

CRISIL Research webinar on Agriculture sector:  
**Silver lining in the dark clouds**

Research

# Presentation flow

CRISIL's DRIP  
Index



Kharif Season &  
Farmer Income



Agriculture  
Industries



Government  
initiatives



Expert Panel  
Q&A





# Key conclusions

As of 19<sup>th</sup> August this year, monsoon is 5% above normal

Sowing is expected to be 2-3% higher on year in 2020 and ~2% above 2017 levels (peak of the last 5 years)

Paddy sowing to increase in eastern states due to reverse migration of workforce, cotton sowing to inch up in north India

Sugarcane, paddy and apple expected to show increase in profits (for farmers), cotton, maize and onion to witness a sharp decline in profitability on-year

Farmer income from cultivation, dairy and MGNREGA (accounting for around 45% of income) to increase by 8-10% on-year

- Monsoon** ○ *Rains in India, normal and most well spread in three years – across time and regions so far. CRISIL's latest DRIP scores highlight some stress in three crops, three states*
- Kharif outlook** ○ *Kharif crop productivity to increase by ~3% with adequate water availability during critical crop growth stages. Output to reach a record high, with an expected 5-6% increase on year.*
- Per hectare profit** ○ *A detailed analysis of 25 key field and horticulture crops indicates per hectare profitability to improve 3-5% on-year for the kharif season 2020, expected to be around Rs 10,000 at C2 cost.*
- Regional outlook** ○ *Eastern states to provide incremental opportunities with healthy growth anticipated in crop profitability, on a low base. Southern and Western states to bear the brunt of lower cotton and maize prices. North India to continue to remain most profitable region for kharif season 2020*
- Agriculture industries** ○ *Agriculture input industries (fertilizer, seeds and pesticides) expected to grow 2-3% on-year in fiscal 2021. Labour shortage and higher mechanization to support 5-7% growth for farm equipment*
- Govt. support** ○ *Government procurement for paddy and effective disbursement of second installment for PM KISAN scheme, to further aid cash in hand of farmers*

