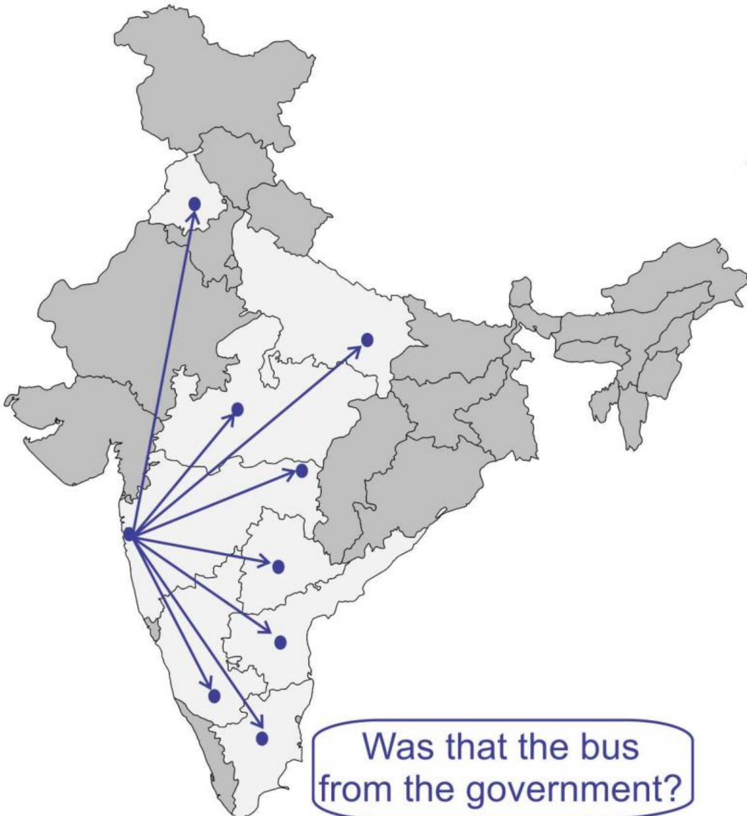
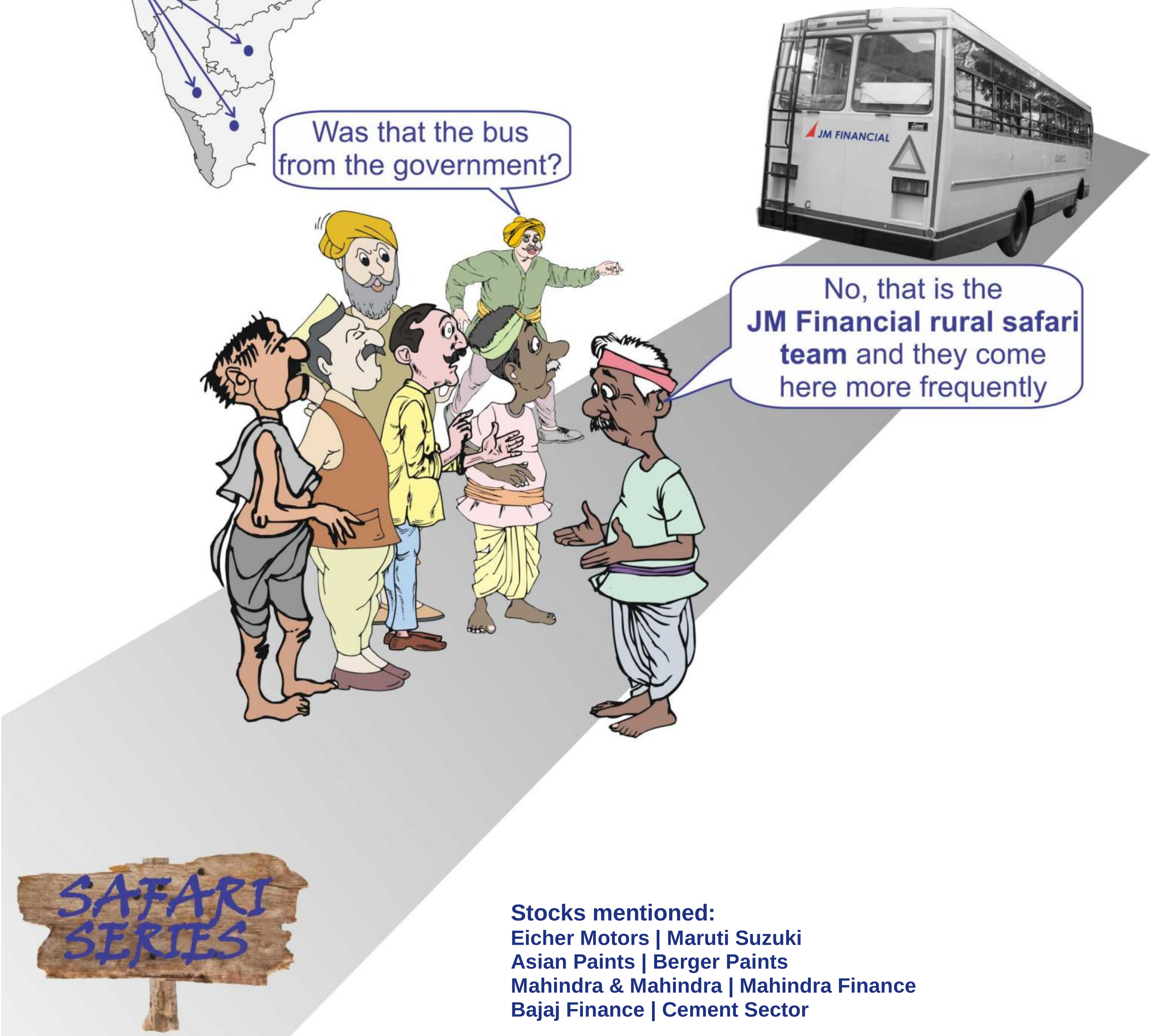


Rural Safari – II

Our second journey took us through the "Green Revolution" belt of Punjab to the temple town Varanasi and to Andhra Pradesh's new capital Amaravati to gauge the rural pulse. Our analysts covered 14 districts in 8 states that account for 54% of India's agri GDP. We present key findings from rural economy in the report.



Stocks mentioned:

Eicher Motors | Maruti Suzuki
Asian Paints | Berger Paints
Mahindra & Mahindra | Mahindra Finance
Bajaj Finance | Cement Sector

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India Strategy

Rural India and the unintended consequences

Our first rural survey, conducted in 1QCY15, identified an emerging thread of falling rural incomes and diminishing wealth effect impinging on consumption in rural India. Since then, consumption metrics we track has declined further. To gauge if the thread has developed into a full blown trend, we travelled to states that account for 50%+ of India's agriculture GDP to meet small and large farmers, business owners, and traders in rural India. The visit highlighted that a) farm incomes (c.36% of rural income) and sentiment has continued to decline due to the third consecutive crop failure, weak outlook on the next crop, lower MSP hikes, and global commodity price rout, (b) non-farm income (2/3rds of rural income) has been, at best flat, given that utilization of man and machine are down though wages and rentals have held up. Even as we await a further increase in government led capex, and the 7th pay commission, we continue to expect rural demand to remain subdued and that from a portfolio perspective, we recommend to be underweight plain vanilla rural stocks and stick to stocks which have "rural/semi-urban optionality" even as near-term stock performance is driven by other factors.

- **Farm income declines while non-farm income remains lackluster:** Farm income has been under pressure due to a) monsoon deficits (12%-CY14 and 14%-CY15), b) unseasonal rains, c) pests, d) lower MSP growth and e) decline in global agri commodities. On the other hand, a) declining tractor utilization, b) low manpower utilization, c) lower spending by agri ministry (-22%YoY, FYTD) and rural development (7%YoY) have been a drag on the non-farm incomes while rise in infra spending (49%YoY) and resumption of sand mining have been supportive with the overall non-farm incomes being stagnant. Combined, we expect the overall rural income will continue to decline.

- **Rural consumption on the wane:** With wage growth spiraling down, small farmers income (60% from wages) has been on a downward trajectory while low crop realization has led to a decline in income of large famers (cultivation 70%+ of income), all leading to weakness in consumption. We observed that rural consumption has been weak across auto, durables and FMCG with pronounced slowdown in tractor volumes (-20%YoY in 1HFY16) and two wheelers (Avg.0.1%YoY-4Qtrs). Even large rural FMCG players such as HUL have reported weak volume growth (Avg.5.5%YoY) and pricing pressure.

- **More govt intervention needed to boost rural economy:** The govt has announced higher MSP's (wheat: 5.5%YoY, pulses:~10%YoY). Besides, a) Increased uptake by FCI, b) disintermediation and c) thrust on ware house development are much needed measures. The central govt may have to step up allocation for rural infrastructure spending (PMGSY) to boost employment opportunities. The 7th pay commission and Direct Benefits Transfer (DBT) may also have a positive trickledown effect on incomes. State govts have to focus on a) crop insurance (MP model), b) irrigation and c) power availability.

- **Other findings:** Farm mechanization such as laser leveling of fields (Punjab), mechanized milking (Kar.) are picking pace. Solar powered irrigation systems and electrification are being implemented in some parts. In almost all places we visited, DBT for LPG is prevalent.

- **How to be positioned?** There is huge aspiration to own a "bullet" in rural India which amply supports our thesis on Eicher (Capacity/distribution expansion, product line-up). We continue to like Maruti (competitive positioning, product launches), Bajaj Finance (**high urban exposure,** strong AUM growth, increasing market share**).** Amongst pure play rural stocks, while we like the long term thesis and valuations on Mahindra Finance, growth is likely to be subdued in the medium term.

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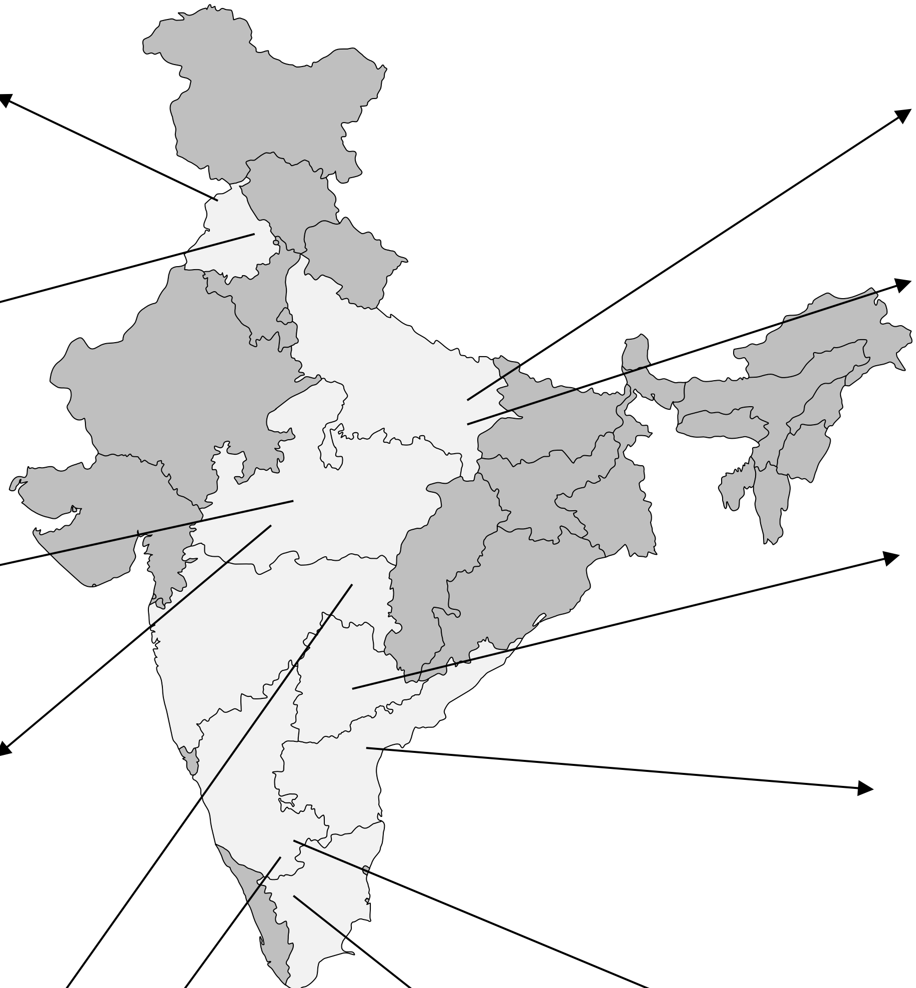
Exhibit 1: JM Analysts covered 8 states, which account for 54% of agriculture GDP

Source: JM Financial

Exhibit 2. Eight states, 14 districts, 2,200+ Kilometers



Amritsar

Amritsar, located at India-Pakistan border is a major religious, commercial centre. Sikhism holiest shrine, Golden Temple is located in the city making tourism as one of the largest industry here. Wheat, Rice, Maize, Potato are key crops

Hoshiarpur

Hoshiarpur is located at the foot-hills of Shivalik range and is on the borders of Himachal Pradesh. It has rural population of 79%, is relativley less irrigated district of Punjab. Wheat, Rice, Maize, Oil-seeds are grown here

Dewas

Dewas district came in the limelight for its irrigation facilities, has population density of 223/sq km, lowest in our Rural Safari. Key crops in the region include Soyabean, Gram, Wheat, Cotton, Maize, Jowar

Indore

The largest city in Madhya Pradesh, Indore is known as the financial capital of the State. Key crops in the region include Soyabean, Wheat, Potato, Maize, Gram

Nagpur/Wardha

Nagpur is a major commercial and political center of the Vidarbha region in Maharashtra. The main crop of the district are Soyabean, Cotton, Rice, Jowar, Ground-nut, Wheat, Gram. In last decade, improving infrastructure and urbanization has supported rural prosperity in the region

Bangalore

Bangalore, the capital of Karnataka, has benefited signficantly from the IT boom. Ccity has expanded geographically leading to reduction in farming land and resulting increase in prices. Key crops have shifted according to urban consumption to- Ragi, vegetables, fruits, maize, poultry etc.

Varanasi

Largest trading hub for agri-commodities in the eastern Uttar Pradesh and a famous religious tourist destination. Wheat, Paddy, Bajra, Arhar, Sugarcane and Potato are key crops in the region

Chandauli

Chandaluli houses the busiest railway junction, Mugalsarai in the region. Key crops in the region are Paddy, Arhar, Gram, Bajra, Barley, Chillies, and Wheat.

Nalgonda

Nalgonda is situated around 100kms from Hyderabad. The district has a rural population of 81% ,with key crops such as paddy, cotton, Green-gram, Castor, Orange etc.

Guntur

Guntur is one of Andhra Pradesh's largest towns. Being highly irrigated region (as river Krishna flows through this region) most of the villages around this region produce 3 crops in a year including Paddy, Jowar, Maize, Chillies, groundnut and tobacco

Tumkur/Chikaballapura

Tumkur is known for the production of Ragi, Maize, Rice, Ground-nut, fruits and vegetables are key crops in the region. Improvement in irrigation, better road connectivity and improving non-agri income has supported rural prosperity in last decade

Coimbatore

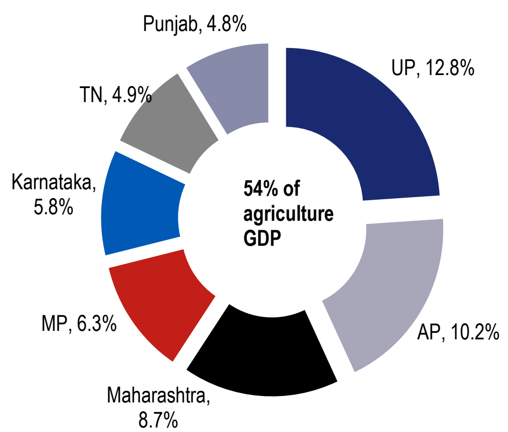
Coimbatore is the second largest city in Tamil Nadu, after Chennai.The district has rural population of 24% and key crops are Paddy, Jowar, Maize, Gram, Sugracane, Chillies,Coconut

Source: Company, JM Financial

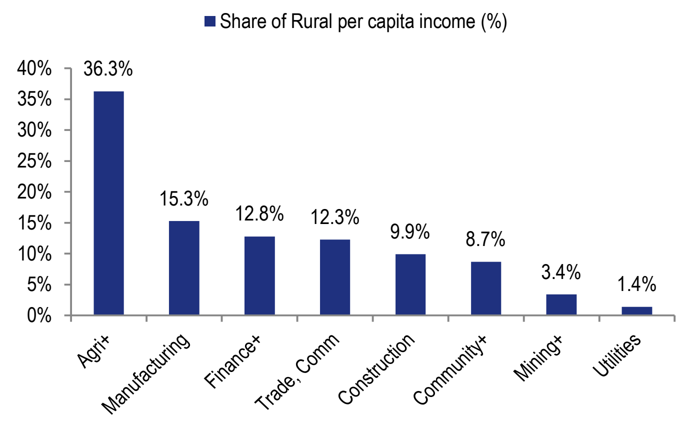
Focus charts…

Exhibit 3. We travelled across 8 states in India to understand current rural economy and outlook

States we travelled account for 54% of agri GDP

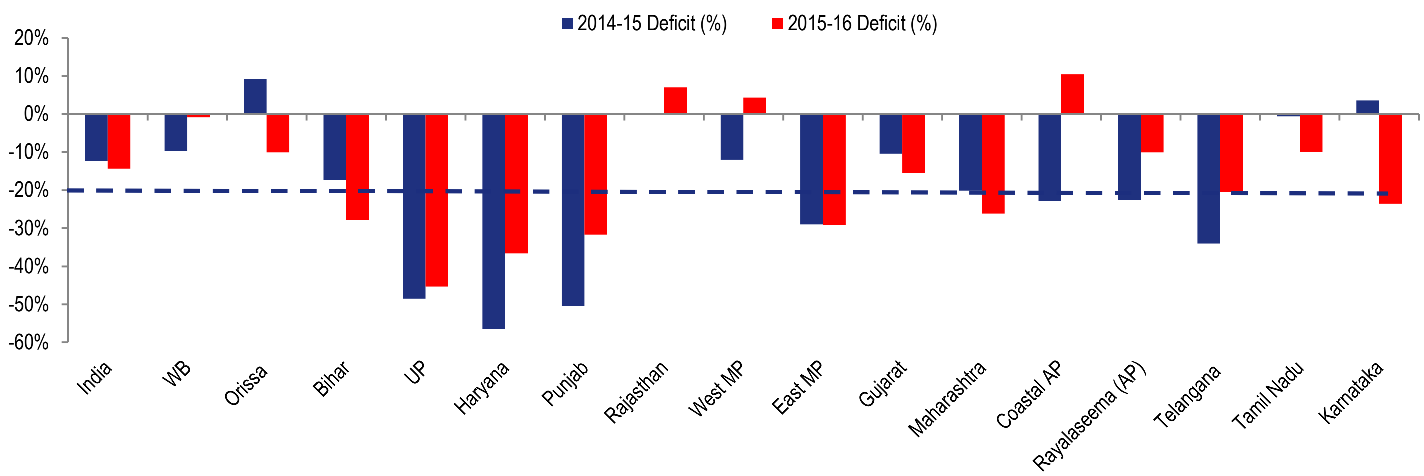


Agriculture contributes 36% of rural income and drives overall sentiments in rural India



Source: Rural Safari, CMIE

Exhibit 4. Two consecutive years of deficit monsoon (12% and 14%) has impacted agriculture produce adversely; Many regions have suffered more than 20%+ deficit in the last two years



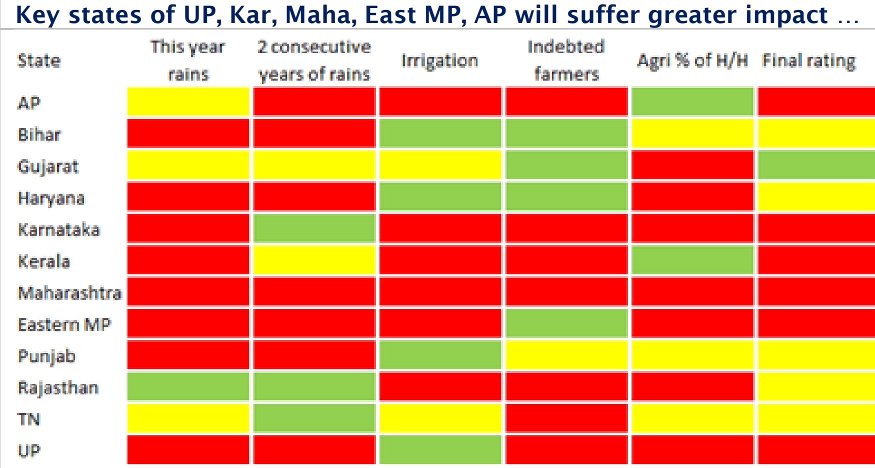
Source: CMIE

Exhibit 5. Our interactions indicated impact of deficient and unseasonal rains across states – with local variations due to differences in irrigation facility and climatic conditions

Weakness in agriculture across states

State	Observations
Punjab	Cotton yield down 50%+ due to pests, Price of Rice (basmati) almost halved, Yield stable due to irrigation facility
MP	Soyabean crop volumes down 30-50% YoY, Yield down across crops
UP	Yield down across crops
Maharashtra	Vidarbha region (Nagpur) has stable yield, interior Maharashtra impacted
Karnataka	Yields impacted by deficient rains, electricity shortages
AP/Tele	Yield down across crops barring cotton
TN	Not much impact on yield

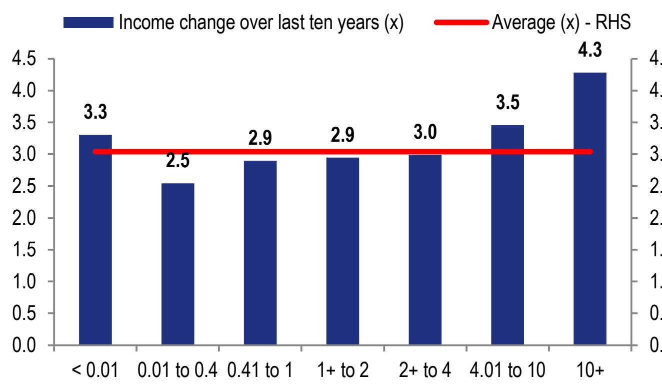
Key states of UP, Kar, Maha, East MP, AP will suffer greater impact …



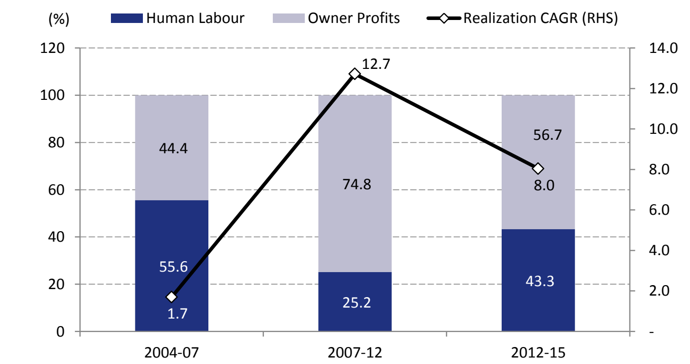
Source: Rural Safari, JM Financial, Legend for the above heat map Red - Poor, Green- Good

Exhibit 6. Income levels improved for both large and small farmers- Large farmers benefited from near double digit MSP growth that has now softened while small farmers benefitted from sticky wage growth

Large farmers[1] income has grown much faster than small farmers over last ten years



