much higher compared to government stores. In case of fertiliser, almost 100 percent of the respondents reported only 1 government store in Bhilwara (Rajasthan) and Saran (Bihar) while about 75 percent of the respondents reported the same in case of other districts covered in the survey. Only in Alwar about 25 percent of the respondents reported 2 government stores in the vicinity. Interestingly, about 18 percent of the farmers could not say anything about the existence of a government owned fertiliser store. Whereas except Bhilwara, number of privately owned stores are much higher in the districts the survey has been conducted.

Almost a similar trend has been observed in case of seed stores also. An interesting point regarding access to seeds is in Alwar, 48 percent of the farmer could not say whether the stores are owned by government or private.

Table A0.1: No. of Government and private Fertiliser Store as Reported by Households (in per cent)

Sector	State/District	No. of Government Fertiliser Store				No. of Private Fertiliser Store				
		0	1	2	Not known	<= 5	6 to 10	11 to 15	>=16	Not known
Fertiliser	**Rajasthan**									
	1. Alwar	0	74	24	1	18	28	35	18	0
	2. Bhilwara	1	97	0	2	82	5	2	0	11
	Bihar									
	1. Saran	0	100	0	0	57	43	0	0	0
	2. Vaishali	3	79	0	18	38	25	23	11	3

Warehousing

The progress in expanding the warehousing facilities has remained rather weak in India in general. Despite a number of policy and schemes to attract private participation and farmer welfare, there has been a general lack of sustained private investment in the warehousing sector. Private sector accounted for only 17 percent of national capacity by the end of the XIth plan period. Even the growth of the public sector has been poor. However, which is also alarming is the low utilisation of even these meagre resources in some of the states such as Bihar.

In India, 555 applications with capacity of around 2.33 million MT have applied for registration under WDRA and 365 had been registered as on December 2013. Issuance of NWR had been notified for 115 agricultural and 26 horticulture commodities. In Rajasthan, 51 warehouses had registered with WDRA, with a total registered capacity of 0.15 million tonnes. Among these, 14 are owned by the private sector, with a capacity of 0.11 million MT. Bihar had not seen any registration till December 201360.

A total of 9.3 million tonne of warehouse capacity only could be developed under the PEG scheme across the nation against a target exceeding 15.0 million tonne. And, even this progress has been rather skewed in favour of states like Punjab and Haryana. Rajasthan have seen creation of additional capacity of barely 0.163 million under the scheme. The situation in Bihar is even more

Table A0.2: FCI, CWC and SWC godown capacity and utilisation in Rajasthan and Bihar

State	Time	FCI			CWC			SWC			Grand Total
		Covered	CAP	Total	Covered	CAP	Total	Covered	CAP	Total	
CAPACITY (MILLION TONNE)											
Bihar	01-02-12	0.609	0.1	0.709	0.119	0	0.119	0.262	0	0.262	1.09
	01-01-14	0.63	0.1	0.73	0.121	0	0.121	0.291	0	0.291	1.142
Raj	01-02-12	1.577	0.608	2.185	0.399	0.02	0.419	0.786	0	0.786	3.39
	01-01-14	2.211	0.433	2.644	0.427	0.046	0.473	0.948	0	0.948	4.065
UTILIZATION (%)											
Bihar	01-02-12			34			95			81	
	01-01-14			56			88			90	
Raj	01-02-12			83			89			92	
	01-01-14			83			103			95	

Source: Dept of Food and Public Distribution

abysmal at 0.067 million tonne (Refer to Appendix to Chapter 2).The progress of the two states continues to be tardy even in case of the Rural Godown Scheme. Whereas the cumulative national capacity creation under the scheme is around 51.0 million tonne, Rajasthan and Bihar's share are just 1.51 and 0.47 million tonne respectively.

Distribution

This section compares the impacts and changes in Rajasthan and Bihar because of distribution policies of the government. At the national level as well as in case of Bihar, the joint allotment under BPL and AAY show a fall over the decade under consideration. Overall, regular allocation under TPDS declined in Bihar over the period at 5 percent pa while overall offtake improved on the other hand at 5 percent pa, resulting in an improvement in offtake to allotment ration from a measly 20 percent in 2002-03 to 55 percent in 2012-13. In between, a high of 78 percent was achieved in 2010-11. Offtake from allotment under APL quota is particularly low at 19 percent in 2012-13 (0.20 percent in 2002-03). Incidentally, allotment under APL quota accounts for 53 percent of state total regular TPDS allotment.

In case of Rajasthan, regular overall allocation under TPDS declined at 6 percent pa against an improvement in overall offtake at 9 percent pa. As a result, offtake as ratio to allotment

[60] http://www.wdra.nic.in/

improved from 24 percent in 2002-03 to 98 percent in 2012-13. Offtake has been consistently above 90 percent percent of allocation for the last 5 years and for all three categories. The offtake ratio had been high for the BPL and AAY categories since 2002-03 (80 percent and 96 percent respectively). The major improvement has come in the offtake from the allotment under APL category which was particularly high at 99 percent in 2012-13 (5 percent in 2002-03).

It needs to be noted here that the improving offtake relative to allotment figure was made possible to a significant extent by the declining regular allotment to TPDS scheme. Allotment has been on the decline for all except AAY program. The offtake under BPL has been more or less stagnant (0.75 percent growth pa in Bihar and -0.21 percent in Rajasthan over 2002-03 to 2012-13).

Table A0.3: Allotment-Offtake under TPDS

STATES/ UTs	Year	ALLOTMENT (In '000 TONNES)			TOTAL	OFFTAKE (In '000 TONNES)			TOTAL
		BPL	AAY	APL		BPL	AAY	APL	
Bihar	**2002-03**	1,341	252	1,375	2,968	381	203	3	587
Bihar	**2012-13**	436	420	963	1,818	410	410	181	1,001
Rajasthan	**2002-03**	795	155	2,930	3,880	636	149	147	932
Rajasthan	**2012-13**	630	391	1,158	2,180	623	382	1,144	2,149
All India	**2002-03**	9,827	1,842	26,799	38,468	6,341	1,638	1,637	9,616
All India	**2012-13**	5,850	3,342	14,135	23,328	6,472	3,306	9,871	19,649
Bihar	**CAGR (02-03 to 12-13**	-11%	5%	-4%	-5%	1%	7%	51%	5%
Rajasthan		-2%	10%	-9%	-6%	0%	10%	23%	9%
All India		-5%	6%	-6%	-5%	0%	7%	20%	7%

Source: Dept of Food and Public Distribution

The largely stagnant offtake (in quantity) under BPL category at all India level as well as for both the states indicates the stagnancy in the outreach of the existing TPDS system supporting the economically weaker sections of the society. Thus, despite high level of subsidy, the overall benefits transferred to the weaker section (BPL+AAY) has not grown much over time. On the other hand, offtake by APL category has increased from 1,637,000 tonne to 9,871,000 tonne over the decade raising serious question about the targeting efficacy of the existing system.

Moreover, the issue of availability and quality of products available persists from anecdotal as well as field survey experiences despite the slew of steps taken by central and state governments mentioned above. The financial viability of FPS also remains a vexed issue despite recent initiative to allow FPS shops to sell non-PDS items and also allowing flexibility to states/UTs to decide on commission for FPS owners for sale under BPL and APL category. In the absence of suitably addressing this issue, a systemic implicit encouragement for leakage and pilferage will continue to exist.