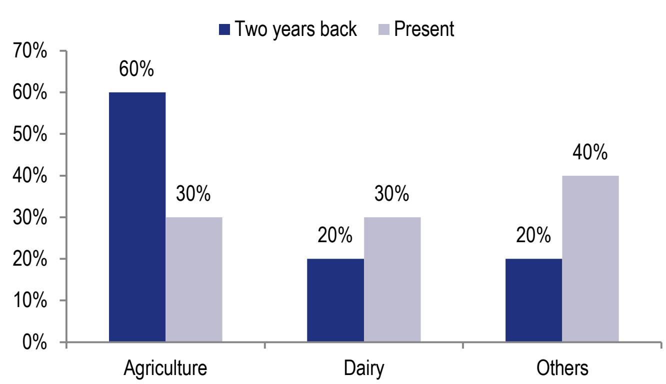
MSP increase led to higher share of profits[2] to large farmers in 2007-12 while sticky wages and weak MSP growth lead to higher share to labour in 2012-15



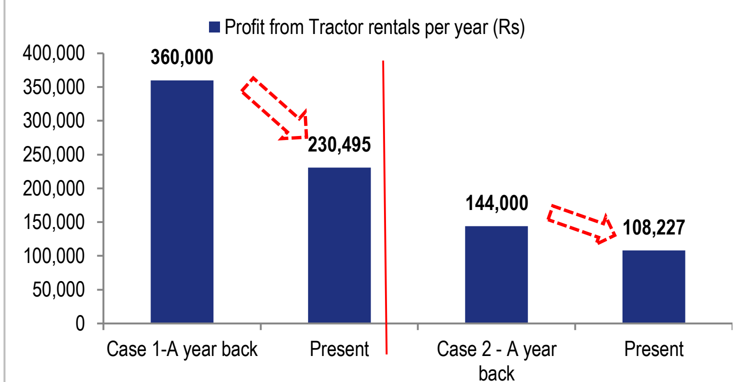
Source: NSSO, JM Financial, Note – 1. Farmers categorized based on land-holding (hectares) 2. Representative profit share for paddy

Exhibit 7. Shift in income sources in rural India – Increasing diversification to non-agri income (64% of total)

As an example, shift of Income sources for a large farmer (10+ acres) in Karnataka



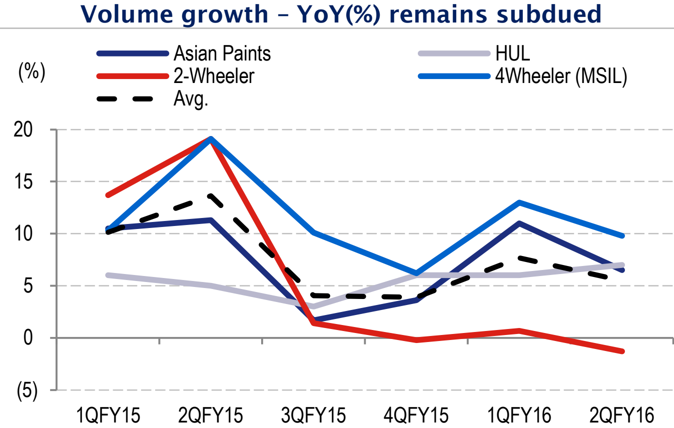
Non-farming income also mixed: Tractor rentals stable, but utilization was seen down across states, overall income down by c.30%



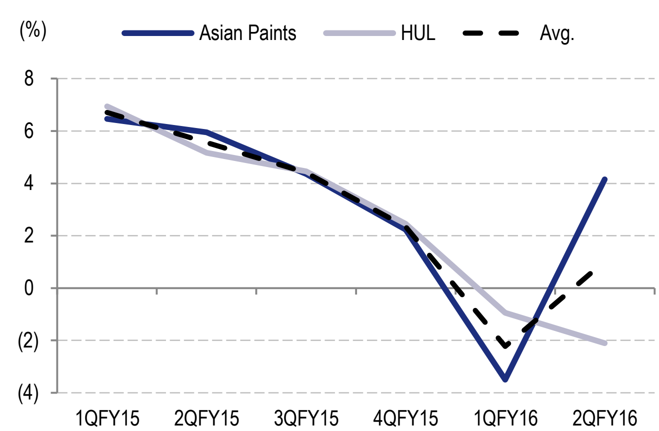
Source: Rural Safari, Note: Tractor Rental Case 1: Rental of Rs700/hour, 90 days/year with 5 hours/day, Case 2: Rental of Rs400/hour, 102 days/year with 5 hours/day (Box 11)

Exhibit 8. Our interactions indicated rural consumers deferring large purchases, is corroborated by volume growth and pricing trend across consumer companies

Volume growth – YoY(%) remains subdued



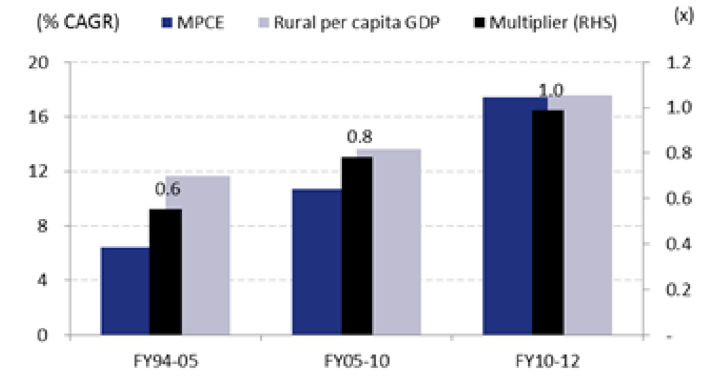
Pricing -YoY (%) remains under pressure



Source: Company, Note: Pricing for 2wheeler: observed 4-8% discounts + benefits on different models, 4wheeler: observed 5-10% depending on models excluding new launches

Exhibit 9. Wealth effect which increased propensity to consume has moderated over the last one year

Elasticity of rural consumption to rural GDP – had increased to 1.0x aided by wealth effect, is on wane



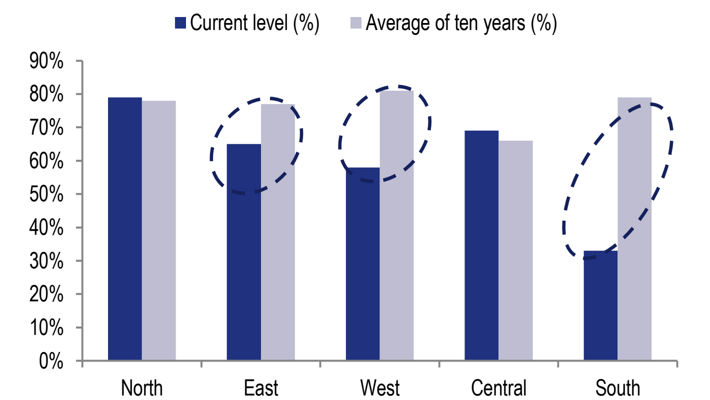
Land prices have remained largely stable with transactions declining substantially

Region	Comment on land prices (rural)
Punjab	Decline by 20-30% over last 2 years
AP/Telangana	Prices up slightly because of development after state bifurcation
Rest of states visited	Prices stable, hardly any transactions, pressure on downside

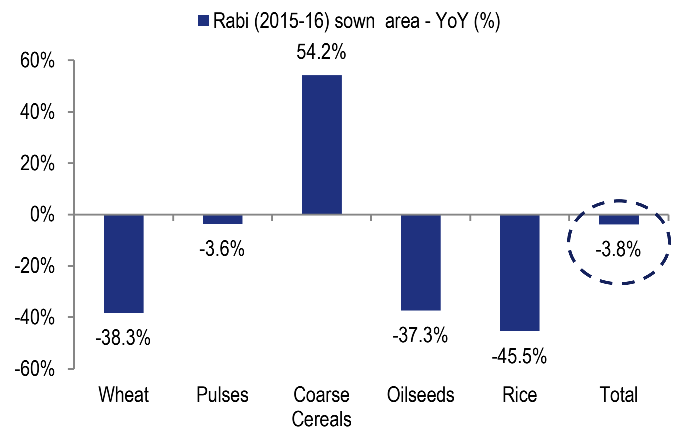
Source: NSSO, Rural Safari

Exhibit 10. What is the outlook for next cropping season Rabi (Mar/Apr 2016) – Indicators point to a weak start

Reservoir levels are below normal, also below last year levels at major parts of country



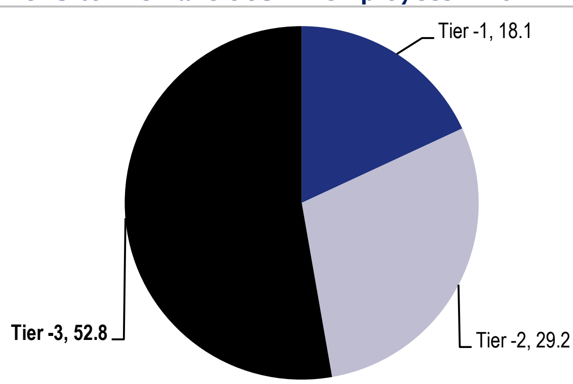
As of Nov 1st week, net sown area was lower by 3.8% YoY



Source: CMIE

Exhibit 11. What can aid consumption revival – 7th Pay commission led increments, step up in rural infrastructure projects etc.

Expect implementation in 2016 for 7th pay commission, - Tier 3 towns have c.53mn employees who will benefit



Government measures to increase investments and relief measures to aid rural economy

What steps have been taken

Rabi Crop MSP (2015-16)	Wheat MSP up by 5.2% YoY, Pulses by 10%, Barley by 6.5%. MSP increase on an average higher than past 2 years' growth rate, though below growth rates seen in FY05-13
Procurement	Procurement of pulses to be managed by FCI, rather than state bodies.
State Government's relief measures	MP, Punjab, Karnataka, Odisha State Governments have announced relief measures for farmers, to compensate for crop losses. Expect more initiatives by Government

Source: NSSO

Exhibit 12. Key drivers of rural income – A snapshot

	Punjab		UP		Madhya Pradesh		Maharashtra		Karnataka			Andhra/Telangana & Tamil Nadu		
	Amritsar	Hoshiar-pur	Varanasi	Chandauli	Dewas	Indore	Wardha	Nagpur	Tumkur	Bangalore	Chikkaballapura	Guntur	Nalgonda	Coimbatore
Agri-income														
Main crops	Wheat, Paddy, Maize, Potato	Wheat, Paddy, Maize, Oil-seeds	Wheat, Paddy, Bajra, Arhar (pulse), Sugarcane, Fruits, Vegetables	Paddy, Wheat, Lentil, Bajra, Arhar (pulse)	Soyabean, Gram, Wheat,Cotton, Maize, Jowar	Soyabean,Wheat, Potato, Maize, Gram	Soyabean, Cotton, Arhar (pulse), Wheat, Chickenpea, sugracane	Soyabean,Cotton, Paddy, Jowar, Groundnut, Wheat, Gram	Ragi, Maize, Paddy, Red-gram, Groundnut Supari, Banana	Ragi, Maize, Vegetables, Fruits	Ragi, Groundnut, Maize, Redgram, Vegetables, Paddy	Paddy, Cotton, Maize, Banana, Chilly	Paddy, Cotton, Green-gram, Castor, Redgram, Orange	Paddy, Jowar, Maize, Gram, Sugracane, Chillies,Coconut
Move towards cash crops	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Yield over last year	⇔	↓	↓	↓	↓	↓	⇔	⇔	↓	⇔	↓	↓	↓	↓
Price over last year	↓	↓	⇔	⇔	↓	↓	↑	⇔	↓	↓	↓	↓	↓	↓
Agriculture financing awareness and usage	⇔	⇔	⇔	⇔	↑	↑	⇔	⇔	⇔	↑	⇔	↑	⇔	⇔
Non-agri Income														
Dairy prices/volume	↑	⇔	⇔	⇔	⇔	⇔	⇔	⇔	↓	⇔	↓	⇔	⇔	⇔
Tractor/Pick-ups	⇔	⇔	↓	↓	↓	↓	⇔	⇔	↓	↓	↓	↓	↓	↓
Remittances	⇔	⇔	⇔	⇔	↑	↑	↑	↑	⇔	↑	⇔	↑	⇔	↑
Local jobs	↓	↓	⇔	⇔	⇔	⇔	↑	↑	⇔	↑	⇔	↑	⇔	⇔
Wealth effect of land														
Urbanization	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Road connectivity	⇔	⇔	↑	⇔	↑	↑	↑	↑	⇔	⇔	⇔	↑	⇔	⇔
Price trend	↓	↓	⇔	⇔	⇔	⇔	⇔	⇔	⇔	↑	⇔	↑	⇔	⇔
Farmers monetizing?	⇔	⇔	⇔	⇔	⇔	⇔	⇔	⇔	⇔	⇔	⇔	↑	⇔	⇔
Buying land in hinterland?	⇔	⇔	⇔	⇔	⇔	⇔	⇔	⇔	⇔	⇔	⇔	↑	⇔	⇔
Political satisfaction														
Satisfaction with state Government	↓	↓	↓	↓	↑	↑	↑	↑	⇔	↓	⇔	↑	⇔	⇔
Satisfaction with Central Government	↓	↓	⇔	⇔	⇔	⇔	↑	⇔	⇔	⇔	⇔	⇔	⇔	⇔

Source: JM Financial, **Note: ↑: Improving, ⇔: Flat, ↓: Declining**

Rural Safari – Re-visited

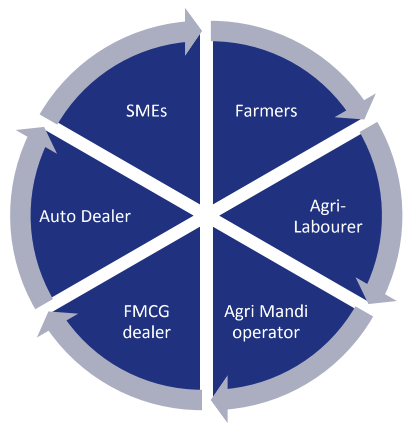
8 States, 14 districts and 2,200+ Kilometers

We left our desks to travel across 8 states which account for 54% of agriculture GDP of the country. After our last trip in Feb'15, our coverage this time included Punjab in North and Tamil Nadu in South India. Our analysts travelled more than 2,200+ kms across eight states to get a pulse of rural activity, rural income, spending drivers and short term & medium term outlook. We met farmers, visited mandis, met auto dealers/FMCG dealers, interacted with small business owners, local politicians etc. We travelled to holy cities of Amritsar and Varanasi, to areas undergoing new development near the new capital (Amravati) of Andhra Pradesh.

Exhibit 13. Coverage across the country – States covered account for 54% of agriculture GDP of India

Eight states of India from North to Southern part

Who we met during our trips?



Source: Rural Safari

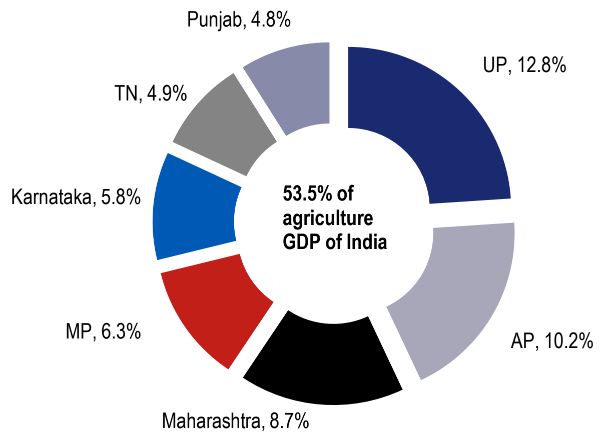
Exhibit 14. Our journey led us to diverse places across the country

We visited farms near the Indo-Pakistan border, to regions where "Green Revolution" started in India

We reached Southern parts of India to get a different flavor

Source: Rural Safari

Exhibit 15. States visited during Rural Safari-II contribute 54% to agriculture GDP of the country

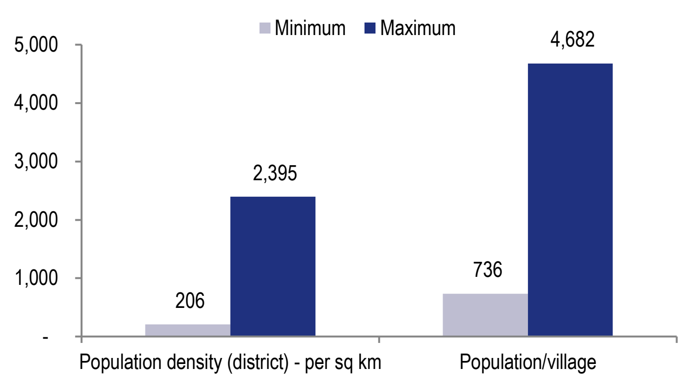


Source: Rural Safari, Agriculture Statistics, Note: AP includes Telangana

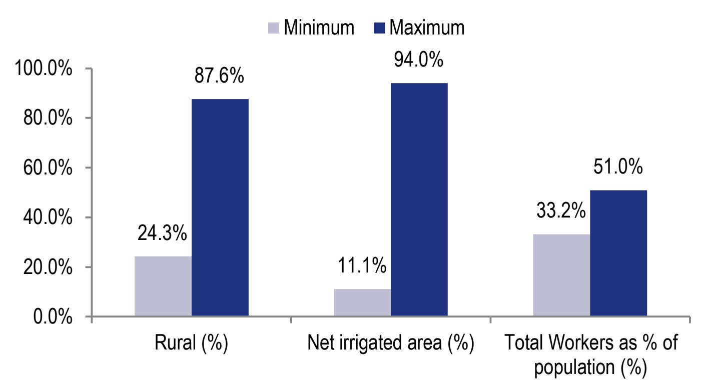
India a land of diversity continued to be highlighted in our trip

Exhibit 16. Select highlights of the visited districts during Rural Safari - II

Village size vary widely across the country



Wide variance in India in urbanization, irrigation and also in people's occupation in rural India



Source: Census of India (2011), Note: Workers include

Diversity of India continued to be highlighted in our trips. We saw high mechanization in Punjab to highly manual labor oriented farming in UP. We witnessed how state policies have impacted agricultural economy, and thereby income levels. Our visit included Varanasi district with population density of 2,395/sq km to Wardha which had population of only 206/sq km. Chandauli district in UP has 88% rural population, while Coimbatore in Tamil Nadu has rural population of only 24%, giving us much more urban flavor.

In terms of average village size, we saw differences across the country with average population of 736/village at Chikkaballapura in Karnataka to large villages with average population of 4,682 in Guntur, AP. We have highlighted key observations from our trip in above exhibit. .

Rural income – Steady diversification

Rural India, with population share of 68.7% (2011 census), has high dependence on agriculture. Share of agriculture and allied sector in the rural GDP has gone down to 36% at present from 49% in FY00, but agriculture still remains the single largest contributor sector to rural GDP and continues to drive consumer sentiments in rural households.

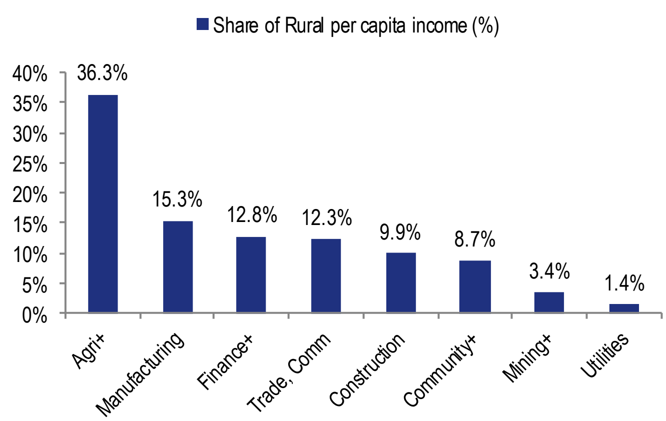
Rural income is getting increasingly diversified through non-farm business and wages

We have highlighted and delved in great detail about rural income and how its composition has changed over the years in our Rural Safari-1 Report.

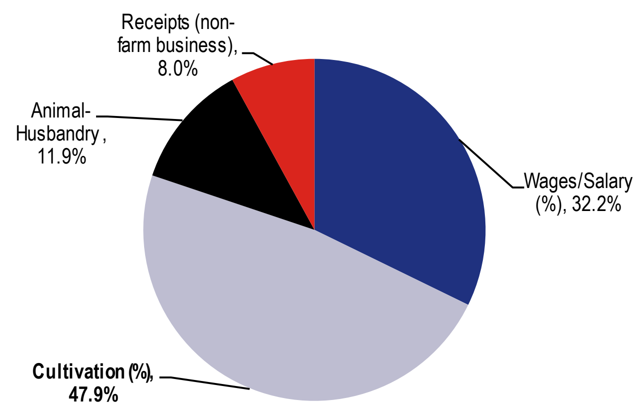
As per NSSO survey (round 70), c.58% of rural households are considered agricultural **households** (where at least one person in the family is working in agriculture sector). In the agri **households**, on an average, cultivation income now forms only 48% of total household income. There is a wide variance however, and small and marginal farmers have much higher non-agriculture income (Wages, labor, small jobs etc.), while mid and large farmers have more share of income from agriculture. We analyze key trends in farming and non-farming income in the sections ahead.

Exhibit 17. Income share of rural India (%)

Sources of Rural per capita income – FY15 Agriculture share of 36%



Share of income from various sources in an agricultural household (%)



Source: NSSO, Interactions across rural safari

We also continued to witness trend of diversification of farmers to cash crops and dairy/poultry. As road-connectivity improves across the country, farmers have benefited from better access of their products to far off towns and cities, and this has helped in diversification.

The steady growth in land prices over the past decade (prices up by 5-10x) has likely stalled. Land price increase created wealth-effect, which in turn led to increased propensity to consume. **Now, with stagnant land prices, wealth-effect also would not be a growth driver for spending going forward in rural India.**

Agricultural income – Weakness in near term

We continued to see medium term trend of farmers' diversification away from agriculture. Agri-income is c.36% of rural house-hold income at present, but is a key driver of rural spending and sentiment.

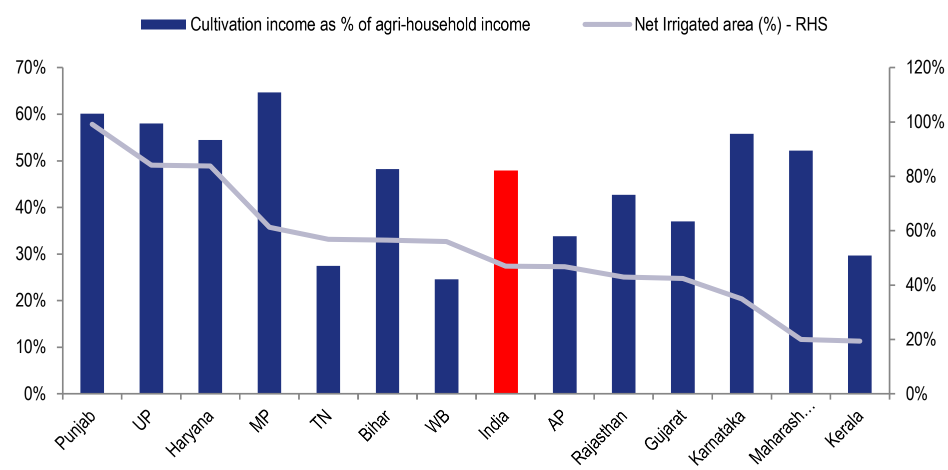
For the near term however, we saw the impact from a deficient monsoon (Jul-Sep 2015, 14% lower than normal), essentially leading to 3rd crop failure/decline in production in many parts of the country. The three crop failures have been - (a) 2014-15 kharif, (b) 2014-15 Rabi, and now (c) 2015-16 Kharif. Three continuous crop failures have drained farmers' savings and lower rains in CY2015 also puts at risk the upcoming rabi crop (Mar/Apr 2016). We therefore, expect softness in rural demand to continue driven by lower agriculture income and therefore discretionary spending would be deferred. The extent of adverse impact varies on agri income, with higher impact in states which have higher rain deficits, have higher income from cultivation, and are low in irrigation (Exhibit 27).