In addition to the issues pointed above, the overall administration of the system has become arcane – from identification of beneficiary and issuance of ration card, to release and movement of stocks, to actual issuance of entitled food grain. The implementation of TPDS is plagued by large exclusion of BPL families, inclusion of APL families and by the prevalence of ghost BPL cards. In case of Bihar, exclusion error was as high as 30 percent of households

coupled with an inclusion error of 12 percent and wrong issuance of BPL cards of 14 percent. In case of Rajasthan, the figures were 17 percent, 5 percent and 0 percent respectively.[61] Post PDS Control Order 2001 and initiation of nine point action by states/UTs, a total of 38.378 million bogus/ ineligible ration cards in 29 States had been identified and cancelled up to 31.12.2013[62]. The issue of irregularity in supply and poor quality of wheat supplied through TPDS has been reported in both states. Monitoring of activities of the fair price shops (FPS) through inspection by district/taluka level officials are irregular and ineffective.

Both these factors of wrong targeting and weakness in delivery mechanism have resulted in large scale leakages and diversion of subsidized grains to unintended beneficiaries. This problem is particularly plaguing in Bihar, where total leakage has been estimated to be larger than 75%, whereas in Rajasthan the leakage has been in the range 25 percent to 50 percent. Moreover, the wrong inclusion of APL families also adds to subsidy burden[63]. In Rajasthan, out of a total offtake of 2149 thousand tonne, APL segment accounted for 1144 thousand tonne in 2012-13. Another issue plaguing this sector is the financial non-viability. Some of the initiatives taken to address the shortcomings of the system are[64]:

- Larger involvement of PRIs in running FPS shops. 0.129 million FPS out of about 0.515 million in operation are being run by gram panchayats, self-help groups, co-operatives, etc.
- Display of BPL and AAY lists by fair price shops
- District-wise and FPS-wise allocation of food grains on websites and other prominent places has been initiated in 22 States/UTs.
- Door-step delivery of food grains to FPS by State Governments instead of letting private transporters to transport goods is being done in 20 States/UTs.
- 27 State/UT Governments have taken up training programmes for FPS level Vigilance Committees.
- Computerisation of TPDS has been taken up across the country.
- 23 State/UT Governments have reported regarding implementation of this monthly certification by village panchayats/urban local bodies/vigilance committees/women's Self Help Groups of delivery of food grains at price shops and their distribution to ration card holders
- Sale of non-PDS items such as edible oil, pulses, milk powder, soaps etc.in FPS in 14 states/UTs to make operations of FPS economically viable

The objective of the TPDS system was to ensure supply of wheat and other products at a significantly lower price than open market as a social protection towards food security. However, as can be seen from above, actual offtake has risen largely for the APL category, followed by those benefitting from the AAY scheme. The offtake for those from the BPL category has been largely stagnant at all India level as well as for both the states. This indicates the stagnancy in the outreach of the existing TPDS system supporting the economically weaker sections of the society. Thus, despite high level of subsidy, the overall benefits transferred to the weaker section (BPL+AAY) has not grown much over time. On the other hand, offtake by APL category has increased from 1,637,000 tonne to 9,871,000 tonne over the decade raising serious question about the targeting efficacy of the existing system.

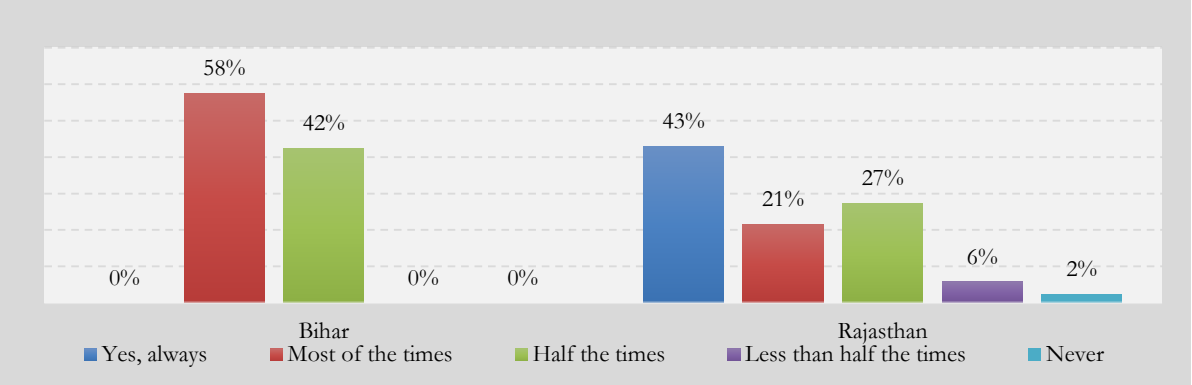
[61] Planning Commission, 2005, Performance Evaluation of Targeted Public Distribution System (TPDS) (http://planningcommission.nic.in/reports/peoreport/peo/peo_tpds.pdf)
[62] Department of Food and Public Distribution (http://dfpd.nic.in/?q=node/101)
[63] Planning Commission, 2005, *op. cit.*
[64] Department of Food and Public Distribution (http://dfpd.nic.in/?q=node/101)

Moreover, the issue of availability and quality of products available persists from anecdotal as well as field survey experiences despite the slew of steps taken by central and state governments mentioned above. The financial viability of FPS also remains a vexed issue despite recent initiative to allow FPS shops to sell non-PDS items and also allowing flexibility to states/UTs to decide on commission for FPS owners for sale under BPL and APL category. In the absence of suitably addressing this issue, a systemic implicit encouragement for leakage and pilferage will continue to exist.

The perception survey also covered a few important dimensions of consumer welfare issues. These are availability, both from PDS and in free market, quality, variety available and satisfaction level of the consumers with current situation and the changes observed in last few years.

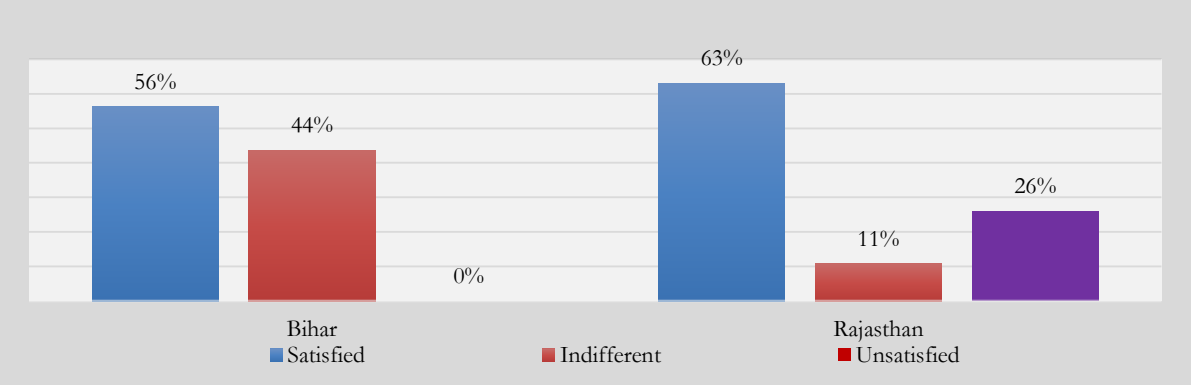
It has been reported by more than 50 percent of the consumers who purchase wheat from PDS shops that they do not get the quantity as per entitlement. The situation is more or less same in both Bihar and Rajasthan. This finding is in tandem with various known malpractices at various level of PDS system in the country, as reported in many of the studies.

Figure A0.1: Received as per entitlement



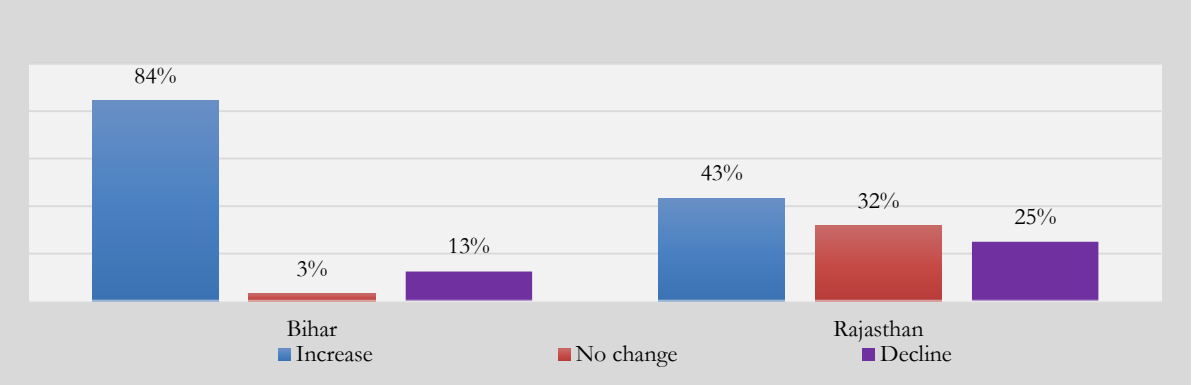
Regarding the quality of wheat supplied through PDS shops, about 60 percent of the PDS consumers has expressed their satisfaction, whereas in Rajasthan, more than 25 percent reported that they are not satisfied with the quality given through PDS shops. Consumers have reported poor quality along with various impurities in wheat purchased from PDS shops.

Figure A0.2: Satisfied with Quality of Wheat through PDS



When asked about change in quality of wheat given through PDS, 84 percent in Bihar has reported significant improvement during recent years. Whereas the response obtained from PDS consumers of Rajasthan showed a more dismal picture. More than 30 percent reported that no change in quality while 25 percent reported deteriorating quality in recent years.

Figure A0.3: Change in Quality



Regarding availability of multiple varieties in open market, majority of the consumers in Bihar has reported lesser varieties, whereas in Rajasthan a significant proportion of the consumers told that large numbers of varieties are available in open market. However, a majority of the consumers have reported price variation across shops in open market, though marginal. In general, about 10 percent of the consumers have reported significant variations in price of wheat across shops in both states.

Figure A0.4: Availability of Multiple varieties with private retailer

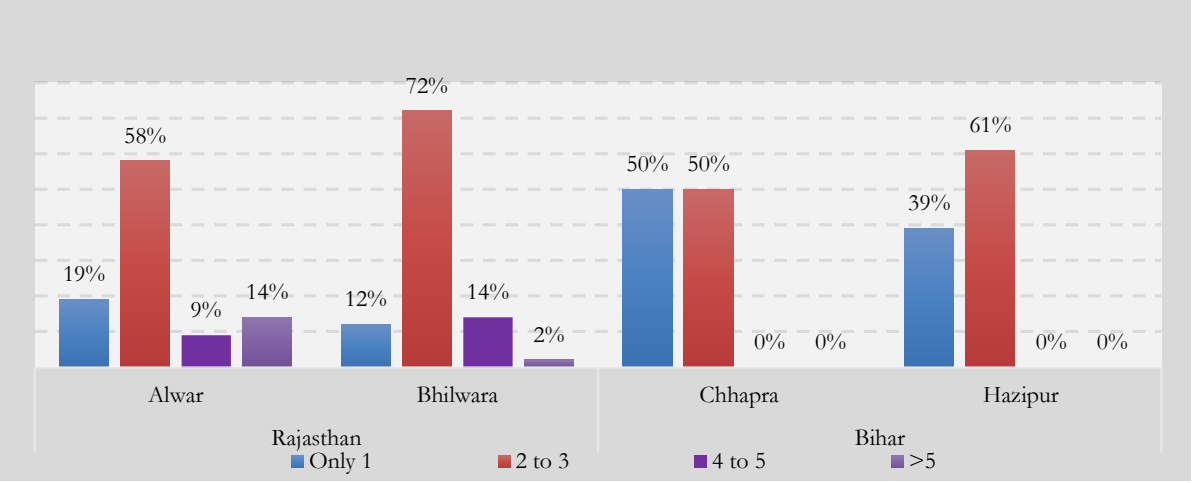
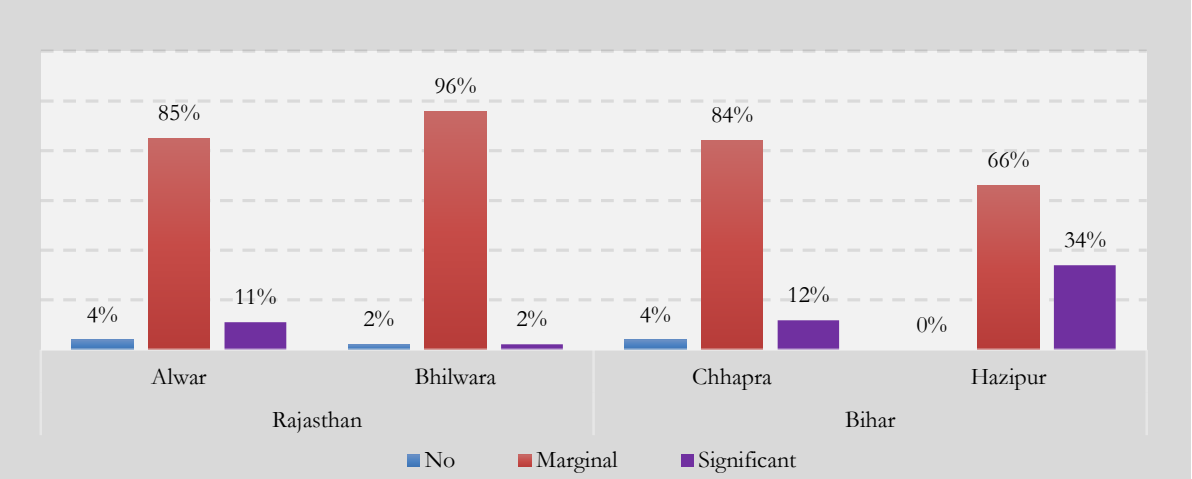


Figure A0.5: Price variation across private retailers



The following figures present satisfaction level of consumers regarding current situation in terms of various parameters and the change therein during recent years. It is noted that proportion of consumers not satisfied with current situation are mostly in terms of price, quality and varieties available in market. In terms of change during recent years, major concerns were found in case of quality and price. Share of respondents who had experienced significant increase in quality always trailed behind those experiencing significant increase in price in all the states and districts. Overall, consumers in Rajasthan fared relatively better in terms of increased accessibility, assured availability and choice.