Indian agriculture still heavily reliant on rainfall (monsoon)

Dependence of seasonal monsoon rains for cultivation is still high due to lower availability of irrigation facilities

Indian agriculture is still heavily reliant on rainfalls, as only 48% of the farm area is irrigated. Even among states, there is wide variation (both on account of investments and also due to geographical factors), with Punjab at 99%, UP (particularly Western UP) and Haryana at 80%+ of areas under irrigation. In contrast, some states such as Maharashtra have only 20% of cropped area under irrigation. In terms of rainfall, majority of rainfall happens during few months (June-October) across India, which is also termed as South West Monsoon or "Monsoon".

Exhibit 18. States with high cultivation income and less irrigated area – Farming more vulnerable to rainfall changes

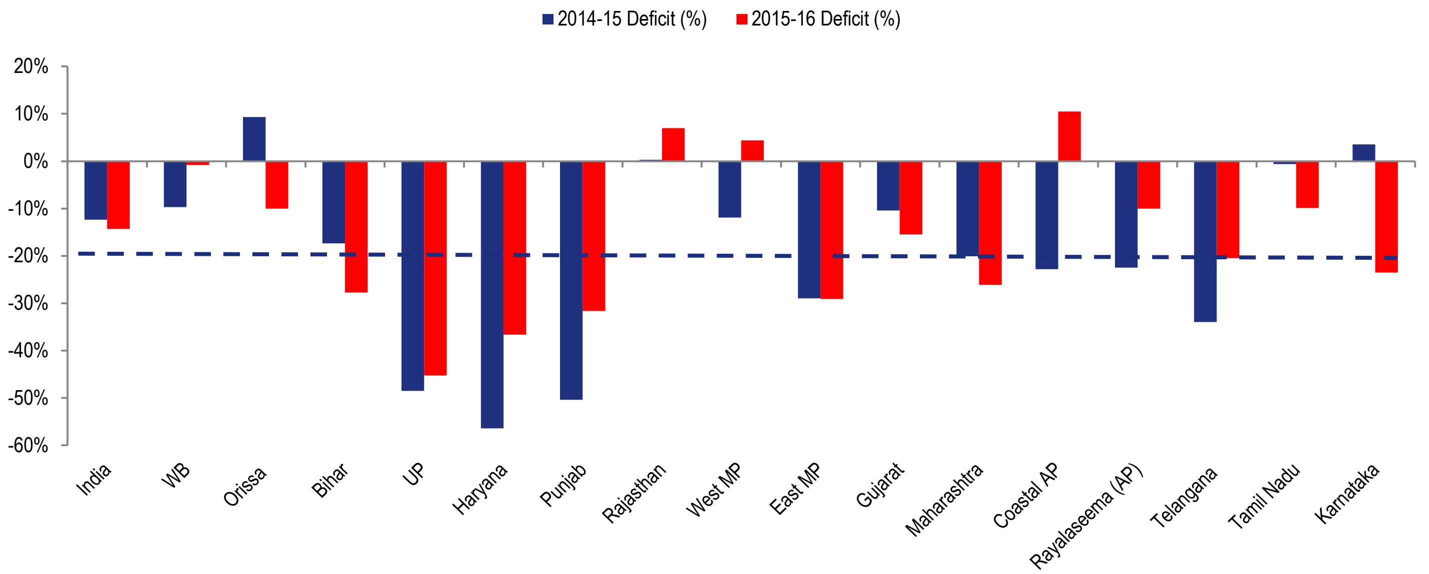


Source: NSSO

Distribution of monsoon also varies widely every year leading to more stress in certain areas

Besides the quantum, **(a)** spread of rainfall during monsoon season, and, **(b)** any un-seasonal rain also impacts the yield of crops. India has now witnessed two years of consecutive rainfall deficit in the monsoon period (from long term averages) - 12% in CY2014 and now 14% in CY2015.

Exhibit 19. Monsoon rainfall trend across regions – Two consecutive years of 10%+ deficits – Some regions saw rainfall deficit of even c.30%+ (UP, Haryana, Punjab, East MP)



Source: CMIE

Box 1: Deficient monsoon and lack of irrigation facilities impact smaller farmers adversely

The importance of adequate irrigation continued to be highlighted to us in our trip. Farmers with access to bore-wells in Telangana, for example, were able to properly irrigate their kharif crop, while we witnessed small, un-irrigated farms with lower crop yields. The scene was similar across regions – UP and MP to Karnataka.

Exhibit 20. Irrigation facility – A major driver for agriculture yield across the country

A well-irrigated farm in Telangana; impact from deficient rainfall minimized

A half-grown paddy crop in UP, lack of irrigation facility led to crop failure

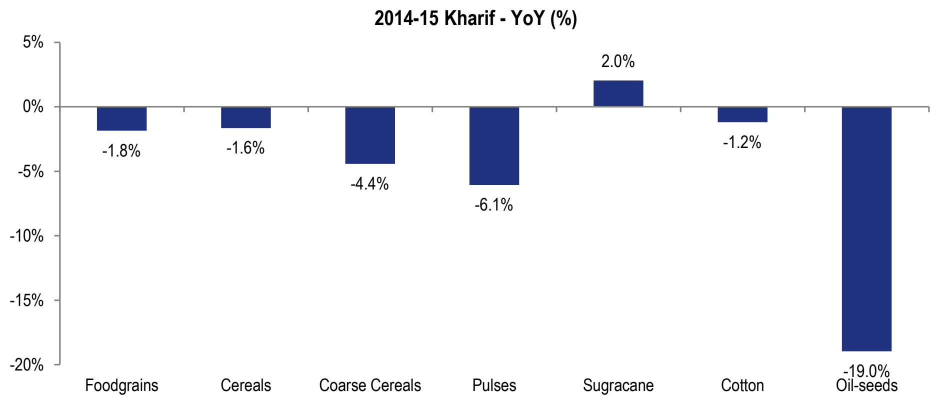
We met a farmer in Varanasi who has around 1 acre of land. He grows rice and pulse during kharif and wheat during Rabi season. Since he is a marginal farmer, he cultivates primarily for personal consumption and not for external sales. As monsoon was deficient during last two years, large farmers could tide over with **mechanized water pumping systems**, while small farmers got affected. In a good year, he expects c.14-15 quintals (1 quintal = 100kg) per acre of rice. Since this year's monsoon has been deficient, he expects only c.8 quintals per acre. Water tables have also been declining over the years.

Uncharacteristic rains have led to continuous crop failures.

(i) Agriculture production declined during 2014-15 Kharif season due to 12% deficient rains -(1st crop failure)

Uncharacteristic rains have led to 3 continuous crop failures putting pressure on productivity

Exhibit 21. Decline in production (MT) during 2014-15 Kharif season

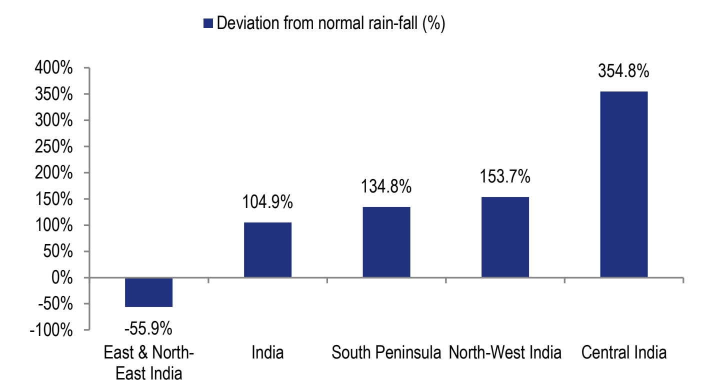


Source: CMIE

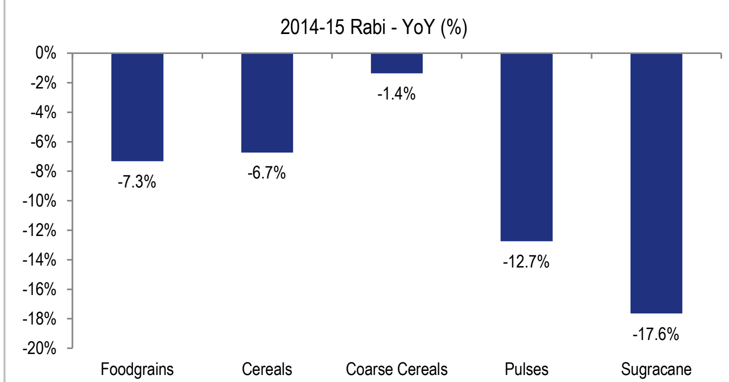
(ii) In Mar-Apr 2015, there was excess rain than normal, which impacted the Rabi crop harvest (April/May 2015) (2nd crop failure)

Exhibit 22. Unseasonal rain in Mar/April 2015 impacted crops adversely, impact varied across geographies

Unseasonal rains, played spoil-sport with CY2015 Rabi crop



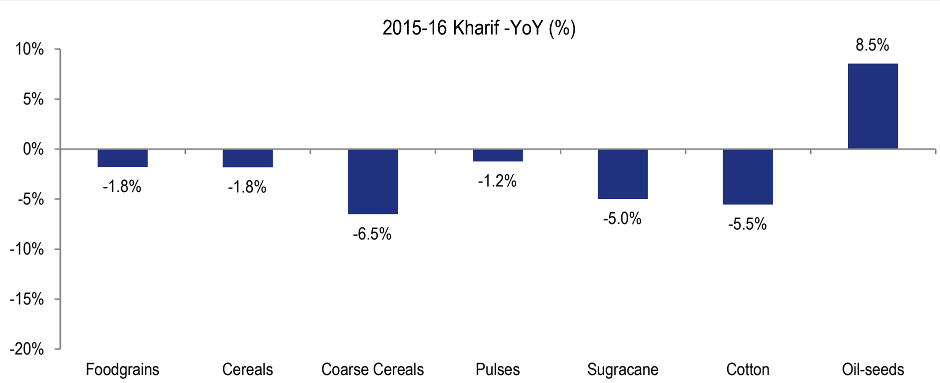
Rabi crop production (MT) declined due to unseasonal rains



Source: CMIE

(iii) Post decline in agricultural output during last 2 cropping season, current Kharif (Oct/Nov 2015) <u>production is also estimated to decline (3rd crop failure)</u>

Exhibit 23. Kharif Production (MT) estimated to decline in current year



Source: CMIE, Note: 1st Advanced estimate

During our trip we saw decline in production during the current kharif harvest season at multiple places; decline varied with amount of rainfall deficit, crop and irrigation facilities. We have highlighted the impacted states based on multiple criteria in exhibit -27.

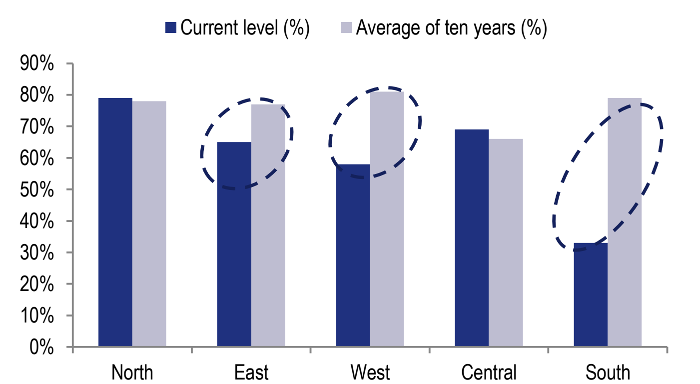
(iv) Due to lower rainfalls in CY2015 monsoon, even the reservoir levels are below normal, and can potentially adversely impact CY2016 Rabi crop (Apr/May 2016)

One worrying trend is the reservoir levels at present, which have been impacted by lower rainfalls during CY2015 monsoons. Reservoir levels are below normal levels, particularly in South, West and even some parts of East India. **Lower water-level can impact next cropping season (Rabi in CY2016) and thereby, even 4th crop output can be in danger of decline. If that scenario plays out, it would add to the stress on the rural ecosystem, which has already been impacted by three consecutive crop failures.**

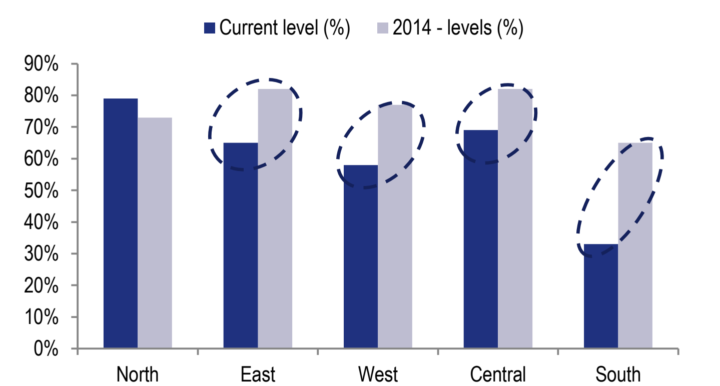
Weak rains during the 2015 monsoon have resulted in low water levels in major reservoirs. This could impact upcoming rabi season negatively.

Exhibit 24. Lower reservoir levels (as on Oct 29, 2015) indicate weakness for the next cropping season

Apart from North and Central regions, water-levels are below normal levels

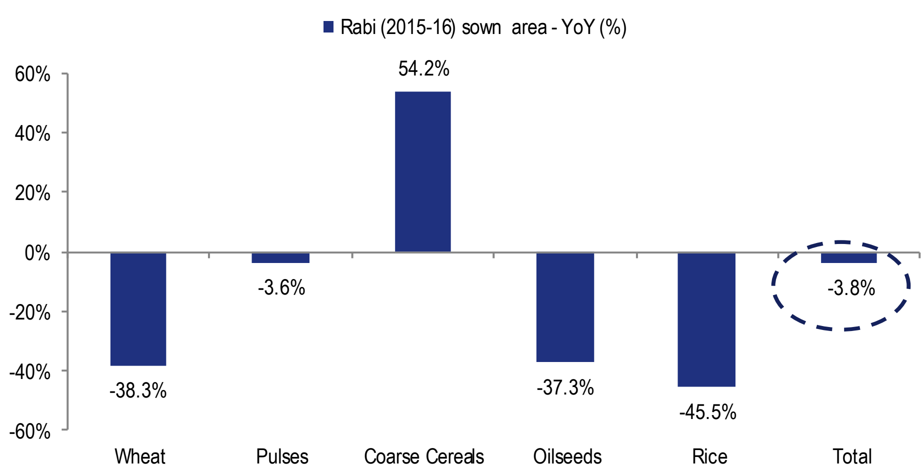


Even compared to last year, storage levels are YoY lower in major parts of the country



Source: CMIE, PIB, Note: Storage levels as on Oct 29, 2015

Exhibit 25. Rabi sown area trend – Its early at present; still lower sowing area for the next Rabi season (2016) indicates weakness



Source: CMIE, PIB, As on Oct 29, 2015

Other reasons of crop failures also driving down "yield" and quality of produce – Cotton in Punjab & Haryana and Soyabean in MP impacted by pests

In addition to deficient rainfall, there have been many instances of crop failure due to impact from pests. As an example, there have been sharp decline in cotton production in Punjab & Haryana (together produce 13% of country's cotton volumes) and Soyabean in Madhya Pradesh, impacted by pest attacks.

Box 2: Soyabean crop severely impacted in Madhya Pradesh

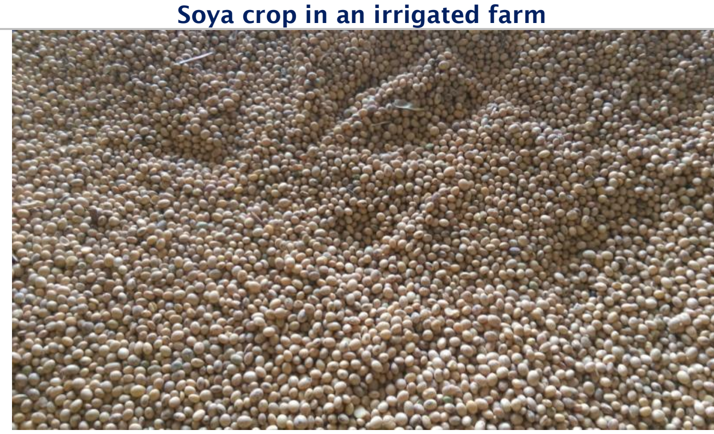
Madhya Pradesh is the largest producer of Soyabean in the country (45% of country's total production volumes). Soyabean crop has seen major decline in yield in current year. Our interactions with farmers indicated losses from 30% to up to 50-60% in some cases. Average soyabean productivity in a normal year is 600kgs per acre which has come down to 225-300kg per acre. The crop has been impacted adversely due to deficient monsoon as well as impact from pests.

Farmers face a double whammy. On one hand **yield goes down** and also as the output is generally of lower quality, **their realizations also go down.**

Exhibit 26. How poor rains and pest attack have destroyed Soya crop, resulting in lower quality of produce

Soya crop impacted by deficient rain

Soya crop in an irrigated farm



Source: Rural Safari

MP Government has however, taken multiple initiatives to eradicate and reduce farmers' losses, including providing free pesticides to efforts to compensate for the crop losses. The crop insurance scheme is popular in MP, which is aimed to provide support at times of crop losses. However, not all farmers whose crop is damaged get crop insurance cover. Some farmers told us that they have not yet received insurance amount for wheat crop failure (Apr/May 2015).

Box 3: Cotton Crop in Punjab & Haryana impacted by pest attack

In Punjab, cotton crop (6% of country's production volume) has been strongly impacted by a pest, whitefly. As per media reports, 2/3rd of the crop is destroyed with estimated impact of c.Rs42bn. The deficient rains during monsoon have also aided the pest to survive for longer period and thereby impact crops. State Government announced the use of a new insecticide, which has been in-effective and has been accused of resulting in further crop destruction. This has led farmers to resort to agitation to obtain compensation for crop losses.

Decline in agricultural production and crop losses have led some state Governments to undertake measures to compensate farmers. **We expect more relief packages and other initiatives by Government to mitigate some impact from crop production declines. Some of these measures are highlighted in Exhibit-42.**

Among states – Who are highly vulnerable?

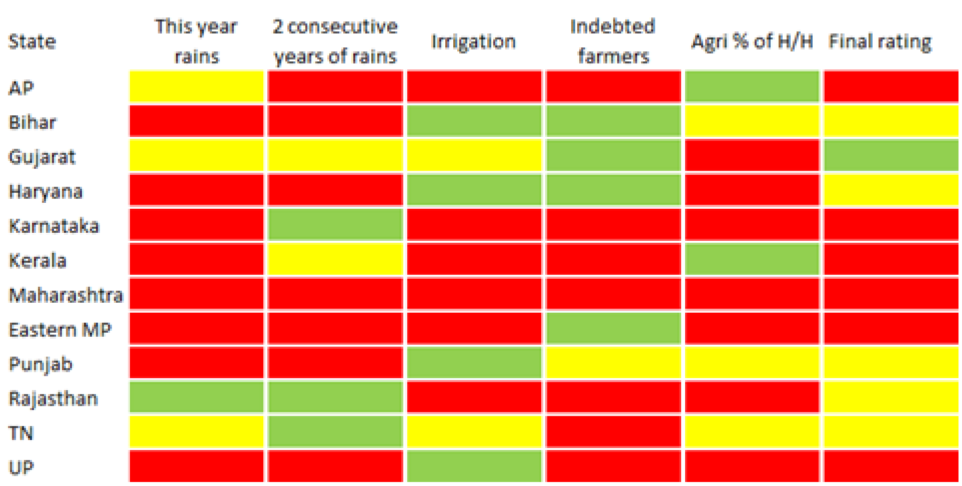
High consuming states such as **Uttar Pradesh, Maharashtra, Karnataka** and **eastern MP** are also highly dependent on cultivation with substantial income (>52%) coming from cultivation. These states have also experienced high deficits (Exhibit 19) following dry spells in this monsoon period.

States facing continuous deficits and low irrigation facilities will witness more stress than others. Large consuming states such as Karnataka and Maharashtra will get impacted

Effects will be pronounced in **Karnataka & Maharashtra** which have lower levels of irrigated area (Exhibit 18). Even though UP & eastern MP have higher net irrigated area, continuous high deficits (Exhibit 19) form a risk to cultivation. Hence, lower net irrigated area and continuous high deficits pose a risk to income for these high consuming states. The state of continuous high deficits also exists for Punjab and Haryana, however relatively higher net irrigated area (c.95%) might mitigate risks to cultivation. Few parts of **Andhra (Rayalaseema) & Telangana** are also struggling from low net irrigated area and higher rainfall deficit, posing risks for income levels. Possible lower income from cultivation for these states, (given high share of income is from cultivation) will lead to a downward pressure on consumption.

The state wise heat map below provides a summary across agricultural related parameters.

Exhibit 27. Final state wise heat map analyzing all parameters



Source: JM Financial, **Legend: Red** - Poor, **Green**- Good

Other factors (medium term) driving down agricultural income

Realization to farmers impacted by slower growth in MSP (Minimum Support price) during last few years

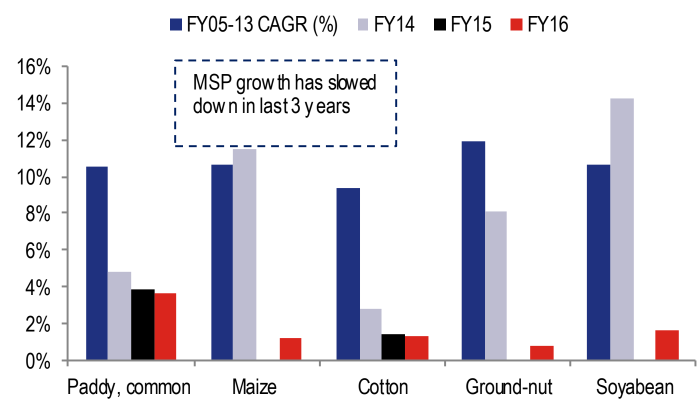
Indian Government announces MSP prices for a large number of agriculture produce, the price at which Government assures to buy from farmers. Though, procurement of crops at MSPs happen for **less than 40-45%** of produce, (as per our interaction with participants and various surveys), MSP price sets a base price even in private markets.