Figure A0.6: Satisfaction level with accessibility, availability, price, quality and varieties

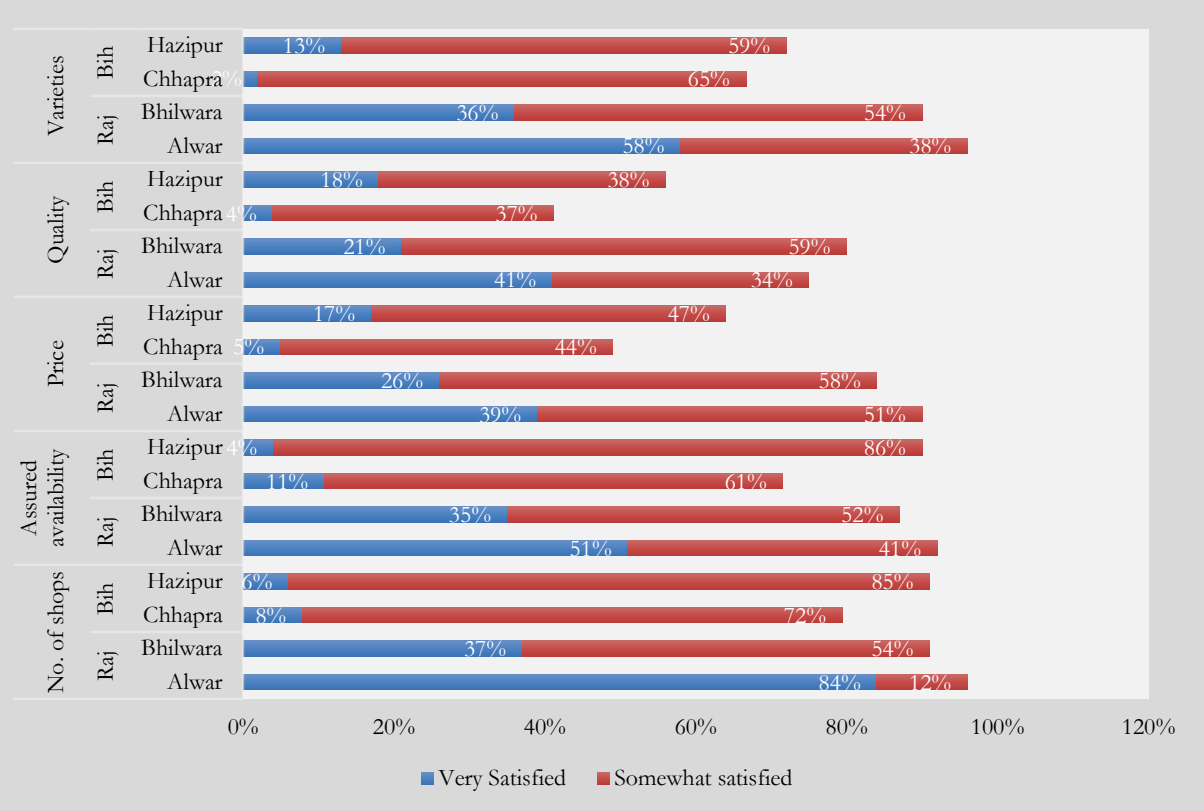
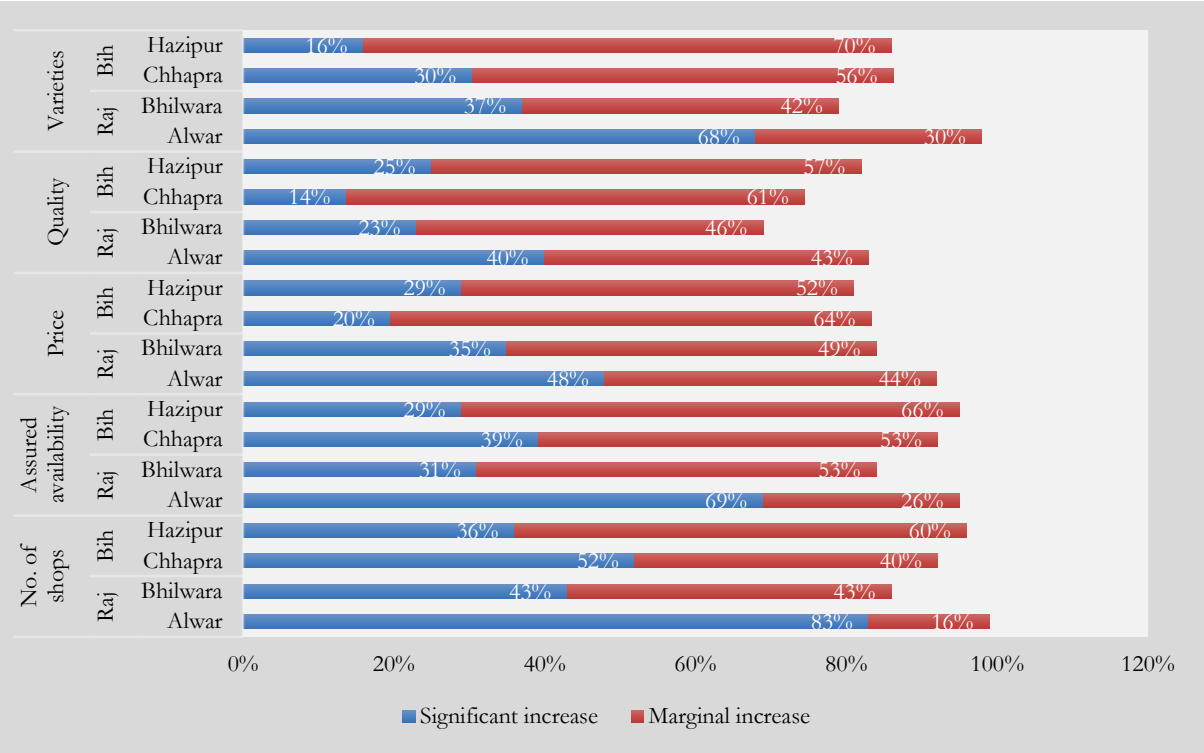
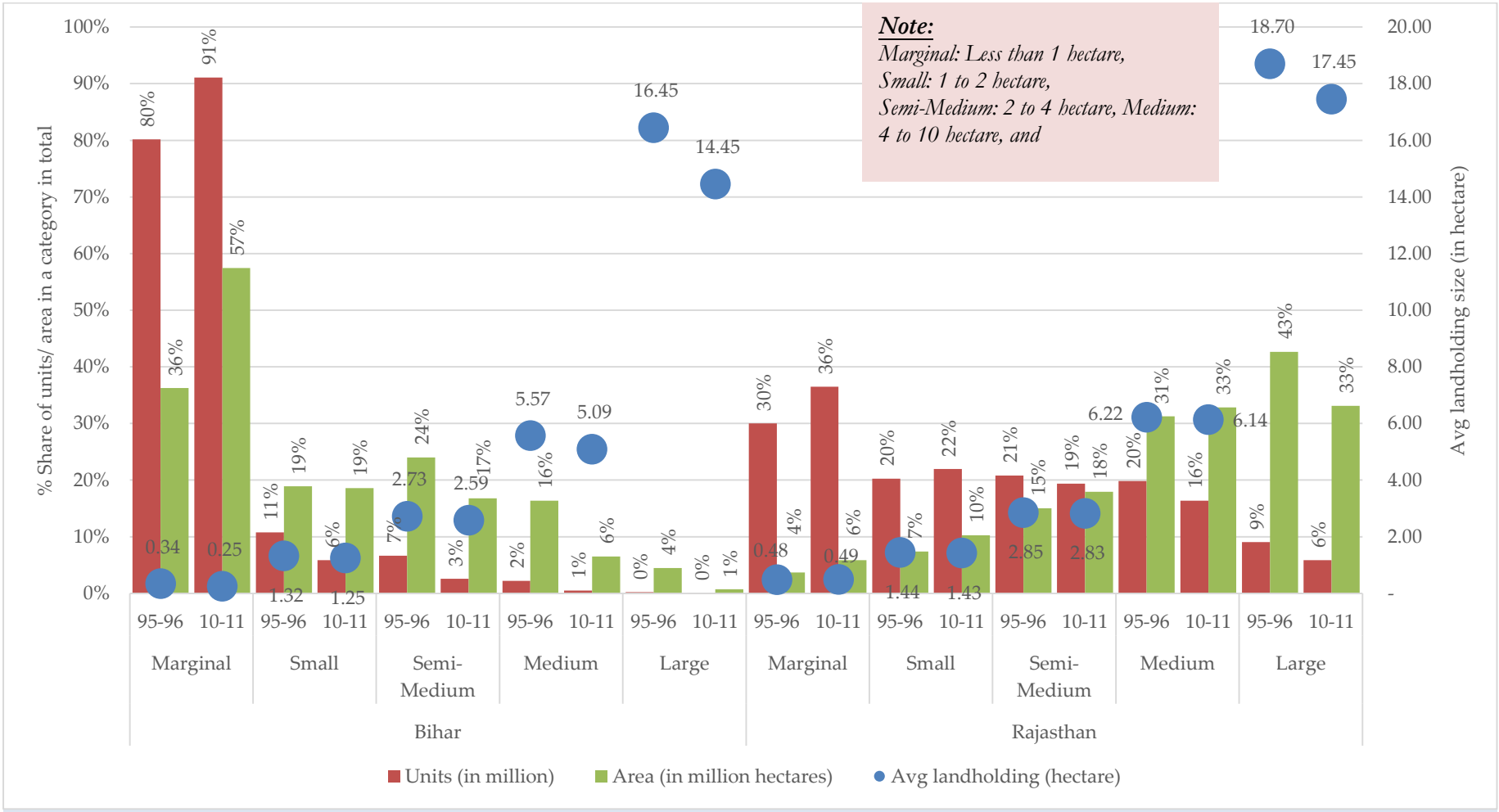


Figure A0.7: Changes in accessibility, availability, price, quality and varieties



A3.3 Figures

Figure A0.8: Changes in landholding pattern over 1995-96 to 2010-11 period



Source: Commission for Agricultural Costs and Prices

A3.4 Table

Table A0.4: Number, area and type of agricultural holdings in 2010-11

Geography	Individual Holdings		Joint Holdings		Sub-Total (Individual+Joint)		Institutional Holdings		Total Holdings	
	Units (in mn)	Area (in mn ha)	Units (in mn)	Area (in mn ha)	Units (in mn)	Area (in mn ha)	Units (in mn)	Area (in mn ha)	Units (in mn)	Area (in mn ha)
India	119	131	20	27	138	158	0	2	138	160
	86%	*82%*	*14%*	*17%*	*100%*	*99%*	*0%*	*1%*	*100%*	*100%*
Bihar	14	5	2	1	16	6	0	0	16	6
	85%	*81%*	*14%*	*18%*	*100%*	*100%*	*0%*	*0%*	*100%*	*100%*
Rajasthan	5	15	2	6	7	21	0	0	7	21
	77%	*70%*	*23%*	*29%*	*100%*	*99%*	*0%*	*1%*	*100%*	*100%*

Source: Commission for Agricultural Costs and Prices

Table A0.5: Average area of landholding in 2010-11 (in hectares)

Geography	Landholding segment^					
	Overall	**Marginal**	**Small**	**Semi-Medium**	**Medium**	**Large**
India	1.15	0.39	1.42	2.71	5.76	17.38
Bihar	0.39	0.25	1.25	2.59	5.09	14.45
Rajasthan	3.07	0.49	1.43	2.83	6.14	17.45

Source: Commission for Agricultural Costs and Prices
Note ^: Marginal: Less than 1 hectare, Small: 1 to 2 hectare, Semi-Medium: 2 to 4 hectare, Medium: 4 to 10 hectare and Large: 10 hectare & above

Table A0.6: Landholding distribution across holding type and holding size in 2010-11

Geography	Size Class^		Individual Holdings		Joint Holdings		Sub-Total (Individual+Joint)		Institutional Holdings		Total Holdings	
			Units (in mn)	Area (in mn ha)	Units (in mn)	Area (in mn ha)	Units (in mn)	Area (in mn ha)	Units (in mn)	Area (in mn ha)	Units (in mn)	Area (in mn ha)
India	**Overall**		119	131	20	27	138	158	0	2	138	160
	Segmental breakup	Marginal	68%	24%	64%	18%	67%	23%	58%	3%	67%	23%
		Small	18%	23%	17%	18%	18%	22%	14%	3%	18%	22%
		Semi-Medium	10%	24%	11%	22%	10%	24%	11%	5%	10%	24%
		Medium	4%	21%	6%	24%	4%	21%	9%	9%	4%	21%
		Large	1%	8%	1%	18%	1%	10%	8%	81%	1%	11%
Bihar	**Overall**		14	5	2	1	16	6	0	0	16	6
	Segmental breakup	Marginal	92%	60%	88%	48%	91%	58%	76%	27%	91%	57%
		Small	6%	19%	7%	19%	6%	19%	13%	17%	6%	19%
		Semi-Medium	2%	16%	4%	21%	3%	17%	8%	20%	3%	17%
		Medium	0%	6%	1%	10%	0%	6%	3%	16%	1%	6%
		Large	0%	0%	0%	2%	0%	1%	1%	19%	0%	1%
Rajasthan	**Overall**		5	15	2	6	7	21	0	0	7	21
	Segmental breakup	Marginal	38%	7%	31%	4%	36%	6%	29%	2%	36%	6%
		Small	23%	12%	20%	7%	22%	10%	18%	3%	22%	10%
		Semi-Medium	19%	19%	21%	15%	19%	18%	20%	7%	19%	18%
		Medium	16%	35%	19%	29%	16%	33%	18%	13%	16%	33%
		Large	5%	28%	9%	46%	6%	33%	15%	75%	6%	33%

Source: Commission for Agricultural Costs and Prices

Note ^: Marginal: Less than 1 hectare, Small: 1 to 2 hectare, Semi-Medium: 2 to 4 hectare, Medium: 4 to 10 hectare and Large: 10 hectare & above

Table A0.7: Cost of cultivation

		1996-97	2000-01	2010-11	1996-97	2000-01	2010-11
Cost of Cultivation per hect. (Rs.)		10,921	14,512	24,599	14,879	18,308	32,681
Cost of Production per qtl. (Rs.)		423	507	772	394	508	689
Input Qty. per Hect.	Seed (Kg.)	114	115	113	144	151	151
	Fertilizer (Kg. Nutrients)	114	135	126	110	110	133
	Manure (Qtl.)	2	2	0	8	3	3
	Human Labour (Man hrs.)	601	513	479	589	551	464
	Animal Labour (Pair hrs.)	107	48	32	31	35	6

Source: Commission for Agricultural Costs and Prices

Table A0.8: Breakup of cost of cultivation

	Bihar				Rajasthan			
Items	**96-97**	**00-01**	**10-11**	**CAGR**	**96-97**	**00-01**	**10-11**	**96-97**
Operational Cost	**6,713**	**9,109**	**17,544**	**7.10%**	**9,567**	**12,106**	**18,855**	**4.97%**
Human Labour	*2,084*	*2,681*	*6,273*	*8.19%*	*3,836*	*4,836*	*8,437*	*5.79%*
Bullock Labour	*834*	*507*	*837*	*0.02%*	*423*	*524*	*132*	*-1.22%*
Machine Labour	*653*	*1,932*	*3,397*	*12.50%*	*1,470*	*1,799*	*3,400*	*6.17%*
Seed	*769*	*928*	*2,005*	*7.09%*	*1,090*	*1,259*	*2,352*	*5.65%*
Fertilizer & Manure	*1,372*	*1,740*	*2,057*		*1,419*	*1,367*	*2,096*	
Insecticides	*0*	-	-		*5*	*13*	*17*	
Irrigation Charges	*831*	*1,086*	*2,549*	*8.34%*	*1,131*	*2,057*	*2,053*	*4.35%*
Miscellaneous	-	-	-		-	-	-	
Interest on Working Capital	*170*	*236*	*426*	*6.80%*	*193*	*251*	*369*	*4.75%*
Fixed Costs	**4,180**	**4,934**	**6,804**	**3.54%**	**5,312**	**6,202**	**12,776**	**6.47%**