MSP growth rate has been weak in the last 2 years affecting farm income from cultivation

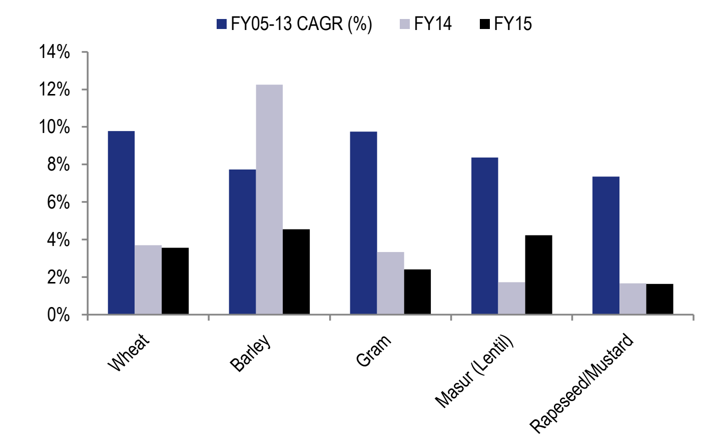
One of the reasons for farm-income growth in the past decade has been double-digit growth in MSPs. **MSP growth, however, has been subdued during the past two years, which has impacted agriculture profitability.**

Exhibit 28. MSP growth has come down from double digit between FY05-13 to low single digit growth now

Kharif MSP trend and growth rate (%)



Rabi MSP trend and growth rate (%)

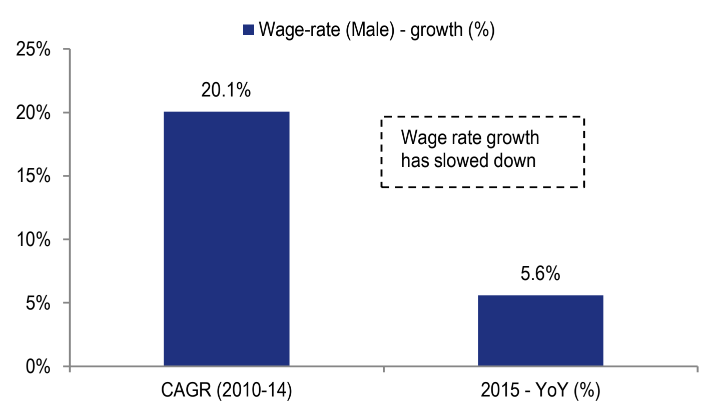


Source: CMIE

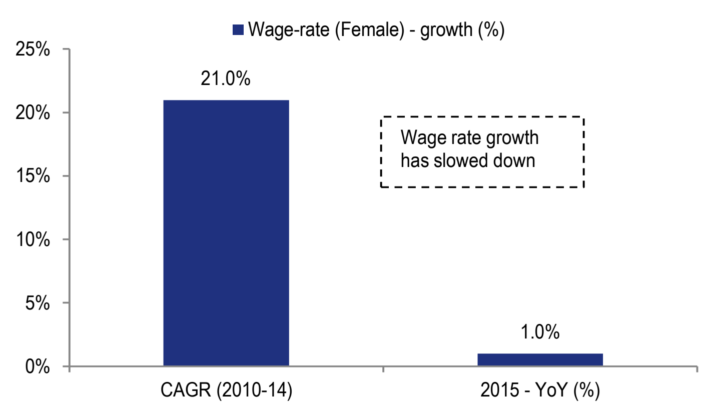
Wage growth has also slowed, impacting marginal and small farmers.

Exhibit 29. Wage rate growth has reduced in past few years

Single digit growth in wages in past one year



Wage rates have flattened out in current year



Source: CMIE, Wage rates based on monthly rates, 2015 rates calculated for Aug-15 wage rate

Besides cultivation income, wages form an important part of agricultural household, particularly for marginal and small farmers. During past few years, wages have witnessed c.20% CAGR, but growth rate has slowed over the past one year.

The slower growth in wages could be attributed to lower demand in farming, slowdown in infrastructure/mining activities etc.

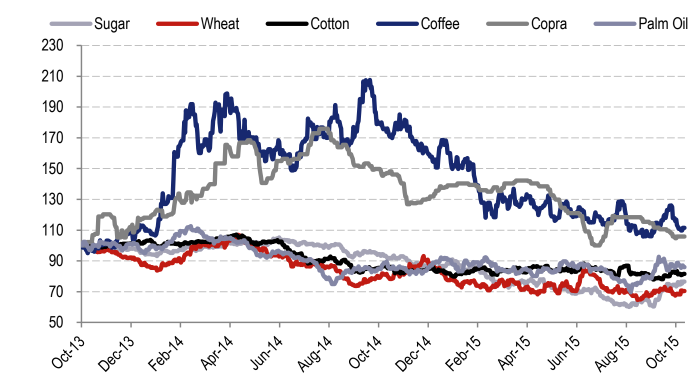
Global commodity price trend remains weak

Global agri commodity price rout have also resulted in lower realization

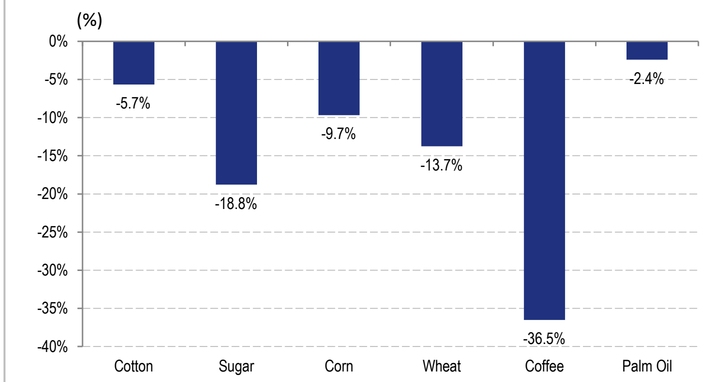
Prices of global agriculture commodities have remained weak, which has also impacted realization for farmers, particularly for the cash crops.

Exhibit 30. Global agricultural commodity prices have not seen any growth

Global commodities – agriculture commodity prices are falling (indexed to 100, Oct-13 prices)



12M price change for some key agricultural commodities



Source: Bloomberg, JM Financial

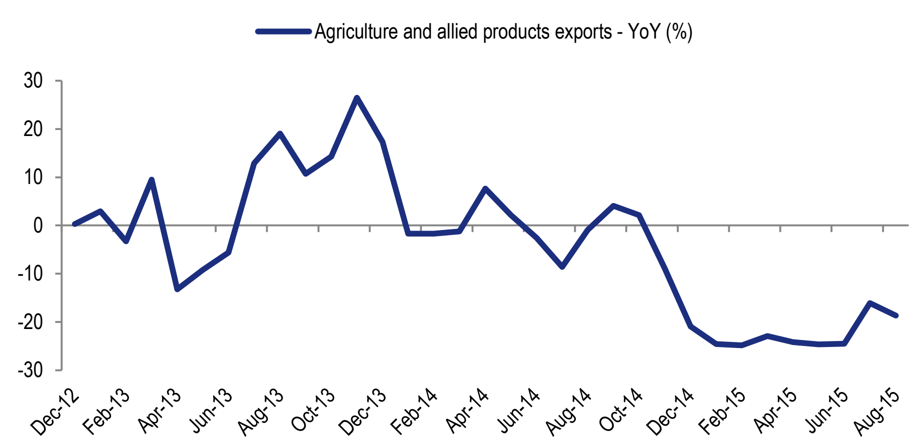
Agriculture produce exports from India have remained weak

Global weakness and over supply have resulted in decreasing agri produce exports

Agricultural produce exports have remained weak for last 2 years driven by weaker global demand as well as export restrictions on some products. Weakness in exports could be also explained by the oversupply of agri-commodities in the international market which led to drastic price correction.

Within agri-produce, fresh fruits and vegetables have been suffering as exports are continuously declining. Low production and export restriction in rice and wheat has led to drop in exports sequentially. Globally, over supply of dairy and dairy related products has led to sudden drop in exports in this category.

Exhibit 31. YoY growth in exports (USD) from India – Agriculture exports on downtrend



Source: CMIE, Note: In USD

Box 4: Decline in Basmati rice exports have impacted prices adversely

Punjab is one of largest producer of Basmati rice in India, with 30% of rice produced as Basmati in Punjab. However, Basmati rice does not come under MSP and prices are set by the markets. Our interaction with the farmers indicated sharp decline in market prices of Basmati rice (during Oct beginning), with realizations down from c. Rs3,000/quintal (1 quintal = 100kg) to around c. Rs1,300-1,400/quintal. The farmers indicated that cost per acre has been c. Rs12,000-13,000, and therefore at current prices, there is hardly any profit and essentially loss, as cost of transportation and storage is added.

This massive decline in price is also attributed to import reduction by Iran in 2014-15 (the destination for maximum exports from India of Basmati rice). The decline in prices had also lead to protests erupting in Punjab, where farmers wanted price ahead of Rs4,000-5,000/quintal to be fixed by State Government. However, news reports (beginning Nov 2015) have indicated resumption of imports of Basmati rice by Iran, which is likely to give boost to the prices to farmers.

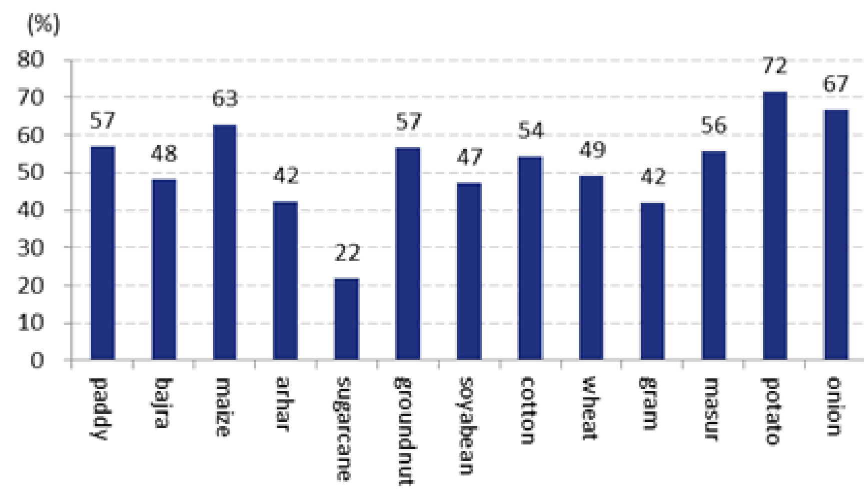
Local supply demand, key factor in determining price

As per NSSO survey and our interactions with farmers, more than 50% of agriculture produce is sold to local traders, rather than traded in mandis. This essentially leads to the middle-man retaining a large chunk of profit from the farmer.

Due to higher procurement from private players, realization is usually determined by supply and demand with middle men dominating the proceeds

We observed that even on reduced prices, traders usually take 2-3 weeks to make cash payment and a charge (usually 3-5%) is levied for on the spot cash payment. This further affects the farmer's realization.

Exhibit 32. Share of rural households selling their produce to local traders



Source: NSSO, JM Financial

Box 5: Farm procurement still remains unorganized

We visited the largest grain mandi in Madhya Pradesh, at the outskirts of Indore. Farmers here bring in their produce in trucks and auction of the produce is conducted in open. What we observed was that there was no bench-mark regarding quality of produce and price. **The auction is controlled by few traders of the mandi and their judgement drives eventual outcome for the farmer.**

Prices decided by the traders and middleman at Mandis

Exhibit 33. A Mandi in action in MP

Source: Rural Safari

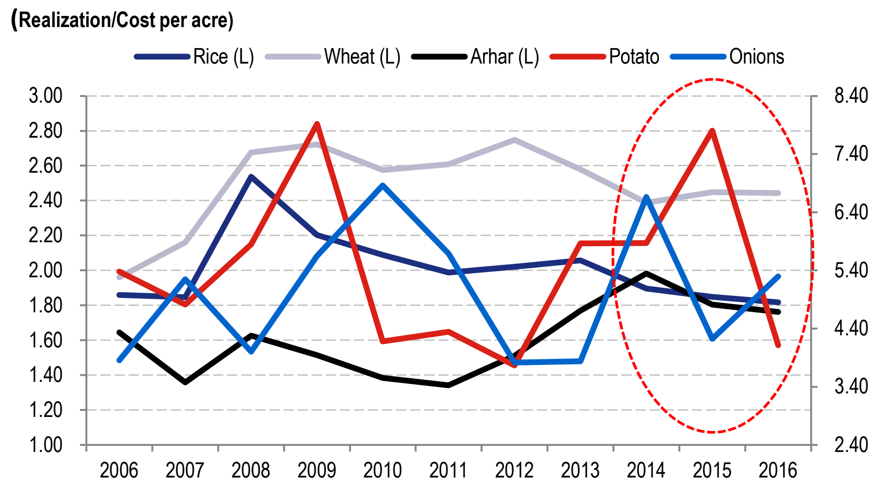
However, with increasing awareness, penetration of technology (mobile phones), improved access (infrastructure), farmers are better aware of price **and impact of middle-man is gradually on wane.**

Farm economics deteriorates

Realizations for famers had seen improvement over the past decade (till 2014) on account of strong growth in MSPs, strength in global agri commodity prices etc. **Now, past two years have seen deterioration in farm realization on account of lower MSP growth and weak prices.**

Due to lower growth in realization and comparatively better growth in wages in the past 2 years, profitability is getting affected for farmers

Exhibit 34. Farm economics has deteriorated compared to the past on moderate MSP hikes, erratic weather
Realization/Cost per acre ratio for key crops has deteriorated

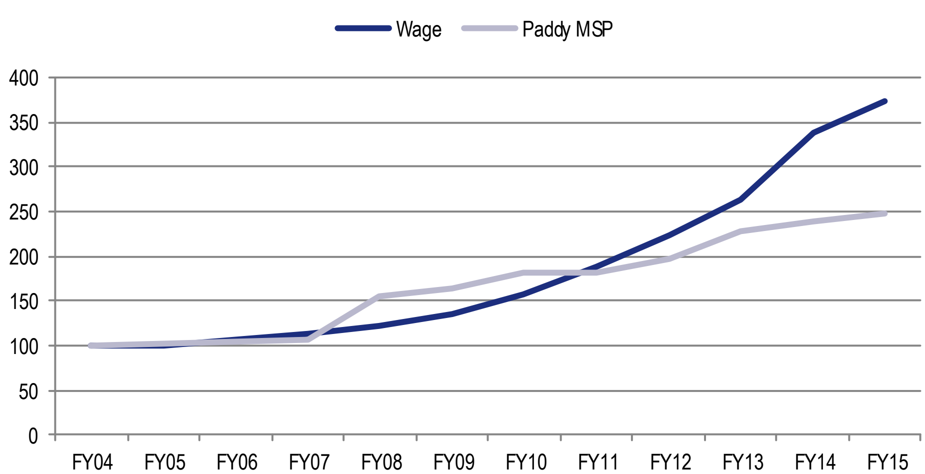


Source: JM Financial, CMIE, JM Financial, See annexure for detailed calculations
(See Annexure for detailed cost of cultivation indices).

While realization has dropped sharply, wage inflation has not exhibited a similar pace in decline. Even though wage inflation is declining, the sticky nature of wages means the rate of slowing down is lesser. Wage inflation is also sticky owing to the spending in NREGA. With farmers opting to work for NREGA, labor unavailability has kept inflation higher. Higher labor cost has led to a deteriorating realization/cost ratio as shown in exhibit above.

While wage rate has slowed down in the past year, the pace has been relatively slower compared to MSP prices due to sticky nature of wages.

Exhibit 35. Wage growth has been higher than MSP over the past decade



Source: CMIE

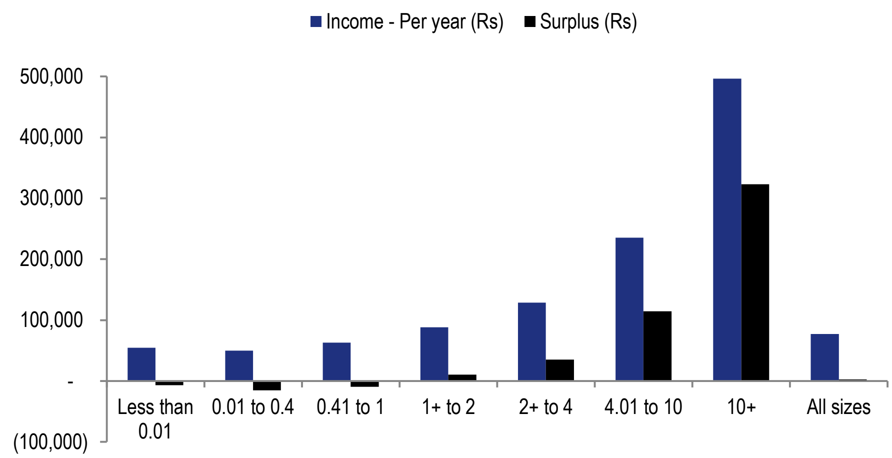
Weakness in agriculture output impacts mid and larger farmers' spending initially

We have also analyzed impact of agriculture weakness on farmers based on their scale – as indicated by land-holding per agriculture family.

Mid and large famers, due to higher contribution of income from cultivation, will witness a sharper slow down initially

Exhibit 36. Income earned vs. scale of farmer (in ha)

Surplus (post expenses), still negative for farmers below 1 hectare



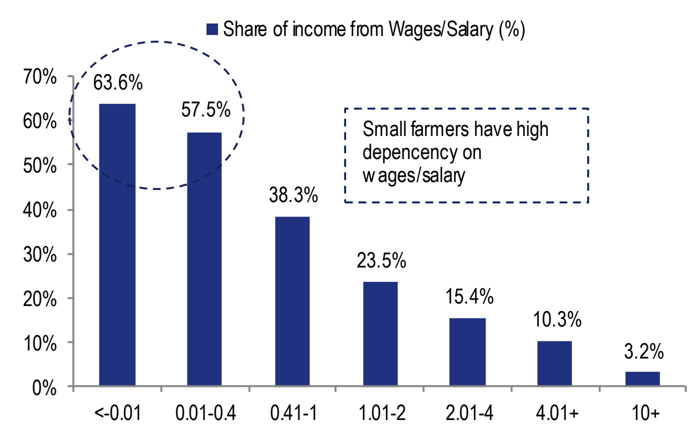
Source: NSSO

The marginal and small farmer (less than 1 hectare of land) gets a major share of income from non-agriculture activities (such as a labor, wage earner etc.). **It is the mid and large farmers who get a larger share of income from agriculture (more than 70%+).**

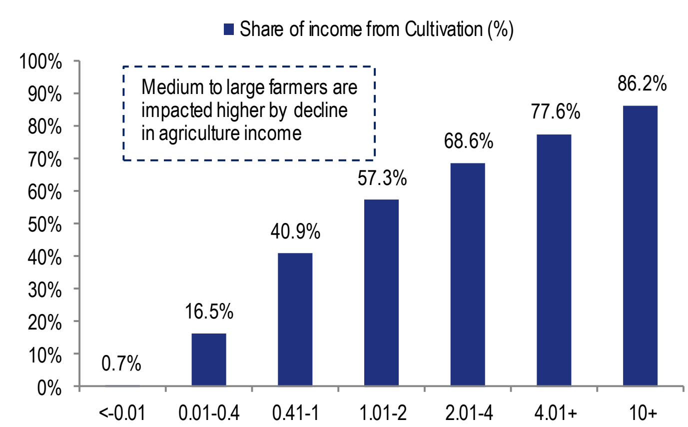
Therefore, decline in agriculture revenue initially impacts **the mid and large farmers, who are also consumers for discretionary products,** given their higher average income.

Exhibit 37. Impact of weakness in agriculture to have higher impact on medium and large farmers initially

Small and marginal farmers income largely driven by wages/labour (ha)



Medium and large farmers income impacts higher by decline in agriculture output

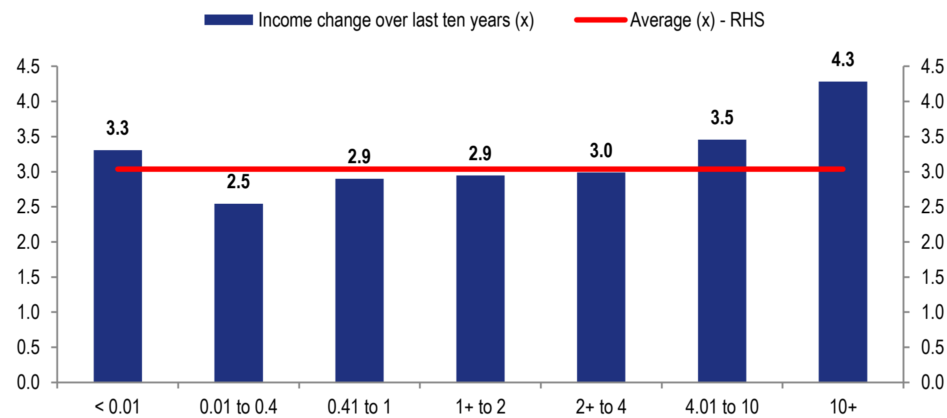


Source: NSSO

Over a longer term, average house-hold income of an agriculture family has increased 3 times from **Rs25,380 in 2003 to Rs77,112** (2013).

Income has improved across levels of farming family; however large farmers (4+ hectare owners) have seen higher income growth than average. The higher income growth for large farmers was driven by – high growth in agri-income (MSP increase), diversification to high yielding cash crops and remittances (in terms of family member being in a job/small business).

Exhibit 38. Income growth over a decade (x)
Though incomes have increased for all categories, large farmers (10+ hectares) have seen highest jump in income over decade



Source: NSSO, Note: Based on household farm size in hectares

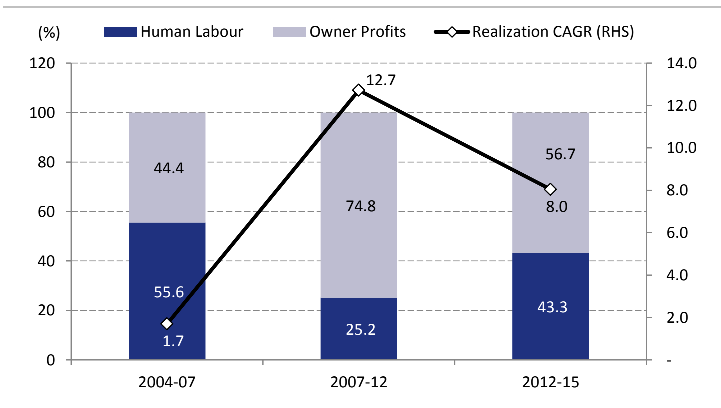
Shift in share of value add from Land owners to Labour

Due to lower profitability, share of value add for land owners have declined with labor picking up the slack.