Source: Commission for Agricultural Costs and Prices

Table A0.9: State-wise progress of reforms in 'State Agricultural Produce Marketing (Development & Regulation) Act, 2003' as on 31.12.2012

S.No.	Stage of Reforms	Name of States/ Union Territories
1.	States/ UTs where reforms to APMC Act has been done for Direct Marketing; Contract Farming and Markets in Private/ Coop Sectors	Andhra Pradesh, Arunachal Pradesh, Assam, Goa, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Maharashtra, Mizoram, Nagaland, Orissa, Rajasthan, Sikkim, Tripura and Uttarakhand .
2.	States/ UTs where reforms to APMC Act has been done partially	**a) Direct Marketing:** NCT of Delhi, Chhattisgarh, Madhya Pradesh, Punjab (In Rule only not in Act) and Chandigarh (In Rule only not in Act) **b) Contract Farming:** Chhattisgarh, Madhya Pradesh, Haryana, Punjab (Only waiver of market fee and in rule only) and Chandigarh (Only waiver of market feel and in Rule only) **c) Private Market:** Punjab (In Act only not in Rule and also not implemented) and Chandigarh (In Act only and not in Rule and also not implemented)
3.	States/ UTs where there is no APMC Act and hence not requiring reforms	Bihar*, Kerala, Manipur, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, and Lakshadweep.
4.	States/ UTs where APMC Act already provides for the reforms	Tamil Nadu
5.	States/ UTs where reforms are not initiated	Meghalaya, J&K, West Bengal, Puducherry and Uttar Pradesh.
6.	Status of APMC Rules	c) States where Rules have been framed completely : Andhra Pradesh, Rajasthan, Maharashtra, Orissa, Himachal Pradesh, Karnataka. d) States where Rules have been framed partially : Mizoram only for single point levy of market fee; Haryana for contract farming

Source: Report of the Committee of State Ministers-in-charge of Agricultural marketing to Promote Reforms, 2013, Department of Agriculture and Cooperation - Ministry of Agriculture.

Table A0.10: Actual progress in implementation of reform initiatives under the model 'State Agricultural Produce Marketing (Development & Regulation) Act, 2003'

Name of the Progressive State/UT	No. ts Operated and Managed by State Govt./APMC	No. of Direct Marketing Licenses issued for Direct sourcing from farmers by Private entrepreneurs	No. of Contract Farming cases registered	No. of Licenses to Private Markets issued	No. of licenses issued for trading in more than one market
Maharashtra (fully reformed)	-	107 (48 operational)	7	23 including 3 Terminal Market Complex (TMC)	38
Andhra Pradesh (fully reformed)	107 Rythu Bazaars functional	171	1	4	-
Gujarat (fully reformed)	-	17	2	13	No provision
Karnataka (fully reformed)	15 Raithara Santhe functional	9	Permitted but not registered so far	3	249
Madhya Pradesh (partially reformed)	-	2	1	No provision existed	8
Rajasthan (fully reformed)	-	76	Permitted but not registered so far	2	1
Haryana (partially reformed)	37 Apni Mandi functional	Provision has recently been made as per State Govt.	6	Permitted	
Punjab (partially reformed)	26 Apni Mandi functional	22	1 and 8 old registration	Not permitted	
Tamil Nadu (through executive orders)	179 Uzavar Sandhai functional	-	5	6 (including Terminal Market Complex)	No provision

Table A0.11: Minimum Selling Price (MSP) of wheat over the years

			Addl State Bonus, Rs/qtl	
	MSP, Rs/qtl	MSP includes Incentives, , Rs/qtl	Bihar	Rajasthan
1990-91	215			
1991-92	225			
1992-93	275	25		
1993-94	330	25		
1994-95	350			
1995-96	360			
1996-97	380			
1997-98	475	60		
1998-99	510	55		
1999-00	550			
2000-01	580			
2001-02	610			
2002-03	620			
2003-04	620			
2004-05	630			
2005-06	640			
2006-07	700	50		
2007-08	850	100		
2008-09	1000			
2009-10	1080			
2010-11	1100			
2011-12	1170	50		
2012-13	1285			100
2013-14	1350			150
2014-15	1400			

Table A0.12: Subsidy released to FCI and Decentralised Procurement States for the last 5 years (in Rs. billion)

	YEAR				
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
FCI	468.67	507.30	595.26	719.80	755.00
Andhra Pradesh	-	-	-	2.26	15.55
Madhya Pradesh	14.34	20.14	29.65	33.57	33.99
Uttar Pradesh*	53.69	24.85	12.20	0.39	0.05
West Bengal	11.03	12.41	14.82	18.16	15.51
Chhattisgarh	10.08	19.23	16.70	23.45	23.75
Uttarakhand	2.30	2.99	2.18	2.44	3.18
Tamil Nadu	6.72	15.01	18.98	11.76	10.07
Gujarat	0.40	0.20	060	1.15	-
Orissa	12.82	22.44	29.35	27.32	30.41
Karnataka	-	-	-	-	4.93
Kerala	2.37	4.72	3.98	5.24	4.28
Rajasthan	-	-	-	-	0.68
States Total	113.75	122.00	128.45	125.74	142.40
TOTAL (FCI+States)	**582.42**	**629.30**	**723.71**	**845.54**	**897.40**

*Note: * Uttar Pradesh has since opted out of DPS*

Appendix 4

A4.1 Selection of States and Cities

- Based on the objective of CREW project, the criteria set forth for selection of states and cities for bus passenger transport sector in case of India are given below:
    - The state as well as city should be large enough so that demand for inter-city and intra-city passenger movement is high.
    - Substitutes to bus passenger transport are not significant. For example, metro rail network or suburban EMU facilities are not available. This specific criterion excludes auto rickshaws on share basis etc. that are available for intra-city passenger movement but in no way can be called as a comfortable way of commuting for the city residents.
    - The infrastructure facility regarding to road network, including state and national highways, should be large enough so that introducing bus passenger transport and the demand for the same is high and profitable
    - The state should be experiencing higher level of economic activities as well as there is large number of fast growing growth centres so that the demand for inter-city transport within the state is also higher.
    - The fleet size should be large enough to reflect that there is a scope for enhanced competition in the sector

- Based on the above criteria, first, the top 10 capital cities in terms of total population were shortlisted for further consideration, with the only exception being Ahmedabad considering its size in terms of population as well as its pre-eminence as the economic hub of Gujarat. These capital cities also belong to larger states with multiple cities, enabling us to study the inter-city transport network too without any problem.
- The rationale for selecting large capital cities is that the required eco-system to enable growth of an extensive intra-city bus network large enough to create scope for large number of players and/or viable competition is more likely to develop in these large cities. Similarly, due to the economic pull and large population, the larger inter-city transport networks are likely to grow around these large cities. Larger network allows for larger number of players and more competition, which is more suitable from the view point of the study objectives.

Table A0.1: The initial list of chosen city for selecting sample location

North	East	South	West	Central
New Delhi, Delhi	Kolkata, West Bengal	Bangalore, Karnataka	Mumbai, Maharashtra	Bhopal, Madhya Pradesh
Lucknow, Uttar Pradesh	Patna, Bihar	Hyderabad, Andhra Pradesh	Ahmedabad, Gujarat	
		Chennai Tamil Nadu	Jaipur Rajasthan	

(Based on Census 2011 population data)

- Among the top cities, in Delhi, Mumbai and Kolkata – dependence of population for mass public transport needs are primarily on metro and/or local train and not on bus. The presence of these alternate preferred modes has also reduced the pressure on the Government to reform the bus transport sector. Moreover, in case of Delhi, the "intra-city" network partially spills over to the neighbouring states and inter-city always entail cross border travel. In case of Kolkata, the inter-city (within state) travel by bus is also considerably weak. As such, these three cities were not considered.
- Among the remaining cities, only South and West zone had multiple shortlisted cities. On checking with information available from (1) Ministry of Road Transport and Highways, (2) Jawaharlal Nehru National Urban Renewal Mission (JNNURM), (3) local public transport operators, (4) National Institute of Urban Affairs, and (5) data compendium of Government of India the following were observed:
- Southern region:
    - Karnataka had 25,114 km of surfaced highways (=National+State) relative to 15,393 in Tamil Nadu and 14880 in Andhra Pradesh. Additionally, Karnataka has 15,313 km of surfaced urban road compared to 14,804 in Tamil Nadu and 10,951 in Andhra Pradesh. Thus, infrastructure wise Karnataka is ahead of the others.
    - In terms of total number of buses registered in the city (which are not necessarily plying within the city), Chennai was at the top (37,205 buses), Bangalore second (28,261 buses) and Hyderabad was third (25,311 buses).
    - Bangalore has a larger intra-city (public) bus network compared to Chennai in terms of comparative fleet size and daily revenue of BMTC, Bangalore (Buses - 6587, Daily Revenue - Rs. 59 million) and MTC, Chennai (Buses - 3637, Daily Revenue - Rs. 28 million).
    - Bangalore/Karnataka has been more proactive in urban transport reform. Bangalore was the first to set up a city level Unified Metropolitan Transport Authority (under JNNURM / National Urban Transport Policy 2006 (NUTP) followed by Hyderabad. It was also the pioneer in setting up a city level Urban Transportation Fund (under JNNURM/NUTP) along with formulation of new parking and advertisement policy (as mandated under JNNURM/NUTP).
    - The design of rail network in Bangalore is not geared towards handing urban/regional traffic. Though work on Metro is going on, with part of the network already open, the distance covered is still very miniscule. As a result, Bangalore is more dependent on buses for mobility compared to Chennai/Hyderabad.
    - The recent economic expansion in Karnataka which has resulted in expansion of many urban centres across the length and breadth of the state, presence of 5 half a million plus population cities (within Karnataka), being in close proximity to a number of major cities of neighbouring states – all these factors have also contributed to a rapid expansion in the inter-city transport network too in Bangalore.
    - Thus, Bangalore could have been one of the potential sample location from Southern part of the country.
- Western region:
    - All the three cities (Ahmedabad, Surat and Rajasthan) have been seeing large scale reform in the intra-city bus transport sector, especially in the form of BRTS. The concerned two states have also been quite active in implementing various provisions of JNNURM programmes and NUTP 2006.
    - Ahmedabad is relatively larger in size compared to the other two (Surat & Jaipur).

- Ahmedabad has a larger fleet of buses (approx. 1100, combining BRTS and AMTC buses) compared to Surat (150)/Jaipur (400) for intra-city travel. The BRTS system of Ahmedabad is the most developed, and is also a pioneer in implementation of the bus rapid transport system in India.
- The Ahmedabad BRTS system pioneers a development model of intra-city modern bus transport in the Private-Public participation (PPP) mode, being emulated by others. The major reasons for the success of Ahmedabad BRTS has been attributed mainly to its good institutional structure (which maximize the quality of service and minimize the cost of service) and cost sharing using a PPP model. The project has been awarded by MoUD as the Best Mass Transit Project under JNNURM in the year 2008-2009. It was given 2010 Sustainable Transport Award for visionary achievements in sustainable transportation and urban livability.
- In terms of inter-city (within state) transport too, Ahmedabad compares well with Jaipur and being the capital city of Gujarat, is better than Surat.
- In terms of total number of buses (transport) registered in the city, Ahmedabad had 17,407 buses compared to 18,873 in Jaipur. But, a large number of buses in Jaipur are likely to be pressed into tourist services rather than regular passenger transport. Anyway, overall numbers are comparable. Surat, in comparison, had barely 1,641 buses registered in the city.
- Gujarat also had longer length of urban surfaced road (16,652 km) compared to Rajasthan (10,528 km). The same picture was also visible when comparing in terms of highways – Gujarat had 21,445 km of highways compared to 16,857 km in Rajasthan.
- Gujarat also scores in terms of more number of major and rapidly expanding centres of economic activity (for example, Ahmedabad, Surat, Vadodara, Jamnagar, etc.) fostering impetus for all year mobility/connectivity need.
- Considering the above point, Ahmedabad in Gujarat was identified as the prime choice from western part of India.

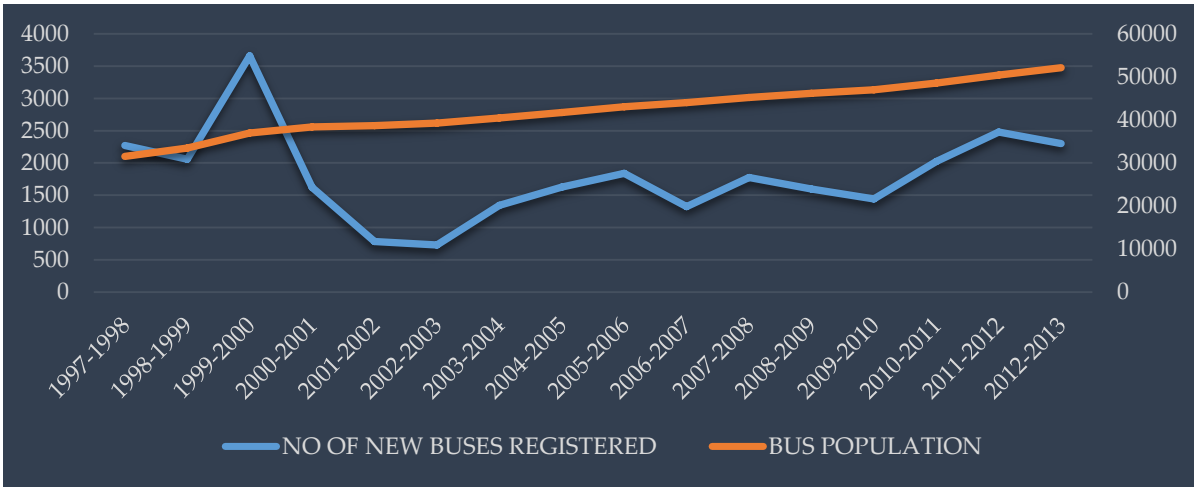
- The initial filtering process could identify one city each from the five zones. The next step was to shortlist 2 cities out of these 5. Based on comparison of the reforms undertaken regarding the bus passenger transport sector in these 5 cities/states brings out a sharp contrast between two of them, namely, Ahmedabad and Bhopal as given below.
  - With the abolishment of Madhya Pradesh State Road Transport Corporation (MPSRTC) in 2005, operational aspects of the intra city bus passenger transport in Bhopal are in the hands of private operators with role of Government limited largely to regulatory aspects. In contrast, intra-city transport in Ahmedabad is primarily catered by the public sector Ahmedabad Municipal Transportation Services (AMTS).
  - Even though both the cities have functional BRTS system under PPP mode, there are important differences in many characteristics like service model, outreach, revenue sharing model, etc. In both cities route determination, infrastructure development, time schedule, fare, etc. are with public authorities. Ahmedabad has a considerably larger network, though functioning with only one private operator for running the entire service as in case of Bhopal.
  - Additionally, the non-BRTS transport operators also show significant difference – whereas Bhopal incorporates services provided through mini buses, Tata Magic type of vehicles in its city transport plan, services in Ahmedabad by AMTS is on regular buses.
  - The inter-city transport scenario is also different across these two states in terms of legal issues. Whereas Madhya Pradesh allows private operators to operate as stage

carriage, in Gujarat public service provider GSRTC has a legal monopoly over stage carriage service. As such, all private operators in Gujarat in inter-city routes hold license of contract carriage, though for all practical purposes operating as stage carriage.