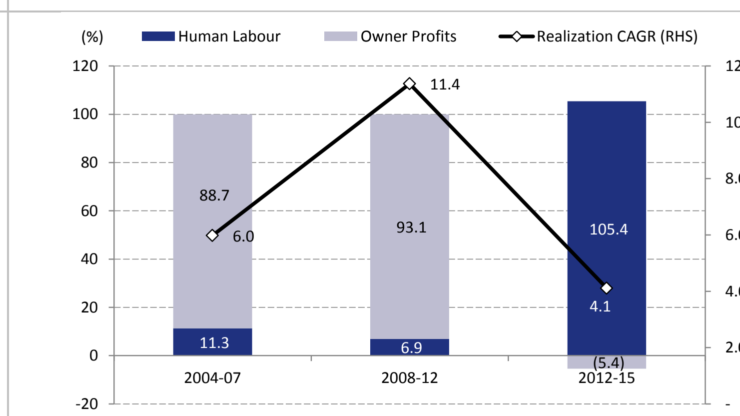
As shown in Exhibit 28, MSP hikes for cereals have increased sharply from FY05-13 and have been normalizing post FY13 with low hikes. However, the rate of slowdown in wage inflation has not been similar to that of MSP slowdown due to its sticky nature. Thus, for large farmers who are dependent on labor, cost of farming went up with realization remaining constant, thereby resulting in a slower pace of profit for land-owner. **Therefore, share of value add stood higher for laborers (higher wages) as compared to the share for land owners (lower profits) recently.**

Exhibit 39. Shift in value add share from land owners to labour owing to low MSP hikes and sticky wage inflation

Value add share of Rice



Value add share of Wheat

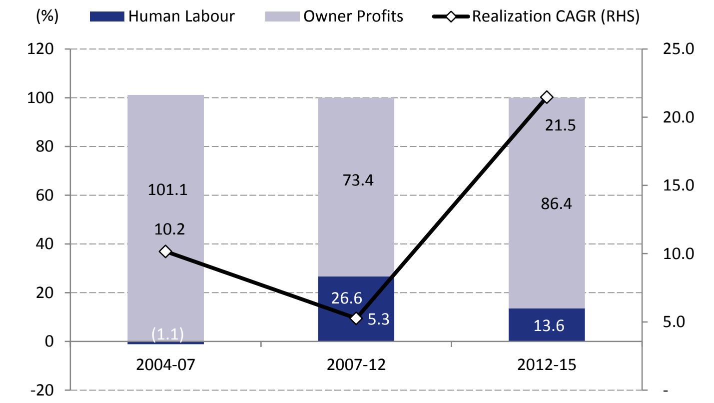


Source: Cost of cultivation surveys, WPI Sub-indices, CACP data for MSPs

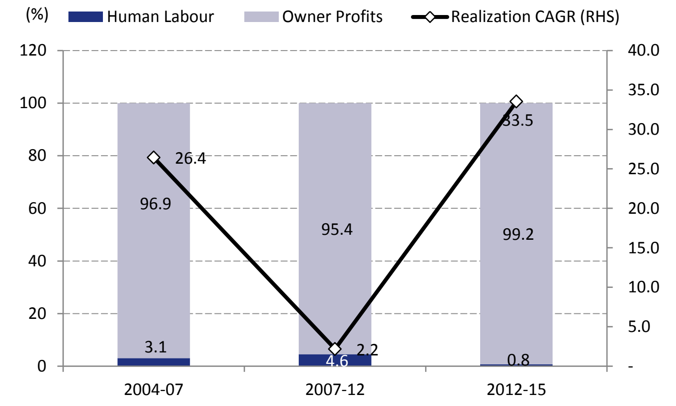
While price of paddy is dependent on MSP, Onion, Potato and other vegetable prices are driven by market. In such an environment, share of value add is determined by the seasonal effect of prices. For onion and Potato, hence the sharper price increase (relative to wage inflation) from FY12-15 has enabled higher share of value add to land owners as compared to laborers. However, due to the volatile nature of market price of vegetables, share of value add tends to shift between labor and land owner.

Exhibit 40. Share of value add for labour and land owner is volatile in Onion & Potatoes

Value add share of Onion



Value add share of Potato



Source: Cost of cultivation surveys, WPI Sub-indices, CACP data for MSPs

Box 6: Large farmers spend on education, entertainment in line with urban peers

Our interactions with large farmers highlighted the changes over the years in their income patterns, consumption and aspirations.

Exhibit 41. Farmers with 10+ acres of land for cultivation

Farming family in AP, remittances aid in managing volatility of farm income	With a large farmer family in Punjab
	

Source: Rural Safari

We met Mr. Tulabandula in Andhra Pradesh, a farmer for 25 years, has 15 acre of land. He has two children who got formal education and they work in metro cities of India. Farming is done with the aid of labor. His annual income has been c.0.9mn/year. This includes c.0.5mn/year sent by his sons and c.0.4mn/year from farming and dairy. He claims that the remittance sent back from his sons help him in managing volatility in farm income.

We met Mr. Sunil Singh (photograph at upper-right), in a village, 40 kms from Amritsar, Punjab, who has 10 acres of land, also takes 4-5 acres of land on rent. Mr Singh was earlier in BSF (Border Security Forces) and post retirement has taken up farming, with help of hired labor. He has two children – Son, runs an SME business and daughter has been married. Both of his children are graduates. His grand-sons go to private schools with annual fees of Rs80,000/year.

His income from farming is c.Rs0.3mn/year, from dairy it is Rs0.15mn (has 21 buffalos), his son provides Rs0.1mn/year and also Rs0.1mn+/year from pension, resulting in total family income of Rs0.6mn+/year. He is disappointed with the falling price of basmati rice, but given his total income, has been pretty comfortable about managing his family’s lifestyle.

What interested us was the lavish house they maintained in village, and had air-conditioned rooms, interiors done including false ceilings, 3 LCD TVs, Car (Maruti Swift) and Tractor including others.

How is Government responding to weakness in agriculture?

Given the rainfall deficit and adverse impact on crops across country, there have been many initiatives taken by Governments (central as well as state) to eradicate the situation.

Exhibit 42. State Government initiating actions for resolving farming issues

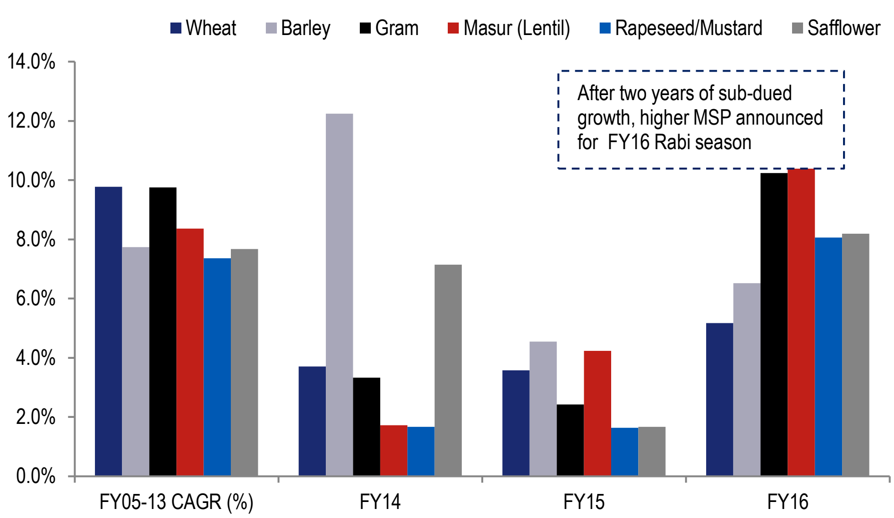
State	Government actions
Madhya Pradesh	State budget to be cut by 15% next year impacting infrastructure projects. Govt announced Rs75bn farmer relief - Rs30bn for Soyabean crop loss, Rs30bn against crop insurance and Rs10bn against interest waiver in current years. The state has asked for initial assistance of 34.5bn from Central Government
Karnataka	State plans to waive interest and penal interest on crop loans from co-operative banks for the current fiscal. Has hiked the compensation limit from Rs 0.2mn to Rs0.5mn to families of farmers who had committed suicide.
Punjab	Government has released amount of Rs6.5bn as compensation for farmers who have suffered major loss of cotton crops due to whitefly and other pests attack.
Odisha	State has increased the no. of days in MGNREGA by 50 to 200 this year (Central Govt has increased from 100 days to 150 days), Rs10bn package for farmers for drought relief, cash incentives to small and marginal farmers who have sustained 33% crop loss. Re-schedule of crop loss scheme.

Source: Media reports

Government announced MSP prices for Rabi crop (Apr/May 2016), with growth in range of 5% for Wheat, 6.5% for Barley and c.10% for Gram and Masur (pulses). The increase in MSP would benefit cultivation income in 1HFY17, and is a positive step, in our view.

Govt has announced a higher increase in MSP prices to boost realization and help cultivation income

Exhibit 43. MSP increase for upcoming Rabi harvest (Apr/May 2016), at higher rate than last two years growth rate



Source: CMIE

Focus on increased adoption of pulses

In addition, higher MSP (including bonus) for pulses are given to promote higher adoption of pulses for farming in the Rabi season. For the Kharif season (underway at present), Government had earlier declared a bonus of Rs200 per quintal over and above the MSPs of Kharif pulses for 2015-16 season.

(a) Government has also directed that (FCI) will be the Central Nodal Agency for procurement of pulses and oilseeds. This has been done to improve the procurement mechanism for pulses and oilseeds.

Some other steps undertaken by Government in agriculture

(a) A Scheme to issue Soil Health Card to every farmer was introduced. Soil health management in the country is being promoted through setting up of soil & fertilizer testing laboratories and implementation of organic farming.

(b) Government has also framed guidelines under Paramparagat Krishi Vikas Yojna (PKVY) to promote organic farming and develop potential market for organic products.

Govt has introduced various schemes to soften the stress by educating the farmers, providing access to electricity (solar in certain places), removing middle men, etc

(c) The Pradhan Mantri Krishi Sinchai Yojana, has been launched with the objective of creating sources of assured irrigation.

(d) A dedicated Kisan Channel has been started by the Doordarshan to address various issues concerning farmers. Government has also created portal on crops insurance in order to keep farmers better informed.

(e) An initiative is being taken to set up a National Agriculture Market (NAM). This would enable farmers to overcome the impediments in marketing of agricultural produce and get better price discovery. A common e-market platform is being created and would be provided free of cost to the States/UTs.

(f) Government has taken steps to introduce electronic trading which will facilitate single license for trading in the whole States/country as well as single point levy of market fee.

Box 7: Investment in solar energy panels to aid in irrigation

During our trip to Hoshiarpur district, we came across a large solar power project (4.2 MW), which was under construction. This project is in Lalpur village, which is hilly terrain and lacks irrigation facilities. Solar power would be used to provide irrigation facility to nearby farms and this project has also led to increase in land prices in adjacent area and there is hope in local population of improved lifestyle, with better irrigation facility.

Exhibit 44. A solar cell based project in Hoshiarpur district of Punjab

Source: JM Financial

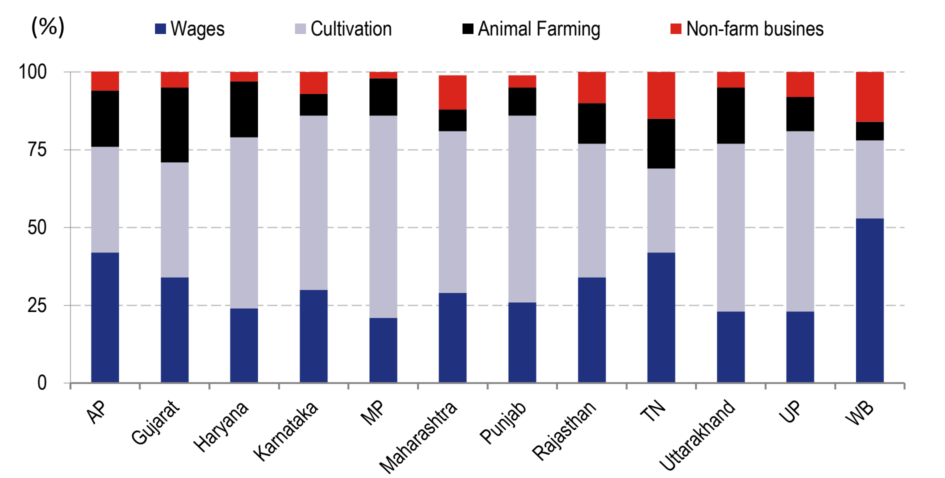
Mixed non-agricultural trends

We witnessed an increasing trend of farmers diversifying their income through a) dairy farming b) wage based occupation c) sand mining d) tractor income and e) opening up a new business. While small farmers opt for labor and running of petty shops, marginal and large farmers choose renting out tractors, dairy farming and setting up small enterprises. With sand mining gaining traction and infrastructure investments picking up, wage income has not witnessed a decline thereby providing support to farmer income.

Dairy farming is used by many farmers to provide a stable form of income.

Diversification to dairy provides hedge against farm income decline: Income from animal farming has become a key ancillary source of income: At an all India level, 12% of total income of an agricultural household comes from animal farming with AP at 18% followed Uttarakhand-18%, Haryana-18%, TN-16%, UP-11%

Exhibit 45. Income from Animal farming provides hedge against farm income

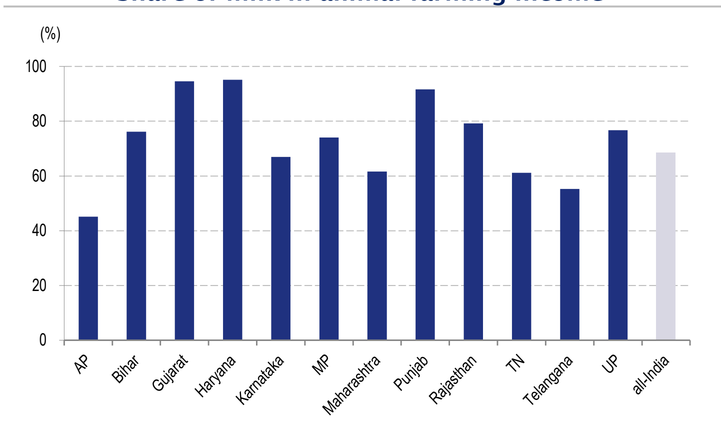


Source: NSSO

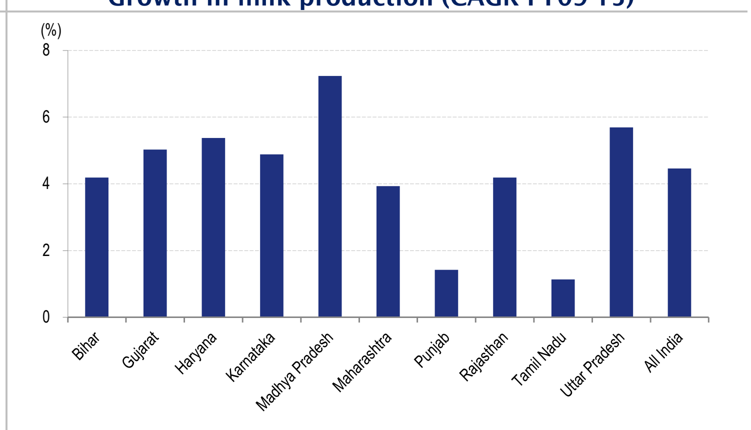
Of the total animal farming income, income from milk constitutes nearly 68% at the all India level. Gujarat leads at 95%, Punjab at 92%, MP& UP at c.75% while rest of India remains below 75%. Milk production witnessed CAGR of 4.2% (FY09-14) to 137.6 mn tonnes and is estimated to grow by 5.8%YoY in FY15.

Exhibit 46. Milk contributing maximum share in animal farming income and growing at a steady pace

Share of milk in animal farming income



Growth in milk production (CAGR FY09-15)



Source: Rural Safari

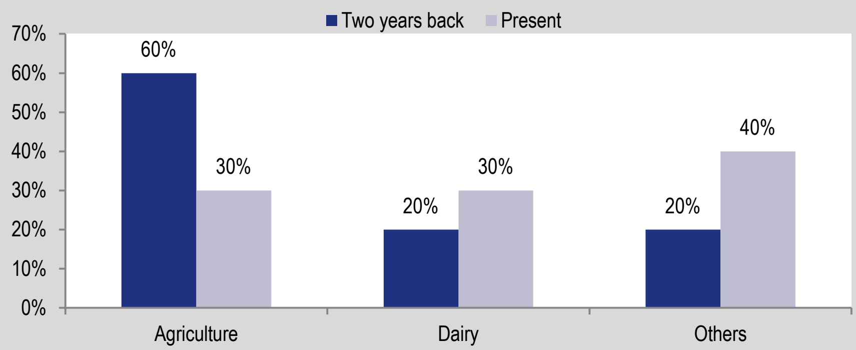
Box 8: Dairy provides a key support in case of volatility in farm income

Diversification to dairy along with improved mechanization has enabled farmers to supplement their income. We met, Mr. Prakash (left most in adjacent picture), a farmer in Herur village, in Tumkur district of Karnataka. He has 2.3acres of farm-land and grows Coconut, Arrack, Maize. He has also around 10 cows and now obtains, c.30% of his total income (total income of c.Rs2-2.5lakhs/year) from dairy.

In addition, he took training in veterinary medicine and has become the dairy secretary of his area. As a dairy secretary, he does the collections of milk at his place and sends collected milk to the dairy in city. **Usage of devices (as shown in adjacent diagram) in dairy also helps in increasing productivity.**

We also saw the transformation in income stream in case of Mr. Prakash. Agriculture, from 60% share has reduced to 30% for him in last two years, while dairy is up from 20% to 30% and income from other activities (medical care, dairy agency operation) etc. now contributes 40% of total earnings.

Exhibit 47. Share of income from various activities – Reduction in share of agriculture



Source: Rural Safari

During our survey of states, we observed that income from dairy farming typically constitutes 10-20% of the total household income. While there has been a trend to increase non-farm income, the pace of diversification has been rather slow.

Milk prices seem to have moderated in Karnataka, Maharashtra and AP. The state governments in Karnataka and AP have been providing subsidy of Rs 4/litre to support milk prices.

Box 9: SME business in rural India (near an urban centre) can also provide very healthy returns – Case of tea-stall vendor near Indore, MP

In Depalpur, a small town around 50kms from Indore (MP), we met a tea-stall owner and were impressed by the **high returns from a simple business model**. The tea-stall is located near colleges and has also seen road construction near-by leading to high traffic on consistent basis.

There are multiple opportunities across SME segments in India

The father aged 55 and his son (32 years) run the shop taking the help of one labor. Net-net, he is able to save Rs 6,200/day leading to **monthly income of c.Rs1.8 lakh.**

He puts the savings in bank and invests in fixed deposits. He also does local lending using his savings.

He has a Honda Shine and wants to buy a Royal Enfield in two wheelers and Swift Dzire in four wheelers. His long term goal is to run a hotel.

Exhibit 48. At Tea stall in Madhya Pradesh

Source: JM Financial

Exhibit 49. Revenue and costs for the tea-vendor

Detailed break-up	Amount (Rs)
No of tea sold/day	2,500
Price per cup (Rs)	6
Total revenue per day (Rs)	**15,000**
Cost per day	**8,820**
Milk - 200 litres at Rs35/litre	7,000
Sugar - 10Kg @ Rs 32	320
Tea leaves - 3kg per day	700
Gas cylinder per day – 1	700
Electricity/rent per day	100
Labour cost	100
Profit per day (Rs)	**6,180**

Source: JM Financial

Sand mining providing relief to income levels

Removal of sand mining bans have led to the increase of sand transportation business providing relief to income

In most parts of the country, sand mining bans have been lifted in recent months and farmers are increasingly getting involved in sand business which is an additional and profitable revenue stream. Presence of several brick klins have also contributed to income support for the farmers (especially during the non-farm seasons) through wages.

Exhibit 50. Brick kilns are visible across major regions

Brick-kilns have been visible across regions	New corridor near Indore – "Hi-Link"
	

Source: Rural Safari

Box 10: Silica mining opens up labour prospects in East UP, Punjab

We met a silica mine owner in Varanasi. He owns 3 silica mines in/around Allahabad (within family >6 mines). Supplies to all prominent glass makers, auto OEMs like Asahi India glass, DCM, Tata motors, M&M, etc.

All silica mines were banned by Allahabad High court since 2011 due to environmental concerns. Few of his mines got approval in 2014 and few of them a few months ago. Center modified the regulations and put the onus on the state to provide approvals. Only 13 out of >50 mines have been given approvals in Allahabad area. He spent 6-7 months in Lucknow to get approvals from state government for mining license, which is now valid for 20 yrs. Silica mining is done at Allahabad, Guntur (Andhra Pradesh) and in Karnataka. We also noted increase in sand mining activities in Punjab, Telangana etc.

One of the farmers in Punjab, near Amritsar, has taken up sand transportation in a big way, and this has supplemented his income very well. He transports sand from neighboring area (30kms away) using his tractor, which remains idle on non-farming days. He makes Rs4.000/trolley, with sale price of Rs9,000/trolley and total cost of Rs5,000/day. He can take up this activity for for c.20 days a month, implying Rs80,000/month of additional income.

<u>**While sand transportation helps tractor demand, weak farmer sentiment and low activity levels in farming have led to lower overall demand for tractors**</u>. Hence, number of days to rent out a tractor has declined, thereby negatively impacting income levels**. Reduction in diesel prices have marginally helped farmers in reducing the cost but unable to negate the effect of lower demand.**

Box 11: Reworking the economics of owning a tractor for a marginal farmer, increase in payback period due to weak demand

We revisited the economics of letting out of tractors, based on our recent interactions with farmers. While on the positive side reduction in diesel prices has reduced cost for the tractor owners (we did not see any reduction in per hour rentals), the same has been unable to negate the impact of lower activity levels (both in agriculture and allied activities like construction, government spending on rural infrastructure). We continue to work with a different scenarios using the range of rates (₹400-700/hour) and reduction in demand (29%-38%) to bring out the adverse impact on tractor income.

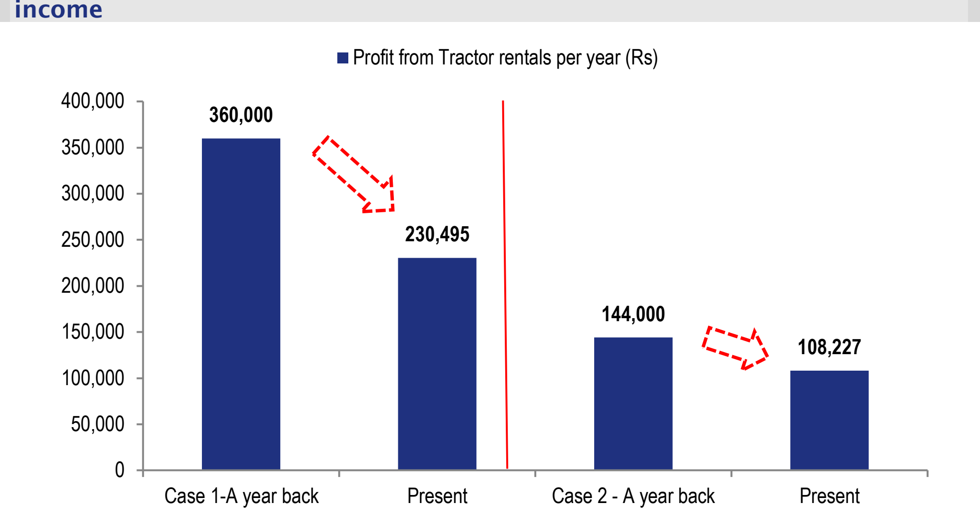
Reduction in diesel prices has been unable to negate the negative impact of reduced activity levels at both farm and allied activities.

Exhibit 51.– Working out the tractor economics

Tractor Cost (₹)				**550,000**
Down payment				50,000
Loan amount				500,000
Interest rate				15%
Number of payments (installment paid every six months)				6
Interest paid				132,118
Total cost				682,118
	Case 1 - New	**Case 2 - New**	**Case 1 - old**	**Case 2 - old**
Tractor rent (₹/hr)	700	400	700	400
Diesel cost (₹/hr)	138	138	150	150
Maintenance (₹/hr)	50	50	50	50
Saving (₹/hr)	512	212	500	200
No. of days tractor used	90	102	120	120
Hours/day tractor let out	5	5	6	6
Profit per year	**230,495**	**108,227**	**360,000**	**144,000**
Payback period (years)	**3.0**	**6.3**	**1.9**	**4.7**

Source: JM Financial

Exhibit 52. Reduced activity levels – More than 50% decline in tractor rental income



Source: JM Financial

NREGA expenditure stagnant, mixed trend in development expenditure

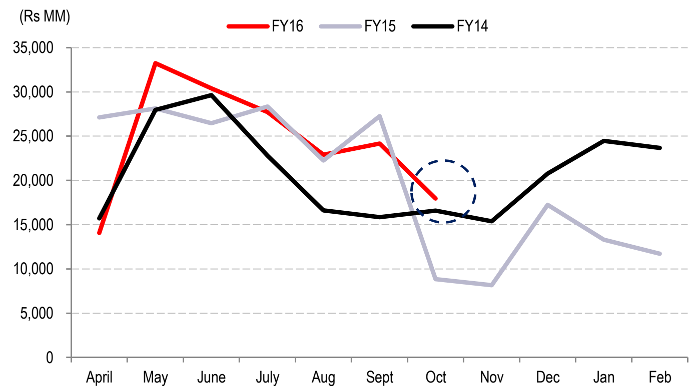
Stagnant wage expenditure spend by government doesn't provide much support to falling rural income. The wage rate inflation from NREGA (National Rural Employment Guarantee Act) has remained benign putting downside pressure on income levels of small farmers. **<u>The expenditure spend saw a pick up early in the fiscal year but remained benign in the subsequent months.</u>**

The number of person days' has also witnessed a sharp fall YTD (6.6% down). This would affect the net number of days a person get paid and subsequently will lower the income for the farmer. **<u>Hence, contribution from NREGA to non-farm income of farmers remains benign as compared to previous years.</u>**

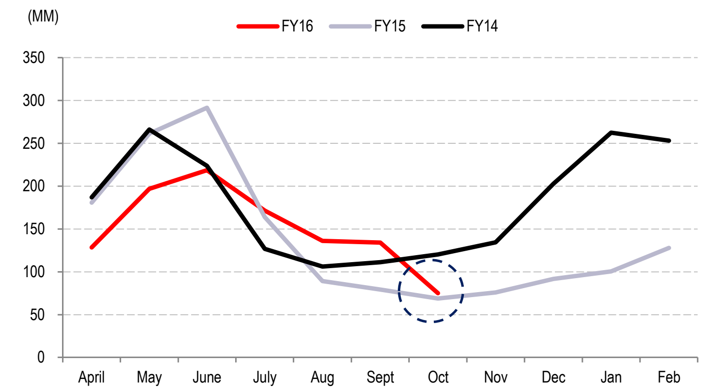
Even though wages have held up, number of person days has declined leading to stagnant wage income overall.