- This legal tangle has important implications – in MP the routes, time tables, fare in the inter-city routes are regulated by government, market forces are the only regulator of such factors in Gujarat considering the lack of legal recognition of inter-city operators as stage carriage.
- Thus whereas inter-city travel in MP is with private operators, the scenario is mixed in Gujarat. In some routes, public operators enjoy a dominant position, where as in some private operators hold the upper hand.

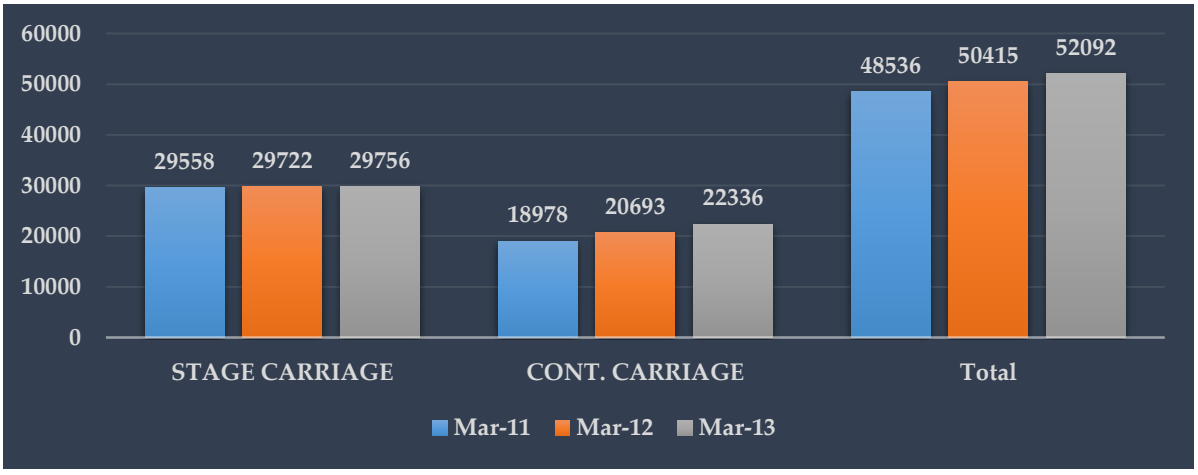
A4.2 Figures

Figure A0.1: Bus population and new registration in Gujarat



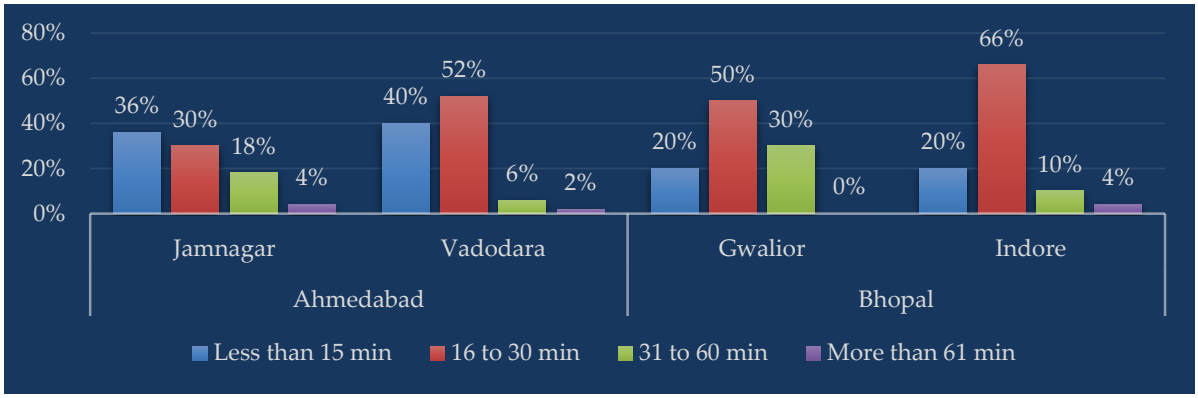
Source: Commissionerate of Transport, Government of Gujarat

Figure A0.2: Stage and contract carriage numbers in Gujarat



Source: Commissionerate of Transport, Government of Gujarat

Figure A0.3: Better frequency of inter-city services in Gujarat



A4.3 Tables

Table A0.2: AMTS performance in the recent period

	2008-09	2009-10	2010-11	2011-12	2012-13
PHYSICAL PERFORMANCE OF AMTS					
Avg. Age of Fleet (Years)	11.03	7.40	7.75	NA	NA
Avg. Fleet Held (Number)	953.00	966.00	942.00	985.00	985.00
Fuel Efficiency (Km/litre of HSD)	3.49	3.47	3.47	3.26	3.17
Passenger Carried (Billion)	0.31	0.30	0.29	0.29	0.24
Passenger Km.s Performed (Billion)	2.15	2.12	2.10	2.13	1.90
Staff Strength (Number)	5,727.00	5,592.00	5,274.00	4,715.00	5,739.00
FINANCIAL PERFORMANCE OF AMTS					
Total Revenue (Rs. Billion)	1.12	1.18	1.09	1.20	1.44
Total Cost (Rs. Billion)	1.84	1.46	2.48	2.61	3.16
Net Profit/Loss (Rs. Billion)	(0.72)	(0.28)	(1.39)	(1.1)	(1.72)

Source: Transport Research Wing, Ministry of Road Transport and Highways

Table A0.3: Financial performance of GSRTC

(All figures in Rs billion)		2002-03	2007-08	2012-13
Total Revenue		11.43	16.97	24.79
Total Cost		15.77	16.76	27.78
Profit/(Loss)		(4.33)	0.21	(2.99)
Cost constituents	Staff Costs	6.36	5.83	10.35
		40%	35%	37%
	Fuel & Lubricant Costs	4.15	6.38	9.67
		26%	38%	35%
	Tyres & Tubes	0.44	0.45	0.66
		3%	3%	2%
	Spares	0.26	0.32	0.30
		2%	2%	1%
	Interest	1.48	0.25	0.84
		9%	2%	3%
	Depreciation	0.91	0. 47	1.58
		6%	3%	6%
	Taxes	1.68	2.26	3.48
		11%	13%	13%
	Others	0.49	0.80	0.89
		3%	5%	3%

Source: Transport Research Wing, Ministry of Road Transport and Highways

Table A0.4: Physical performance of MPSRTC in the eve of closure

Physical performance 2002-03		**Financial performance 2002-03 (in Rs Billion)**	
Avg. Fleet Held (Number)	2,146	**Total Revenue**	2.24
Avg. Fleet Operated (Number)	1,760	**Total Cost**	3.23
Revenue Earning Km.s (Billion)	1.72	**Staff Costs**	0.65
Staff Strength (Number)	11,204	**Fuel & Lubricant Costs**	0.93
Fuel Efficiency (Km/litre of HSD)	4.1	**Tyres & Tubes**	0.09
Passenger Km.s Offered (Billion)	83.23	**Spares**	0.23
Passenger Km.s Performed (Billion)	50.80	**Interest**	0.15
Passenger Carried (Billion)	0.07	**Depreciation**	0.06
No. of Accidents	232	**Taxes**	0.36
No. of Fatal Accidents	69	**Others**	0.76

Source: Transport Research Wing, Ministry of Road Transport and Highways

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