Exhibit 53. Stagnant trend for NREGA expenditure combined with lesser person-days puts pressure on income levels

NREGA monthly wage expenditure trend



Person-days work under NREGA – Running way behind target in FY16

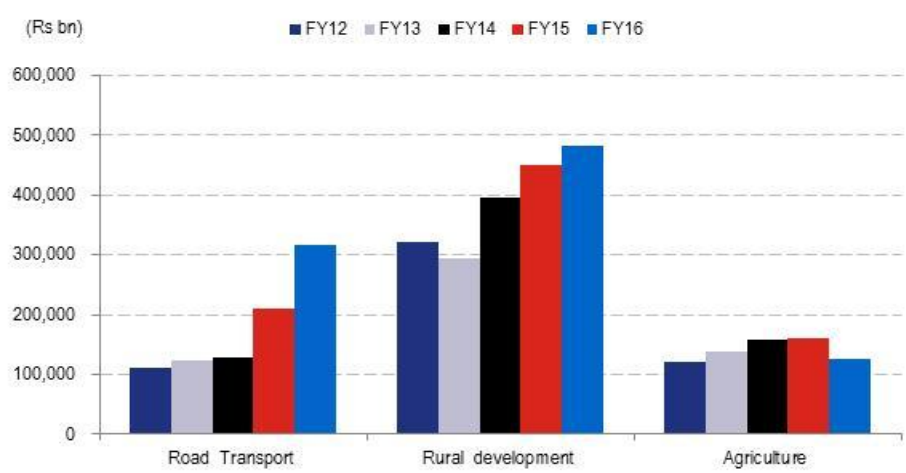


Source: nrega.nic.in, JM Financial

While spending on NREGA expenditure has remained stagnant, government has stepped up spending on infrastructure related projects sharply (49% YoY). However, Ministry of agriculture has witnessed a fall in spending (-22% YoY) while rural development spending is benign (7% YoY). **Hence, increase in employment opportunities in rural has remained under pressure, as witnessed in our visits as well.**

Development projects have witnessed a slight higher spending but overall employment generation remains weak

Exhibit 54. Government concentrating more on development related projects (FYTD)



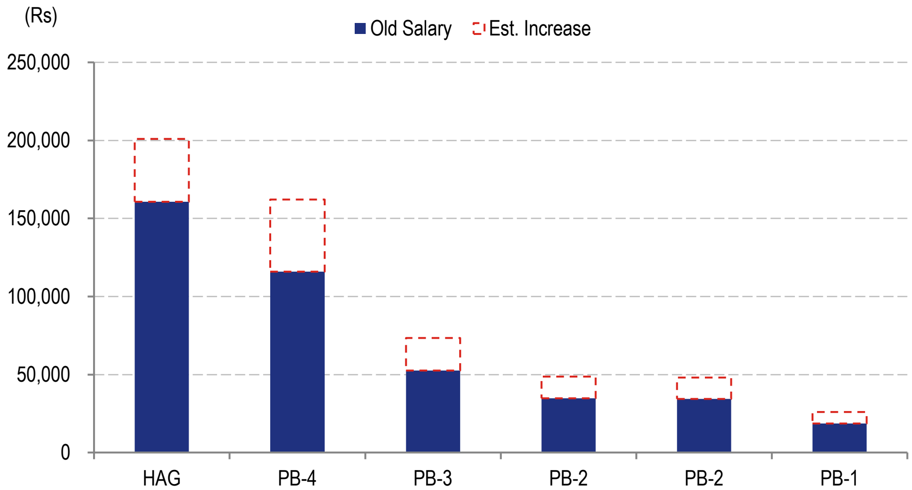
Source: CMIE, JM Financial

Upcoming 7th pay commission recommendations will add stimulus in rural economy

With 7th pay commission report due by Jan-2016, the revised pay structure is expected to increase the pay out to central govt employees by 25-30% of their current pay. The increase in pay will create a stimulus to boost the consumption in the economy.

Upcoming 7th pay commission will increase overall payout by an estimated 30%, giving a boost to consumption even in rural areas

Exhibit 55. Income levels of Central Government employees to get a boost with 7th pay commission implementation – State Government's will follow

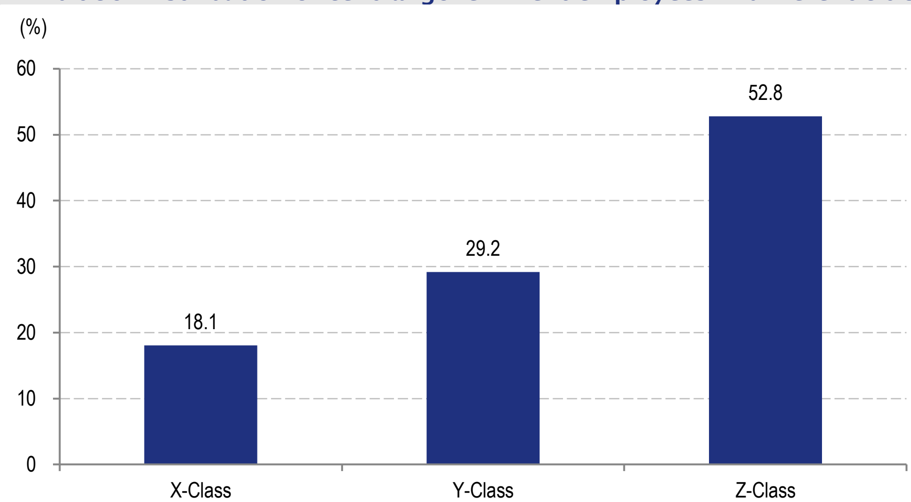


Source: Pay grade, JMF estimates, HAG: Higher Administrative Grade, PB: Pay Band

As per census on central government employees, around 53% of the employees stay in z-class cities (Tier-III and below). Hence, an increase in pay would enable a rise in income levels and spur consumption in rural area. It is also to be noted that post central government recommendations, most of the state government employees will also benefit from a hike in pay.

Around 53% of central government employees stay in tier-III towns and will benefit from a pay hike

Exhibit 56. Distribution of central government employees in different cities



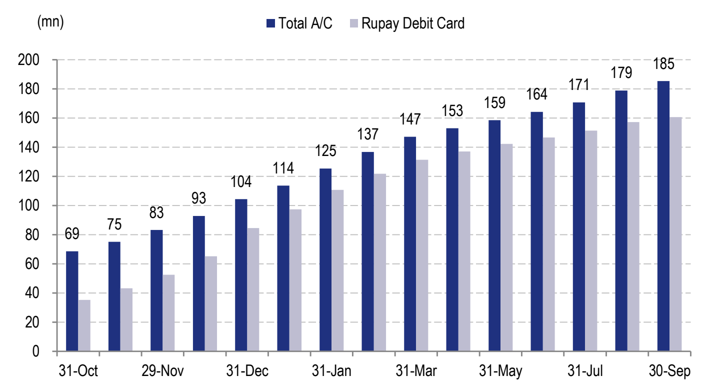
Source: Central Govt Census, 2014, X-Class: Tier-1 (8 cities), Y-Class: Tier-II, Z-Class: Tier-III cities

PMJDY is on full swing to help financial inclusion in rural areas

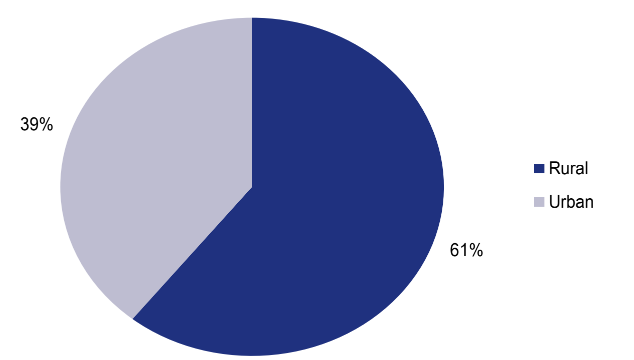
Access to finance and financial inclusion has been constantly increasing in the rural areas through PMJDY and microfinance penetration. The number of bank accounts opened in PMJDY **have already crossed 185mn with maximum impetus on rural areas.** The number of zero-balance accounts have also been decreasing at a fast pace indicating the usage of the accounts. **Increasingly, PMJDY accounts are being linked to Aadhar for DBT benefits as well. The number of accounts open will help in providing banking solutions and financial products to Rural India. It will also help them in accessing credit at a much easier manner.**

Exhibit 57. PMJDY account enrolments continue in full-swing and now crossed 185mn+

Enrolments under PMJDY have touched 185mn+ as on Sep'15



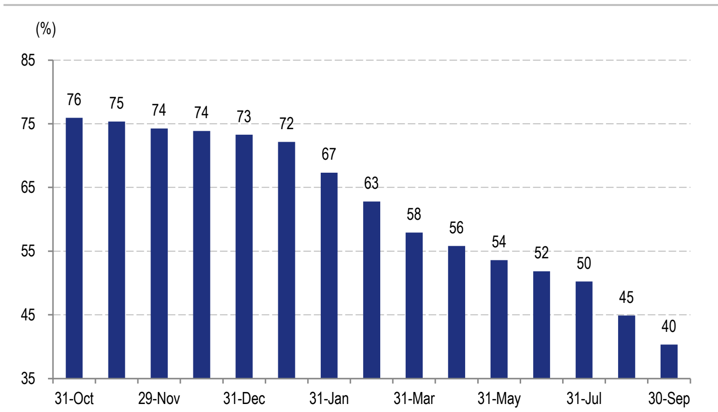
Urban and rural break-up of PMJDY accounts



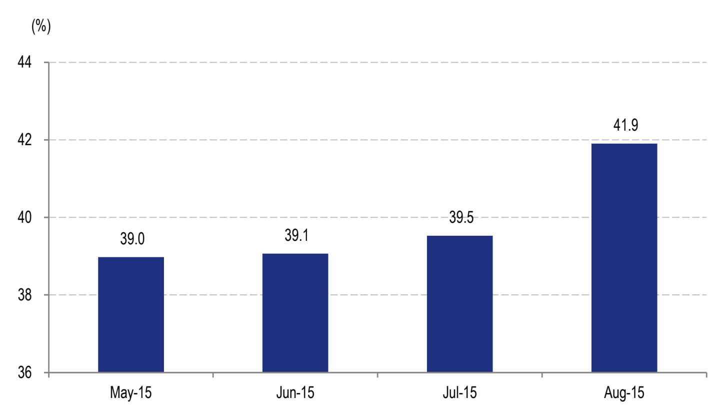
Source: PMJDY, JM Financial

Exhibit 58. The Aadhar seeding of the accounts has been on the rise and the share of Zero balance accounts has fallen

Share of Zero balance accounts has been falling over the months



Aadhar seeding is on the rise as well



Source: PMJDY, JM Financial

Seamless subsidy receivement through DBT:

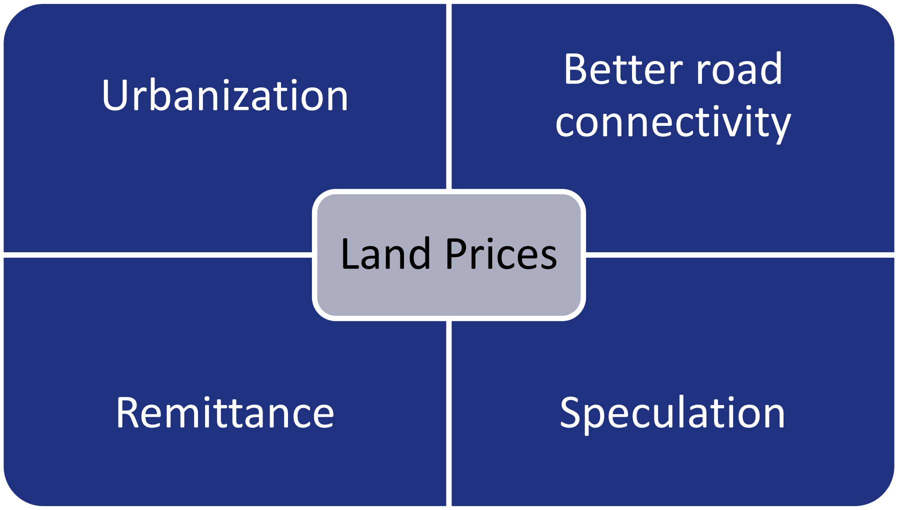
Direct benefit transfer for LPG subsidy is running smoothly across the country.

Even though paying LPG subsidy as part of DBT via bank accounts majorly benefits government and doesn't affect consumption pattern, it does help in regions where siphoning of gas is existant in abundance. **Based on our discussions, in certain areas due to siphoning of gas and black market domination, people were forced to pay extra due to unavailability of gas. Now that subsidy is directly getting transferred to the bank accounts these regions will benefit from receiving subsidy which will increase their surplus. Based on our discussions, DBT is running smoothly across all regions now.**

Wealth effect of land

Land prices in India have jumped c.5-10x over the past ten years driven by urbanization, improved road connectivity and remittances. As land prices were on increasing trend, speculation also increased leading to price increases.

Exhibit 59. Key factors driving land prices



Source: JM Financial

Stable land prices

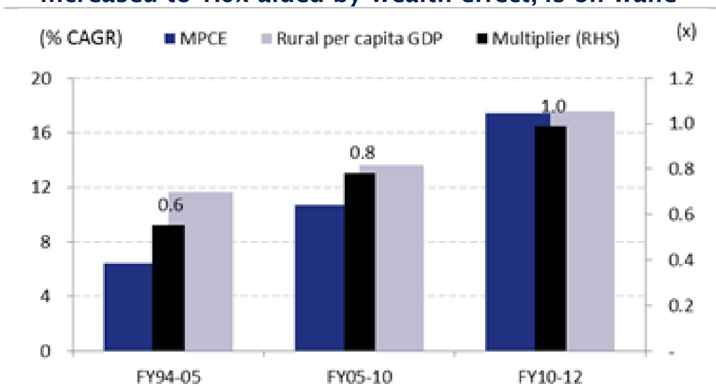
In our previous report, we expected reduced momentum on land prices and our ground-checks corroborated the view. Overall, barring regions adjacent to urban areas or where large infrastructure projects are coming up, we did not see much evidence of land transactions. Price movement upwards has definitely been arrested in a major way, while in major regions, land prices have remained stable. In some regions, we found price correction (Punjab), though this was largely a state-specific factor.

Land prices have remained stable in the last year or so post sharp increase in the prior periods. This will affect the ability to spend from the increasing wealth effect.

Wealth effect of land had aided in consumption growth

Exhibit 60. Wealth effect which increased propensity to consume has moderated over the last one year

Elasticity of rural consumption to rural GDP – had increased to 1.0x aided by wealth effect, is on wane



Land prices have remained largely stable with transactions declining substantially

Region	Comment on land prices (rural)
Punjab	Decline by 20-30% over last 2 years
AP/Telangana	Prices up slightly because of development after state bifurcation
Rest of states visited	Prices stable, hardly any transactions, pressure on downside

Source: NSSO, Rural Safari

We have seen improved propensity to consume in rural India (elasticity of rural consumption to rural GDP increased from <0.7x pre-2009 to close to 1x in years after 2009), which was also driven by the land price increase over the years. **As land prices stop their upward growth trajectory, we expect wealth effect to taper and also impact consumption adversely.**

Box 12: Land prices on a course-correction in Punjab, state specific factors at play

In contrast to places we visited, land prices in Punjab have corrected on an average by about c.20-30% over last two years. Historically, prices have increased in Punjab (5-10x) over the past decade, in-line with the trend seen across country.

The reasons attributed to land price correction in Punjab are largely state specific – **(a)** State Government has added new rules in regards to land sale and registration. The process of conversion from agriculture to other usage has become more cumbersome. **(b)** As a result of the change in policies, speculation has reduced resulting in correction of land prices.

However, in cases where there has been infrastructure development or improvement in irrigation facilities (picture below), land prices have increased as well near those areas.

Exhibit 61. Improved irrigation facility – drives positively prices in nearby areas

Source: JM Financial

While prices have corrected or remained stable in most areas we visited, **Andhra and Telangana stand as an exception with prices increasing even in the last year.** This is majorly due to the bifurcation into 2 separate states and expected momentum in development activities surrounding both states. Especially, districts near AP's newly formed state capital (Amravati) have witnessed a rise in prices.

Long term structural drivers intact

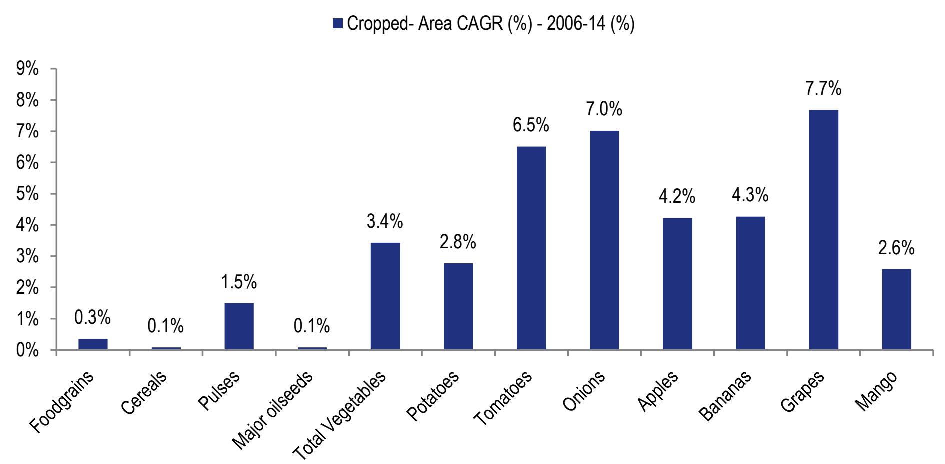
Given weak sentiment in farming and lower income levels, consumption demand in the near term looks subdued. However, we believe long term structural trends for rural India remain firm - (a) increasing profitability through cash crops and allied activities, (b) increase diversification through non-farming income, (c) disintermediation, (d) targeted direct benefit transfer, and (e) usage of higher mechanization and awareness of technical advancements.

Diversification to cash crops aiding to rural income

Indian farmers have taken over cash crops and other associated activities – such as dairy and poultry, which has aided in diversification of income and provides hedge to crop loss scenarios.

Farmers are increasingly diversifying to cash crops to improve the profitability and diversify income

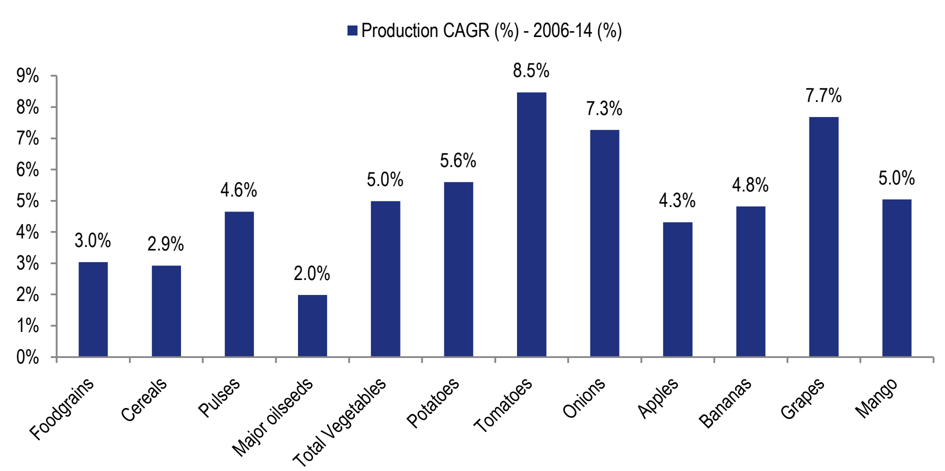
Exhibit 62. Steady shift of farmers to cash crops – including fruits and vegetables



Source: NSSO

Over the past decade (2005-14), area under cultivation for food grains was up by 0.3%, for pulses by 1.5%, while Vegetables/fruits saw steady increase of c.5%+ CAGR, indicating shift towards vegetables and fruits cultivation.

Exhibit 63. Production of Fruits and vegetables ahead of the food-grain over the year



Source: NSSO

However, prices are quite volatile even for cash crops. In dairy and poultry as well, we have seen wide variations across regions and prices have been volatile (for example dairy prices have declined in Karnataka, while costs have remained same or increased). In poultry as well, prices have been very volatile leading to uncertainty in final output to a farmer.

Mechanisation – Steady long term trend

The trend of long term mechanization remains intact, though it varies widely across states,

Rural areas are witnessing an increased usage of mechanization and soli testing to improve the productivity of the crop

While we acknowledge the sluggishness in rural demand, our interaction with farmers during the trip reposed faith in structural factors leading to farm mechanization –

a) Increasing use of quality fertilizer/pesticides/seeds (which require better soil preparation, uniform distribution of seeds/pesticide etc.),

b) Rising labor cost,

c) Urbanization (leading to labor shortage),

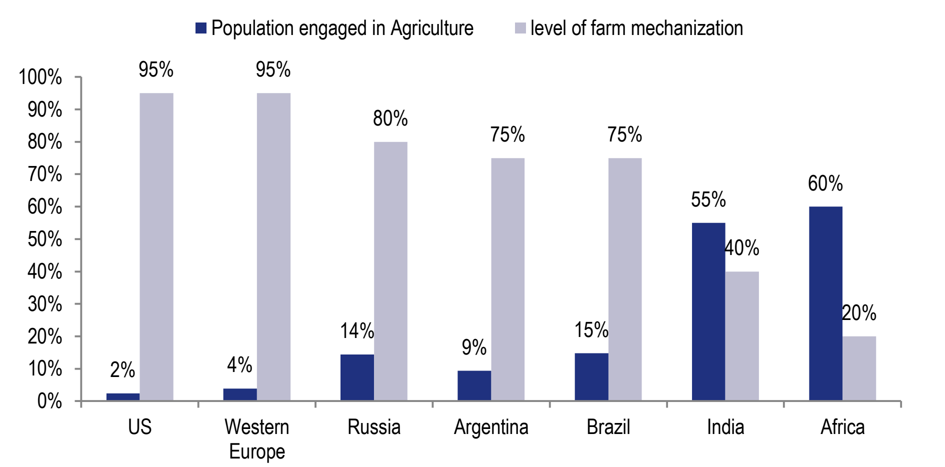
d) Increasing rural prosperity,

e) Increasing access to finance, and

f) Increasing commercial usage of tractors.

The chart below shows the direct correlation between urbanization (people engaged in agriculture) and farm mechanization globally.

Exhibit 64. Population engaged in agriculture has a direct correlation with mechanization levels across the world



Source: Ministry of Agriculture, Government of India.

Box 13: LASER land levelling in Punjab – growing farm mechanization

What is LASER Leveling?

As per studies, a significant (20-25%) amount of irrigation water is lost during its application at the farm due to poor farm designing and unevenness of the fields. This problem is more pronounced in the case of rice fields. Fields that are not level, have uneven crop stands, increased weed burden and uneven maturing of crops. All these factors lead to reduced yield & poor grain quality. Laser land leveling is leveling the field within certain degree of desired slope using a guided laser beam throughout the field.

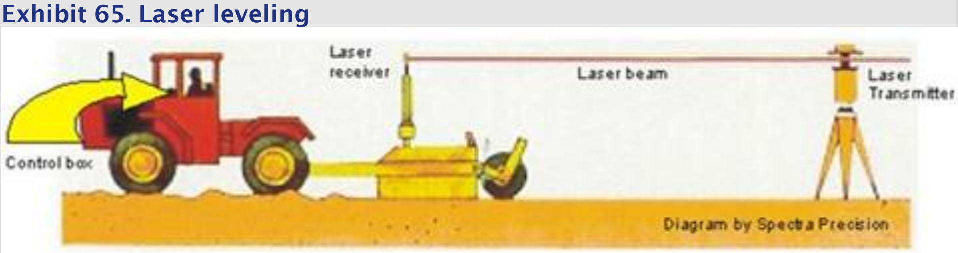
Benefits of laser levelling:

- Saves 25-30% of water
- Improves crop establishment and improves Yield
- Reduces weed problems
- Improves uniformity of crop maturity
- Decreases the time to complete tasks
- Reduces the amount of water required for land preparation

Government subsidy:
Punjab government provides one time financial assistance to the extent of 50% of the cost of the machine (maximum of Rs150k).

What we saw on the ground: As per interaction with the farmers and also secondary data sources, Laser levelers have been well adopted in Punjab. This once again highlights increased mechanization in Punjab, driven by focused government efforts. Going forward, we believe Farm mechanization will continue to increase as farmers use better inputs (thereby requiring more measured inputs) and labor becomes scarce and expensive.

Exhibit 65. Laser leveling



Source: JM Financial

Trend across sectors

Automobiles

Our trip to India's key rural belts over the past few weeks (2nd in the 'Rural Safari' series, 2015) echoed weak demand environment in general across consumption baskets. The rural income has been hit by a) deficient rainfall (second successive year), b) weak/lower crop realization to farmers, c) slowing momentum in land prices (hurting wealth impact theory seen in the last few years), d) crop damage due to pests/infection in certain markets (like cotton in Punjab, soybean in MP, etc), and e) slower-than-expected pick up in government spend/construction activities. We see limited chances of any meaningful demand recovery in the near term given the a) subdued agri commodity prices, b) risk to rabi crop from diminishing water reservoir levels, c) not an encouraging pick-up in construction/infra activities. Consequently, we believe PV and 2-wheeler demand in rural markets would continue to stay weak, while tractor recovery would take longer-than-expected (possibly by 1QFY17).

Having said this, our trip reassures our belief in the long-term demand potential and growth drivers of automobiles in the rural/semi-urban India. Data from across the world shows a direct correlation between urbanization and farm mechanization (see exhibit 63) and given the urbanization trends in India, we expect tractor volumes to grow at a healthy clip over medium-long term. Similarly, given the structural drivers (like greater aspirations, growing income, better infrastructure, and lower penetration) in place, we see strong growth opportunities for both PV and 2-wheeler players. Further, our interaction with auto companies indicate that they continue to focus on distribution/marketing set-up in the rural India, highlighting their commitment to the opportunity called 'Rural India'.

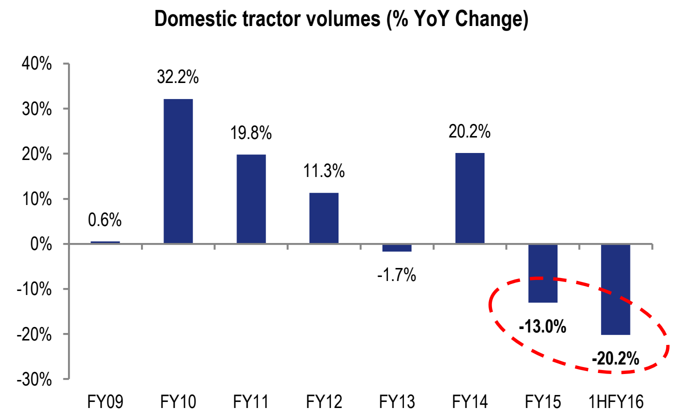
Tractors

Weak farmer sentiments and lower income levels have led to declining sales of automobiles including tractors, PVs and 2-wheelers

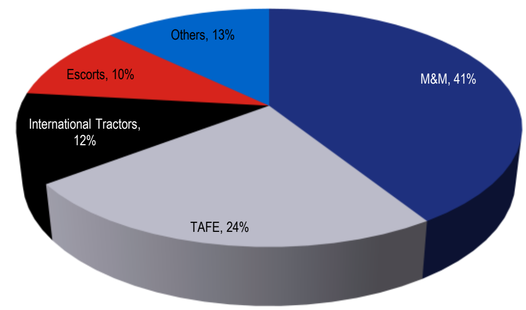
FY16 tractor demand impacted by multiple factors: Despite a low base (13% decline in FY15) 1HFY16 tractor sales have declined by 20%, impacted by deficient rainfall, lower crop realization, soft construction & allied activities and changing crop patterns. We observed changing crop patterns in certain locations, with farmers shifting towards cash crops like vegetables since traditional crops like paddy demands standing water. This, in turn, impacted tractor usage as vegetable farming requires lower tractor usage. On the other hand, tractor volumes have seen some benefit from a) start of mining in few states like MP/Punjab, and b) decline in diesel prices (has benefitted tractor owners who rent it out). However, above mentioned factors were not significant enough to counter weak rural income and even weaker sentiments.

Exhibit 66. Tractor volumes have declined sharply in last few months

Tractor volume trend



Domestic Market share (1HFY16)



Source: Crisil, JM Financial

Exhibit 67. Mechanisation is increasingly replacing labour, especially in progressive states like Punjab

Source: JM Financial

Tractor demand still depends on monsoons in many markets: While we see little risk to medium-long term potential of tractor volume growth, we gather that tractor demand still has a reasonably high dependence on monsoon in many parts of rural India, given that c.53% of cropped area is dependent on monsoons for its irrigation needs. Further, given agriculture's dominant position in rural economy, divergence in actual rainfall not only hits agri income but also non-agri income, exerting more pressure on customers' buying power. In prevailing environment, we expect tractor volumes to stay weak over the next 3-6 months, given **a)** Kharif production drop YoY, **b)** subdued agri commodity prices, and **c)** weak sentiments. During a recent analyst interaction, India's largest tractor maker 'M&M' indicated that tractor industry volumes may decline by c.5% in FY16, even as 1HFY16 sales are down 20% YoY. This translates into a strong 15% YoY volume growth in 2HFY16. However, given our recent interactions with stakeholders from rural India across the country, we remain more cautious and expect industry volumes to decline by c.8-10% in FY16.

Strong probability of recovery in FY17: While we acknowledge dependence of agriculture on monsoon, we see significant probability of tractor volume recovery from FY17, backed by a) low base, b) increasing government focus on rural infrastructure, c) revival in mining/construction activities, and d) good monsoons (in the last 50 years monsoons have never failed for three consecutive years).

Passenger Vehicles

PVs are still an aspirational buy posing huge market opportunity but near term outlook remains weak

PVs remain an aspirational purchase: Our recent interactions with stakeholders in rural India once again highlighted the aspirational value of passenger vehicles. Further, with most smaller cities and villages having very little public transport, a personal vehicle is also a key medium of transport (unlike urban cities, where public transport can still substitute car ownership).

Near term outlook weak, although companies stay focused: Our interaction highlighted that subdued agri performance in recent few quarters has negatively impacted rural demand and it is expected to remain weak for next couple of quarters as well. However, we did not see any slowdown in marketing efforts from car manufacturers, with almost all companies introducing new schemes/distribution channels to extend their network and brand penetration. Consequently, we believe contribution of rural markets in overall PV sales will continue to increase over medium-long term

Box 14: Tata Motors – Project Neev

Few years back, Tata Motors started working on 'Neev' initiative. The idea was to target smaller towns and villages with differentiated distribution strategy. Starting from three states, the initiative is now spread to c.11 states, covering c.60% of the market. Some of the salient points of this are as follows –

- The project covers only areas with population of less than 50,000
- Five thousand out of the 6,000 Tata Gram Mitras involved in the Neev project are freelancers (Village youth, teachers, mechanics etc.), thereby keeping the staff costs under check.
- Further, the initial investment under this initiative is also very low, compared to a full fledge 3S dealership.

This initiative has helped Tata Motors generate sale from new markets, especially in states like MP, where a large portion of sales already comes from non-urban centers.

Box 15: Maruti Suzuki – R outlets

During FY15 Maruti Suzuki commissioned 289 'R-Outlets', a dealer format targeting semi-urban and rural markets. Currently Maruti has four distinctive distribution channels for various markets –

- NEXA outlets: Recently introduced outlets for premium segment.
- Full fledge outlets: Meant for urban cities with an average sales of +75 vehicles per month from each outlet.
- E-outlets: Targeted at mid-tier cities with average sales of 25-50 vehicles per month from each outlet.
- R-Outlets: Targeted at smaller cities and rural segment with average sales of 10-20 vehicles per month from each outlet. Unlike other formats, R-outlets have smaller footprint (just enough to display 1-2 vehicles at any point of time). Also they are not required to have service bays, with the service needs being catered from mobile service vans or other authorized service stations.

Despite recent sluggishness in rural India, Maruti remains focused on expanding its base in rural hinterlands.

Mahindra/Maruti preferred names; Hyundai creeping up: Mahindra/Maruti remain the most preferred brands in rural hinterlands, supported by their extensive network. Among other companies, while Hyundai is also gaining significant traction in rural markets, Tata Motors seems slipping in almost all segments (except Ace which continues to dominate its segment). Our interaction also highlighted growing preference for SUVs with products like Renault Duster/Ford Eco sport gaining traction. This once again highlights the opportunity for a player like Maruti in domestic SUV segment.

Penetration and brand value of Maruti/Mahindra remains strong while Hyundai is gaining ground in rural

Exhibit 68. MSIL/Mahindra remain most preferred brands; Hyundai also catching up

Source: JM Financial

Exhibit 69. Mahindra gaining traction in LCV segment as well

Source: JM Financial

Two Wheelers

2-wheelers remain most affordable/preferred personal vehicle in rural India: 2Ws remain preferred choice of transport for rural India and we see little risk to this domination given a) lack of public transport, b) affordable acquisition/purchase cost, and c) low running/maintenance cost.

Box 16: Rural does not mean low tech - Hero Splendor iSmart

Helped by 'Splendor', Hero dominates the executive motorcycle segment in India, a segment which accounts for c.65% of domestic motorcycle volumes. Splendor variants are not only well accepted among urban customers but have built strong brand image among rural customers as well. In fact, compared to other 150, 220cc bikes from Hero, Splendor is far more popular in rural areas.

Considering its popularity in rural markets, one may be tempted to write off 'Splendor' as a low technology product. However, going by recent launches, 'Splendor' variants are anything but a low technology product.

Splendor iSmart – Not a low technology product

One of the most recent launches, Splendor iSmart is World's most efficient bike returning c.103kms to a liter of petrol (c. 242 miles per gallon). Among other things the bike boasts of –

i3s Technology (idle Stop Start System): The Idle Stop Start System turns off the engine after waiting for specific time (say c.5 seconds) whenever the bike is stationary (for e.g. at a traffic signal) and then restarts the engine automatically as soon as one presses the clutch. This prevents running of the engine in idling when not needed and thus improves mileage.

Tubeless, alloy tyres: Improves reliability of tyres, making them less prone to punctures, especially in hot weather.

Power start: Helps reduce drive fatigue, especially if bike is to be ridden for very short distances.

Hero continues to dominate, Honda/TVS gaining traction: The rural trip, once again highlighted the strength of Hero brand in rural hinterland (especially in executive segment). In particular, there seems to be little threat to Hero's famed twins – 'Splendor' and 'Passion', at least in near-medium term. While it continues to dominate the rural markets, our interactions with the market constituents also highlighted efforts being made by competitors like Honda 2W and TVS Motor to gain traction in rural markets. Over a longer period of time, we see creditable risk to Hero dominance in rural markets, as players like Honda 2W and TVS Motor expand their product range and distribution network.

Hero dominates the 2-wheeler segment due to its brand strength with huge presence of Splendor and Passion bikes

Exhibit 70. Hero continues to dominate, but other companies are also making inroads in rural India

Source: JM Financial

Scooters gaining popularity over motorcycles: Our successive rural trips highlight increasing popularity of scooters in rural segment as well and we expect the trend to continue going forward as well. 2W companies have also sensed the opportunity in the scooter segment, with companies like Hero, TVS, Yamaha expanding their product range and distribution footprint.

Royal Enfield seizing aspirational buying opportunity: Royal Enfield remains one of the most aspirational brands in 2Ws. While RE has limited distribution footprint in rural hinterland, RE management is working hard to expand its distribution strategy and we believe medium-long term sales from rural India would be significant growth driver for RE. While mass market bikes have been unable to compete with RE due to its cult brand and increasing usage of plastics, products from other cult brands like Harley Davidson have been unable to come anywhere close to RE in terms of pricing.

People show aspirations to buy Royal Enfield by gaining a cult brand status

Exhibit 71. Royal Enfield remains one of the most aspirational brands in 2W space

Source: JM Financial

Consumer Goods

A clear conclusion in our recent rural trip is that farmer sentiment has turned quite subdued. There is an evident concern of poor monsoon having an impact in the form of lower yields and lower net sown area. Furthermore, lower/flattish crop prices also imply that rural incomes could be flattish with a downward bias. However, structurally rural opportunity remains attractive as aspirations are still building up and presence of unbranded goods especially in categories like home care and packaged foods remains high. Even, in some low tier towns, scope for developing aspirations appear high, especially for discretionary products. Out of home consumption and experience with e-commerce also remains limited. For consumer stocks, however, we see limited upside in the near term given high valuations and expectations of subdued rural demand.

With stress in rural income, consumption spend is under pressure. Especially discretionary spending is expected to witness a sharper impact

- **Constrained income to impact rural consumption spends in the near term:** In our recent rural trip, the most evident feedback has been concerns of farmers related to the uncertainty of incomes in near future on account of poor monsoon. The reasons range from fall in prices of crops, lower yields to lower net sown area on account of poor water availability. The most important source of other income for farmers has been tractor rentals and a decline in net sown area could also constrict cash flows from this source. Constrained income level is likely to impact consumption spends in the near term and hence lead to lower rural growth.

Slowdown in rural consumption is already visible in Consumer Company's volume growth

- **Consumer companies have already cited growth deceleration in rural areas:** In the recent conference calls, consumer companies like HUL, Dabur Marico and Bajaj Corp have cited a visible slowdown in rural growth. Rural growth rates which were trending 1.5-2x urban have decelerated sharply and are now similar to urban growth rates. In our view, given stress on rural incomes, rural growth rates could be subdued or even slowdown further in the near term.

- **Discretionary rural consumption might witness a sharper impact:** Rural demand for consumer goods could exhibit a different pattern for staples and discretionary. Given incomes of rural consumer, though lower YoY, would remain at reasonable levels, the impact on staples would manifest largely in form of lower growth on account of slowdown in premiumization. However, discretionary purchases could be under pressure. Two farmers, in fact, admitted to postponing durable purchases as well as painting of interiors on account of uncertain income levels in the current year.

- **Brand penetration and premiumization opportunities are immense:** Most farmers we spoke to own lands in excess of 5 acres and hence had income levels in excess of Rs0.3-0.4mn. While affordability remains high, awareness and accessibility still have scope to improve. These people have moved on to branded goods like Santoor and Cinthol for body wash, Close-Up and Colgate for toothpaste but were still using unbranded products or regional brands in categories like home care and packaged foods. Their preferences for non-branded products were largely driven by low levels of awareness, competitive pricing and also limited access.

- **Scope for driving aspirations remains high in rural areas:** Few rural farmers we met were still living in a closed environment. Despite having high income levels, their consumption expenditures were quite limited. Mr G. Kotaya who owns 15 acres of land has never had packaged foods and never heard about Maggi. His aspirations are limited to educating his children and he does not own air conditioners as he believes this would impact his motivation to work in fields. Similarly, Mr Srinivasan from a village in Nalgonda, does not purchase branded products produced by multi-nationals. His purchase decisions are based on products which offer high value and reliability like a Hero Splendour in bikes. However, his son, who is studying in town nearby, has different aspirations and has recently purchased a Bajaj Pulsar. This, in our view, clearly implies as people have increased interactions with external environment it would help in driving aspirations and in effect premiumization for consumer products (as affordability of branded product is not the real concern).

Driving aspirations have increased in Rural india with people preferring to buy a 2-wheeler for their daily commuting.

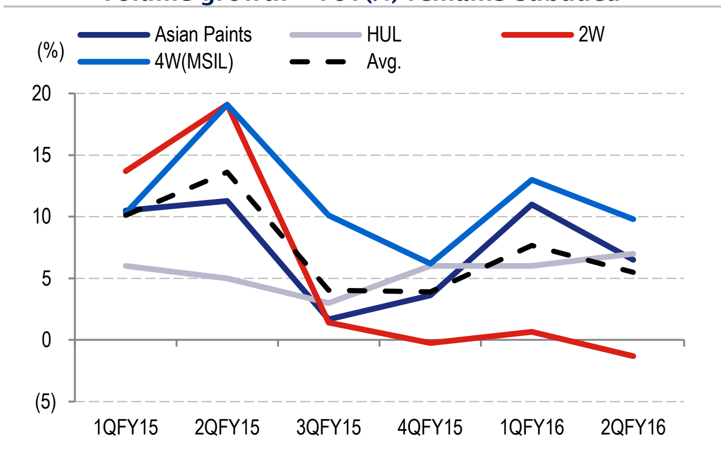
- **Even a few low tier cities presents scope for increased aspirations:** In our visit to smaller towns viz. Narasaropeta and Nalgonda, we had a chance to interact with salaried individuals. We found a major difference in aspirations even within these towns. In Nalgonda, most people we met were purchasing branded apparels and owned expensive smartphones (including Iphone). However, in Narasaropeta, people purchased local brands in apparels and also owned low priced mobile phones. This implies driving aspirations is not limited to rural areas but smaller towns also present huge opportunity.

- **Structural story for paints remains intact:** In our visit to these rural areas, people clearly appeared to be incurring increased expenditure on painting especially on external surfaces. Also what surprised us was that frequency of painting was much higher for these rural farmers relative to their urban counterpart. Mr Rathnasamy from Polachi, a coconut farmer owning 10 acres of land, gets the exterior of his house painted every year while the interiors are painted every 4 years. Painting needs are largely driven by occasions – festive season, marriage etc. On brands, he is more biased towards Asian Paints but likes Berger as well. As per him, as the income levels increase, most rural farmers resort to higher frequency of repainting which augurs well for paints demand.

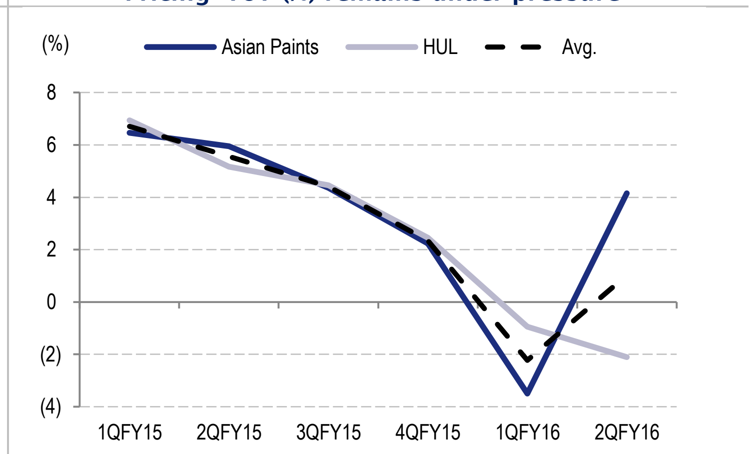
Higher frequency of painting will remain a positive for paint companies

Exhibit 72. Our interactions indicated rural consumers deferring large purchases, is corroborated by volume growth and pricing trend across consumer companies

Volume growth – YoY(%) remains subdued



Pricing -YoY (%) remains under pressure



Source: Company, Note: Pricing for 2w: observed 4-8% discounts + benefits on different models, 4w: observed 5-10% depending on models excluding new launches

Box 17: A simplistic lifestyle of a large farmer in Guntur

Mr G. Kotaya (in Narasaraopet, Guntur, second person from right) is a prime example of a person with high affordability but very low aspirations. He owns 15 acres of land with plantations of cotton, paddy and spices. He spends most of his time in fields and owns a tractor. He and his friends don't own air conditioner as they fear it would impact their motivation to work on fields. In the near-term, he expects incomes to be slightly lower as lower yields and net sown area in paddy on account of poor monsoon would be partially offset by higher realizations for cotton. He does not have any expectations from government. While he does not use any branded foods, he still purchases Horlicks or Boost for his children.

Family Members: Two children, wife and mother.

Family Income: Approximately Rs1mn/year.

Brands used: Santoor for body wash and Colgate toothpaste.

Packaged Food: Never heard of Maggi; does not eat pizzas and burgers.

Borewell: Present

Vehicles: Owns a Hero Splendour

Aspirations: Wants to get his children well-educated. No personal aspirations.

Exhibit 73. Meeting with farmers

Source: JM Financial

Exhibit 74. Regional brands like Oorvasi dominates the SKU's of general trade while ariel and rin also exist; Packaged foods are largely regional brands; Chik and Clinic Plus in shampoos, Close-up in toothpaste and Comfort fabric conditioner were also present

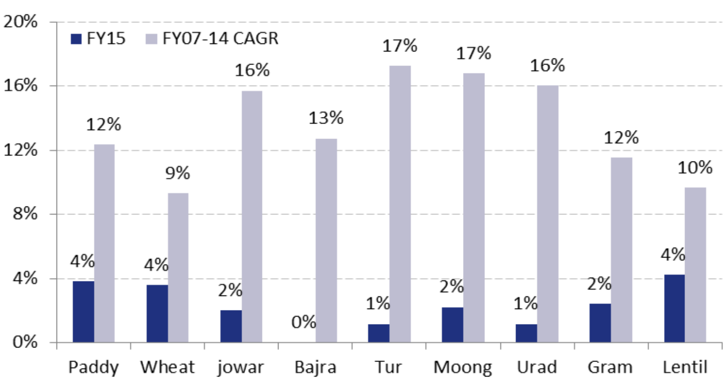
Source: Company, JM Financial

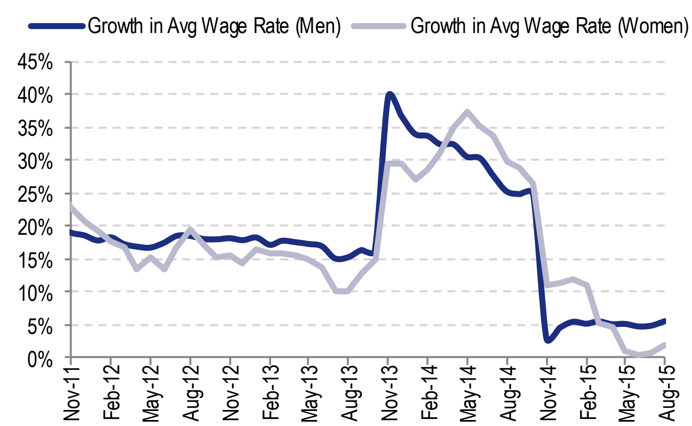
Rural NBFC - Rural market could remain sluggish

Rural economy facing multiple challenges in near term due to weak monsoon, marginal increase in MSP and lack of infra activities:

Rural income has slowed meaningfully over the past 1-1.5 years, due to slowing National Rural Employment Guarantee Scheme (NREGS) income, decline in wholesale prices of some crops, minimal increase in the Minimum Support Price (MSP) and slowdown in infrastructure related activity in rural areas. Road construction has slowed significantly and hence alternative use of tractors has also fallen. Weak monsoon and rural wage growth are expected to impact agriculture and the allied sector in 2H2015. The 14% rainfall deficit in the southwest monsoon compared to long period average (LPA) has affected Kharif crop. Dip in water table after a weak monsoon (especially in Telangana and Maharashtra) could lead to a further drop in the Rabi net sown area as well. This coupled with other factors such as a) marginal increase in MSP, b) absence of infra activities, c) pressure on yields due to crop failures, and d) stagnating real estate prices led to strain on cash flows of farmers, impacting their repayment ability. Reduced intervention by the government in the labour market has led to significant deceleration in wage growth resulting in significant moderation in rural wage growth to 6% YoY in Aug'15 from the average growth of 25% YoY in Aug'14.

Exhibit 75. Trend in MSP and rural wages





Source: Company, JM Financial.

Pick up in infra activities will be key growth driver for rural India

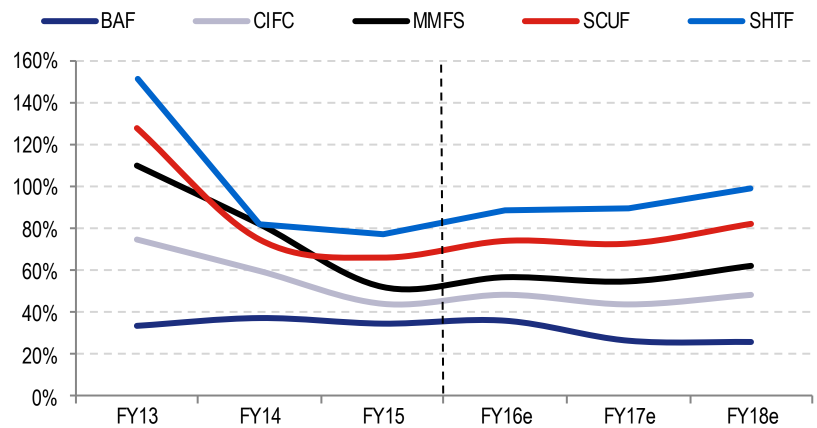
Going forward, we believe normal rainfall should support crop output and improve crop yields. Further government spending in rural India coupled with pick up in infra activities should improve non-agri income for farmers. Thus FY16 will be a year of consolidation and pickup in rural economy if any could be seen only in FY17.

Estimates remain conservative; expect some pickup in AUM growth only in FY17

With weakness in agri income and farmer sentiment, credit growth in rural cities remain weak with growth expected to return only in FY17

We expect FY16 to be a year of consolidation and our estimates remain conservative. e.g. In case of Mahindra Finance (MMFS) we are factoring 8% growth in AUM for FY16E. However in FY17/18E we are factoring pick up in AUM growth at 11%/14%. For NBFCs under coverage we expect 14-26% growth in AUM in FY18E as shown below.

Exhibit 76. AUM Growth trends in NBFCs under coverage



Source: JM Financial

Prefer CV and urban financiers with BAF and SHTF as top pick

With pick-up in rural areas getting delayed we prefer urban financiers

We believe pick up in rural India will lag pickup in manufacturing and industrial activities. Thus we expect urban and CV financiers to be a key beneficiaries of improvement in economic activity. We prefer Bajaj Finance and Shriram Transport (SHTF) as top pick in CV financing space followed by Cholamandalam finance (CIFC). We like MMFS as a play on rural India revival from a medium term perspective.

Exhibit 77. Valuation Comparables

	ROA (%)				ROE(%)				P/B				P/E			
	FY15	FY16E	FY17E	FY18E	FY15	FY16E	FY17E	FY18E	FY15	FY16E	FY17E	FY18E	FY15	FY16E	FY17E	FY18E
SHTF	2.3%	2.3%	2.3%	2.4%	14.1%	14.6%	15.3%	16.1%	2.2	1.9	1.7	1.5	16.2	14.0	11.8	9.9
MMFS	2.5%	1.9%	2.1%	2.4%	15.5%	11.9%	13.1%	15.0%	2.3	2.1	1.9	1.7	15.5	18.5	15.4	12.2
SCUF	3.2%	3.3%	3.3%	3.3%	16.0%	14.6%	15.3%	16.2%	2.8	2.5	2.2	1.9	20.6	18.1	15.4	12.8
BAF	3.1%	3.1%	3.1%	3.1%	20.4%	19.4%	18.7%	19.7%	5.5	3.8	3.2	2.7	29.6	23.8	18.4	14.8
CIFC	1.9%	2.1%	2.3%	2.4%	17.5%	17.0%	16.7%	18.2%	3.3	2.6	2.3	2.0	20.2	17.8	14.6	11.5

Source: Company, JM Financial, Valuations as on 13th November 2015

Box 18: Better rainfall and farm income could lead to higher growth - Mahindra Finance's Nagpur Branch visit

FY15 loan growth was c.10% but it has been flat YTD FY16. They are expecting very strong growth in 2HFY16 helped by good farm income. Key takeaways are:

Procurement: Farmers generally sell to private traders, but in case of a demand shortfall, government procures the remaining crop. So, little risk of farmers being saddled with crops after harvest.

Shift towards cash crops/dairy: Last few years saw increasing trend of famers moving towards vegetables and dairy to substitute their farm income.

Crop/production this season: This region has received better rainfall this year compared to last year. Farmers are expecting good cotton crop this year. This is expected to be best ever crop in last three years. Also rates are expected to remain stable.

Loan waiver: Unlike past few years when government waived off entire loans, this time only interest has been waived (to compensate for last crop which was impacted by unseasonal rains).

Government schemes: Schemes like Jan Dhan, Insurance and subsidy for construction of toilets are being appreciated by farmers. Implementation of DBT for gas has helped reduce black marketing of gas cylinders. Also government has been stricter in distribution of subsidized fertilizers.

Box 19: Declining farmer income and crop production could impact asset quality - Mahindra Finance's MP and Punjab Branch visit

With weakness in rural income, repayment ability is under stress

So far, MMFS NPLs concentration which was more in southern state is also spreading towards northern states due to factors such as poor rainfall, declining farm income and reduction in crop production. MP, Punjab and Rajasthan were good growth states for MMFS, but they are now seeing some stress. In MP both agri and non-agri income is expected to decline, but state Government is active in finding solution.

MP Summary

Crop production: Soya Production could be down by up to c.30%+. Even pricing is under pressure. Also private merchants who used to buy upfront/in advance from farmers are not doing so this year. Hence, farmers' savings are getting wiped out.

Government efforts: State government is helping farmers by providing pesticide, information etc. The pesticide is given free by Government, but in some areas due to lack of availability, black market sales do happen.

Focus of state Government is entirely on farming in MP and away from infrastructure. Hence infra work has been impacted. There have been only announcements for the projects, but not much implementation.

Indore visit Summary

Competition intensifying: Current situation is such that customers are to be wooed as competition has intensified. Competition has increased especially in Tractor financing due to higher IRRs. Credit risk exists but no willful defaulter in Indore.

Disbursements was down 19% by 1H16 dragged down by M&M sales.

HCV picking up: Demand for refinancing for cars and tractors is steady. HCV demand has seen strong pickup.

Sharp decline in growth: Incremental contracts have seen sharp decline (4000 in 1HFY16 vs 1HFY15- 6000).

Increasing NPL levels: NPL levels have also increased to c.8% of contracts vs c.6% of contracts as of Mar 15.

Competitive Interest rates: Tractor interest rates have remained stable YoY at 15-19% IRR while Private Banks offers 14-16% IRR. In car financing, PSU banks are very aggressive (SBI, BOI -12-15% market share).

80% famers in the region have dual sources of income. Mostly agri + dairy.

Compensation: Based on the losses incurred, farmers are compensated. But this Feb-Mar wheat season, farmers have not been compensated.

Box 20: Punjab MMFS branch visit summary (Amritsar)

Profile of the population – Agriculture (30-40%), Self-employed (30-40%) and services (20%)

Growth: Growth for Amritsar branch has been good, driven by new launches of vehicles. In 2014-15, they did 450 cases; in YTD FY16, they have already done 500 cases. Growth has been driven by LMV segment.

Stable NPA trends: Asset quality has remained steady in last 1 year. Out of 2,500 live cases, NPAs have remained between 100-150 cases at any point of time.

Declining agri income: Net income for a farmer is Rs40,000-45,000/acre and it has come down from last year. In good years, it has been up to Rs60-70,000/acre as well.

Exhibit 78. Visit to MMFS branches

Loan Mela outside the MMFS branch

MMFS branch function

Source: Rural Safari

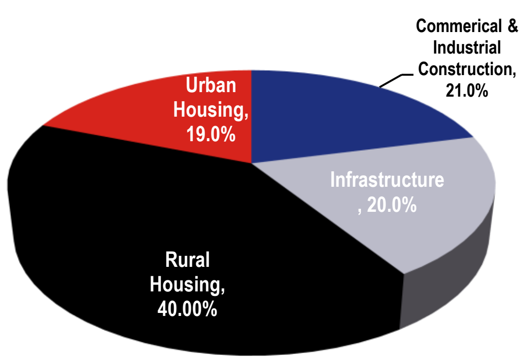
Cement - Rural market could remain sluggish

Rural housing is an important driver of cement demand, contributing to c.40% of the total demand. Rural housing shortfall stood at c.43.7mn units as per 12th Five Year Plan and increasingly there has been a shift of trend towards pucca houses. We believe rural economy will continue to be a significant driver of cement demand in India as we draw comfort from new government's renewed focus on 'Housing for All by 2022' and development of concrete roads. Besides government schemes promoting rural housing, rural demand is driven by wage levels, rainfall and interest rates.

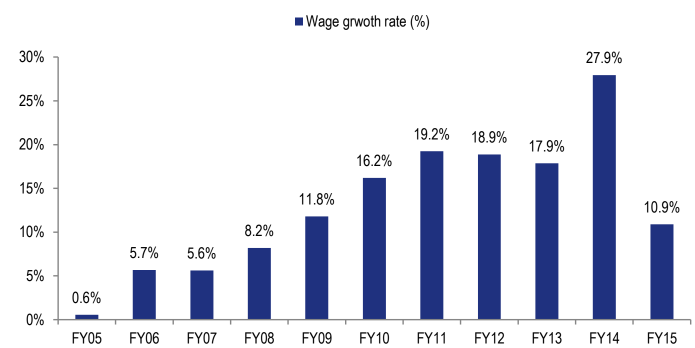
In the last 2 years, demand from the rural housing side for cement consumption slowed considerably given weak monsoon and a general slow-down in the rural economy. We expect a revival going forward on back of (1) pent-up demand; (2) multiplier effect of infrastructure investment activity which will help boost earnings of labor force; and (3) increased impetus on rural projects from central government.

Exhibit 79. Cement demand – Rural demand is an important demand driver
Rural housing contributes c.40% to the cement demand; rural infrastructure is an additional driver

Rural housing continues to form a c.40% of the demand



Rural wage rate continues to increase



Source: CRISIL, JM Financial.

Key demand drivers for cement sector from rural economy:

1. **Lowering of interest rate to stimulate rural housing demand:** In the last year or so, RBI has be reducing interest rate and expectations are that interest rates will further decline from here with moderation of inflation. While rural housing market is less dependent on credit, we believe reduction in interest rates should drive cement demand in rural areas also on back of higher liquidity and increased infrastructure activity.

2. **Few Government schemes providing push to rural demand:**

a) Indira Awaas Yojna (IAY) (1985): It is a public housing scheme for BPL households in rural areas under which financial assistance is provided for house construction. The financial assistance provided for new construction is Rs70k per house for plain areas and Rs75k for hilly/difficult areas.

b) Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS) (2006): Enforced by law it aims to guarantee 'right to work' and ensure livelihood security in rural areas by providing at least 100 days of wage employment in a financial year to every household where adult members volunteer to do unskilled manual work. The wages per day have been notified statewise, ranging from `100-200/day.

c) Interest subvention on crop loans (2013): Farmer who repays short term crop loans on time is given interest subvention of 4%.

d) Govt. Financial Institutions: National Housing Bank (NHB), National Bank for Agriculture and Rural Development (NABARD) and Housing and Urban Development Corporation (HUDCO) provide support for rural housing. NHB runs schemes like Rural Housing Fund (RHF), Golden Jubilee Rural Housing Refinance Scheme (GJRHFS) and Productive Housing in Rural Areas (PHIRA). NABARD extends refinance to banks for provision of loans to individuals/cooperative housing societies. HUDCO has been supporting by extending loan assistance for weaker sections at concessional rates. Of the total c.15mn housing units supported by HUDCO, over c.9mn units have been constructed in rural areas.

3. **Uptick trend towards pucca houses:** Though the number of houses has grown at a modest rate of 2%, trend towards pucca housing is distinctly visible with growth rate being higher for houses with pucca roof, wall and floor. This should lead to higher cement demand.

Exhibit 80. India – Pucca houses

Growth in pucca houses is higher than the growth in total number of houses

	2001 Census			2011 Census		
	Total	**Rural**	**Urban**	**Total**	**Rural**	**Urban**
Total number of census houses (mn)	249	178	72	305	207	98
Pucca roof houses (%)	48	37	75	62	52	83
Pucca wall houses (%)	59	49	84	67	58	88
Pucca floor houses (%)	44	29	83	54	37	88
Growth (%)						
Total number of census houses				***2.0***	***1.5***	***3.2***
Pucca roof houses				***4.7***	***5.1***	***4.2***
Pucca wall houses				***3.4***	***3.2***	***3.8***
Pucca floor houses				***4.0***	***4.2***	***3.9***

Source: Census, JM Financial.

Annexure

Exhibit 81. Per acre farm economics for Rice – Costs rising faster than Realizations

	2010	2011	2012	2013	2014	2015	2016
Yield Quintal/Acre	12.8	13.5	14.5	14.9	14.6	14.6	14.6
Realization/Quintal	1,030	1,030	1,110	1,280	1,345	1,400	1,450
By-product	1,136	1,231	1,463	1,571	1,665	1,698	1,663
Total Realization	**14,358**	**15,162**	**17,508**	**20,600**	**21,295**	**22,131**	**22,825**
%YoY	*8.3*	*5.6*	*15.5*	*17.7*	*3.4*	*3.9*	*3.1*
Human Labor	2,559	3,081	3,296	3,910	4,515	5,000	5,512
Machine Labor	1,094	1,256	1,364	1,658	1,954	2,197	2,197
Animal Labor	621	649	840	917	986	1,038	1,090
Seeds	636	649	697	749	793	810	793
Fertilizers & manure	1,049	1,112	1,419	1,594	1,629	1,657	1,685
Pesticides & Insecticides	221	246	296	312	324	349	351
Water & Electricity	479	397	480	585	724	608	626
Working Capital	208	231	262	282	299	305	298
Miscellaneous	6	7	6	6	7	7	7
Total Cost	**6,873**	**7,629**	**8,660**	**10,012**	**11,231**	**11,971**	**12,559**
%YoY	14.2	11.0	13.5	15.6	12.2	6.6	4.9
Total Profit	**7,485**	**7,533**	**8,848**	**10,588**	**10,064**	**10,160**	**10,266**
Realization/Cost ratio	**2.09**	**1.99**	**2.02**	**2.06**	**1.90**	**1.85**	**1.82**

Source: CMIE, Cost of Cultivation study, JM Financial, Farmer Interactions, Yield adjusted for Paddy instead of Rice with ratio of Rice/Paddy at 0.67, Relevant WPI indices used

Exhibit 82. Per acre farm economics for Wheat – Costs rising faster than Realizations

	2010	2011	2012	2013	2014	2015	2016
Yield Quintal/Acre	11.5	12.1	12.9	12.6	12.4	12.4	12.4
Realization/Quintal	1,100	1,120	1,285	1,350	1,400	1,450	1,525
By-product	2,464	2,958	3,341	4,068	4,311	4,398	3,693
Total Realization	**15,104**	**16,504**	**19,863**	**21,094**	**21,631**	**22,337**	**22,560**
%YoY	1.6	9.3	20.4	6.2	2.5	3.3	1.0
Human Labor	864	986	1,155	1,347	1,532	1,679	1,832
Machine Labor	1,619	1,894	2,081	2,328	2,557	2,732	2,910
Animal Labor	275	234	167	149	137	128	121
Seeds	842	853	871	935	991	1,011	849
Fertilizers & manure	937	1,012	1,360	1,529	1,562	1,589	1,594
Pesticides & Insecticides	114	107	110	116	120	129	90
Water & Electricity	1,032	1,040	1,261	1,535	1,901	1,596	1,624
Working Capital	178	192	219	235	249	254	214
Miscellaneous	6	7	5	6	6	6	5
Total Cost	**5,867**	**6,325**	**7,229**	**8,179**	**9,055**	**9,125**	**9,237**
%YoY	7.4	7.8	14.3	13.1	10.7	0.8	1.2
Total Profit	**9,237**	**10,178**	**12,634**	**12,915**	**12,576**	**13,212**	**13,322**
Realization/Cost ratio	**2.57**	**2.61**	**2.75**	**2.58**	**2.39**	**2.45**	**2.44**

Source: CMIE, Cost of Cultivation study, JM Financial, Relevant WPI indices used

Exhibit 83. Per acre farm economics for Onion – Profitable but volatile earnings

	2010	2011	2012	2013	2014	2015	2016
Yield Quintal/Acre	65.1	57.5	65.2	64.7	64.2	64.2	64.2
Realization/Quintal	1,161	1,623	1,068	1,314	2,727	1,914	2,687
By-product	299	447	490	520	530	519	519
Total Realization	**75,845**	**93,804**	**70,096**	**85,561**	**175,551**	**123,329**	**172,939**
%YoY	0.8	23.7	(25.3)	22.1	105.2	(29.7)	40.2
Human Labor	4,024	4,669	7,461	9,687	12,085	14,165	16,487
Machine Labor	1,008	1,177	1,721	2,520	3,491	4,426	5,554
Animal Labor	501	513	457	388	340	310	284
Seeds	2,313	5,365	3,530	3,790	4,017	4,098	4,012
Fertilizers & manure	1,333	2,601	2,698	3,032	3,099	3,152	3,205
Pesticides & Insecticides	301	362	618	651	677	729	732
Water & Electricity	1,240	1,301	1,323	1,611	1,995	1,675	1,726
Working Capital	335	500	557	598	634	646	633
Miscellaneous	-	-	12	12	13	13	12
Total Cost	**11,054**	**16,487**	**18,378**	**22,291**	**26,349**	**29,214**	**32,646**
%YoY	(17.0)	49.2	11.5	21.3	18.2	10.9	11.7
Total Profit	**64,791**	**77,317**	**51,718**	**63,270**	**149,202**	**94,115**	**140,293**
Realization/Cost ratio	**6.86**	**5.69**	**3.81**	**3.84**	**6.66**	**4.22**	**5.30**

Source: CMIE, Cost of Cultivation study, JM Financial, Relevant WPI indices used

Exhibit 84. Per acre farm economics for Potato – Profitable but volatile earnings

	2010	2011	2012	2013	2014	2015	2016
Yield Quintal/Acre	80.7	91.9	88.0	92.1	92.8	92.8	92.8
Realization/Quintal	1,101	845	788	1,298	1,392	1,876	1,007
By-product	15	-	-	-	-	-	-
Total Realization	**88,778**	**77,697**	**69,360**	**119,572**	**129,160**	**174,039**	**93,403**
%YoY	(20.4)	(12.5)	(10.7)	72.4	8.0	34.7	(46.3)
Human Labor	2,448	3,306	3,240	3,544	3,819	4,026	4,233
Machine Labor	883	1,186	1,753	2,054	2,347	2,580	2,823
Animal Labor	624	403	418	409	402	397	392
Seeds	12,618	7,793	6,540	7,022	7,441	7,592	7,433
Fertilizers & manure	2,656	3,175	3,880	4,360	4,457	4,533	4,609
Pesticides & Insecticides	192	284	353	373	387	417	419
Water & Electricity	1,158	1,187	1,667	2,030	2,514	2,111	2,175
Working Capital	643	542	558	599	635	648	634
Miscellaneous	5	0	1	1	1	1	1
Total Cost	**21,227**	**17,876**	**18,411**	**20,392**	**22,002**	**22,303**	**22,719**
%YoY	50.7	(15.8)	3.0	10.8	7.9	1.4	1.9
Total Profit	**67,551**	**59,821**	**50,949**	**99,180**	**107,157**	**151,736**	**70,684**
Realization/Cost ratio	**4.18**	**4.35**	**3.77**	**5.86**	**5.87**	**7.80**	**4.11**

Source: CMIE, Cost of Cultivation study, JM Financial, Relevant WPI indices used

Exhibit 85. Per acre farm economics for Arhar (Kharif)– Government focus to increase pulse acreage through higher MSP increases

	2010	2011	2012	2013	2014	2015	2016
Yield Quintal/Acre	2.9	2.7	2.7	3.1	3.7	3.7	3.7
Realization/Quintal	2,300	3,000	3,200	3,850	4,300	4,350	4,650
By-product	727	624	922	990	1,049	1,070	1,048
Total Realization	**7,345**	**8,579**	**9,499**	**13,088**	**16,891**	**17,097**	**18,180**
%YoY	21.8	16.8	10.7	37.8	29.1	1.2	6.3
Human Labor	1,728	2,360	2,224	2,804	3,416	4,004	4,516
Machine Labor	760	832	881	1,182	1,539	1,839	2,087
Animal Labor	1,120	1,084	1,184	1,222	1,262	1,278	1,302
Seeds	389	427	422	453	480	490	480
Fertilizers & manure	654	871	688	774	791	804	818
Pesticides & Insecticides	391	549	563	594	617	665	667
Water & Electricity	100	75	130	158	195	164	169
Working Capital	161	194	191	205	217	221	217
Miscellaneous	3	3	7	8	7	6	6
Total Cost	**5,305**	**6,394**	**6,290**	**7,400**	**8,524**	**9,471**	**10,262**
%YoY	33.2	20.5	(1.6)	17.6	15.2	11.1	8.3
Total Profit	**2,040**	**2,185**	**3,209**	**5,688**	**8,367**	**7,626**	**7,918**
Realization/Cost ratio	1.38	1.34	1.51	1.77	1.98	1.81	1.77

Source: CMIE, Cost of Cultivation study, JM Financial, Relevant WPI indices used

Notes

Notes

APPENDIX I

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