## CRISIL's DRIP Index



Kharif Season & Farmer Income



Agriculture Industries



Government initiatives

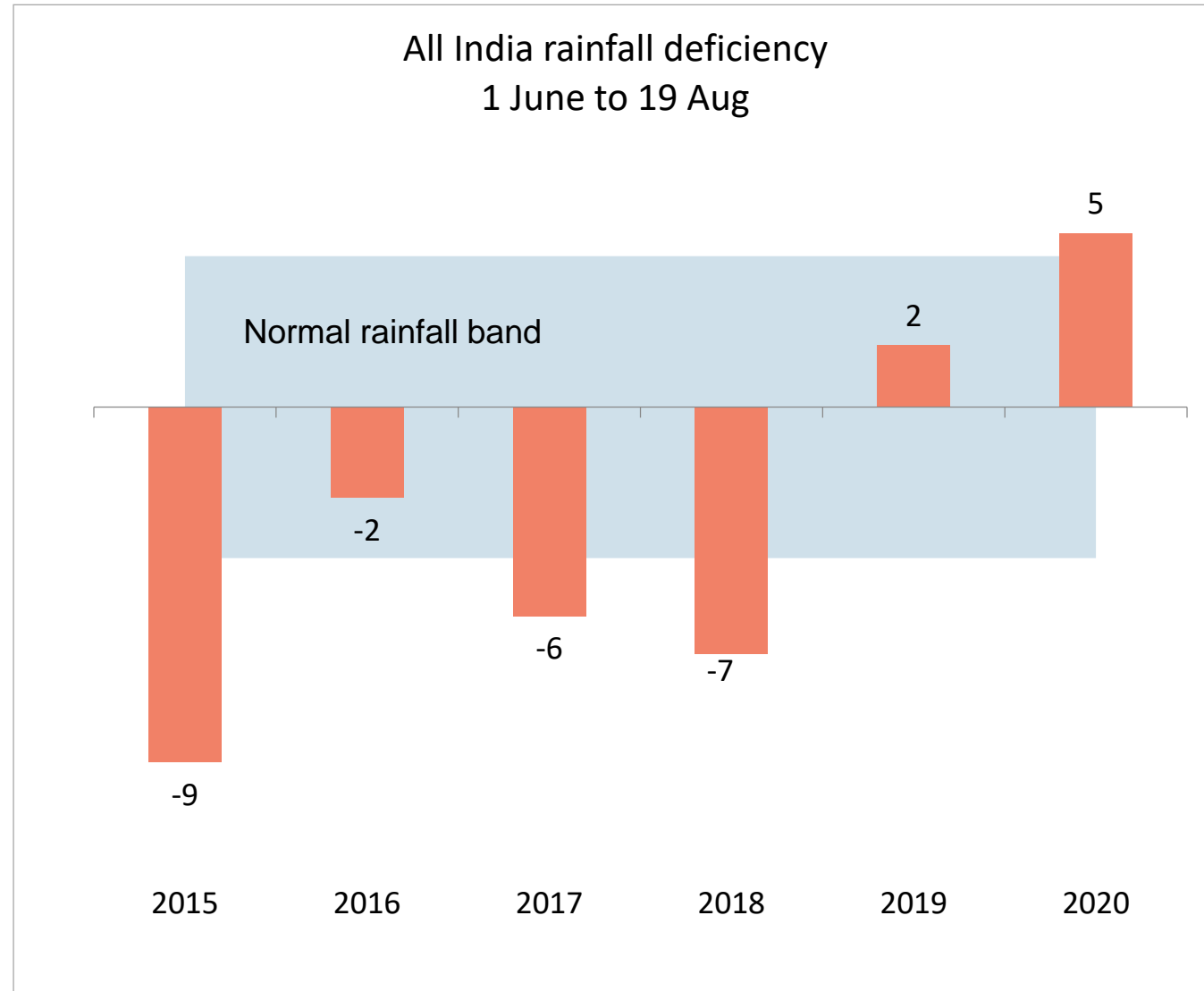


Expert Panel Q&A



# Most well-spread rains in three years

## 2020 southwest rains in abundance...



Source: Indian Meteorological Department (IMD), CRISIL

## ...and spread better

| % deviation from normal | 2018 | 2019 | 2020    |         |        |
|-------------------------|------|------|---------|---------|--------|
|                         |      |      | end-Jun | end-Jul | 19-Aug |
| Rajasthan               | -5   | 40   | 3       | -27     | -14    |
| Punjab                  | 10   | -5   | -7      | -1      | -13    |
| Odisha                  | 14   | 7    | 14      | -12     | -7     |
| Madhya Pradesh          | -7   | 44   | 62      | -9      | -6     |
| Uttar Pradesh           | -8   | -9   | 42      | 3       | -3     |
| Haryana                 | -8   | -42  | -5      | -1      | -2     |
| West Bengal             | -18  | -21  | 15      | 10      | 3      |
| Maharashtra             | -6   | 32   | 20      | 6       | 17     |
| Karnataka               | -8   | 23   | 0       | 5       | 20     |
| Gujarat                 | -27  | 43   | 2       | -2      | 30     |
| Bihar                   | -23  | 3    | 74      | 47      | 30     |
| Tamil Nadu              | -12  | 17   | 13      | 51      | 42     |
| Telangana               | 0    | 6    | 30      | 26      | 47     |
| Andhra Pradesh          | -10  | 10   | 36      | 58      | 47     |

Deficient
Normal
Excess
Large excess

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# Deficient Rainfall Impact Parameter (DRIP)

## GENERAL PRINCIPLE

Impact on agriculture = f (vulnerability, shock)

$$\text{DRIP CROP}_j = \sum_t w_i \frac{\% \text{ UNIRRIGATED}_{ij} * \text{RAINFALL DEF}_i}{100}$$

Where % UNIRRIGATED<sub>ij</sub> is the proportion of unirrigated area under crop 'j' in state 'i'

RAINFALL DEF<sub>i</sub> is the % deviation of rainfall from normal in state 'i'

If there is excess rainfall, rainfall deficiency is considered to be 0

w<sub>i</sub> is the share of state 'i' in overall production of crop 'j' in a normal monsoon year

## COMPUTATION

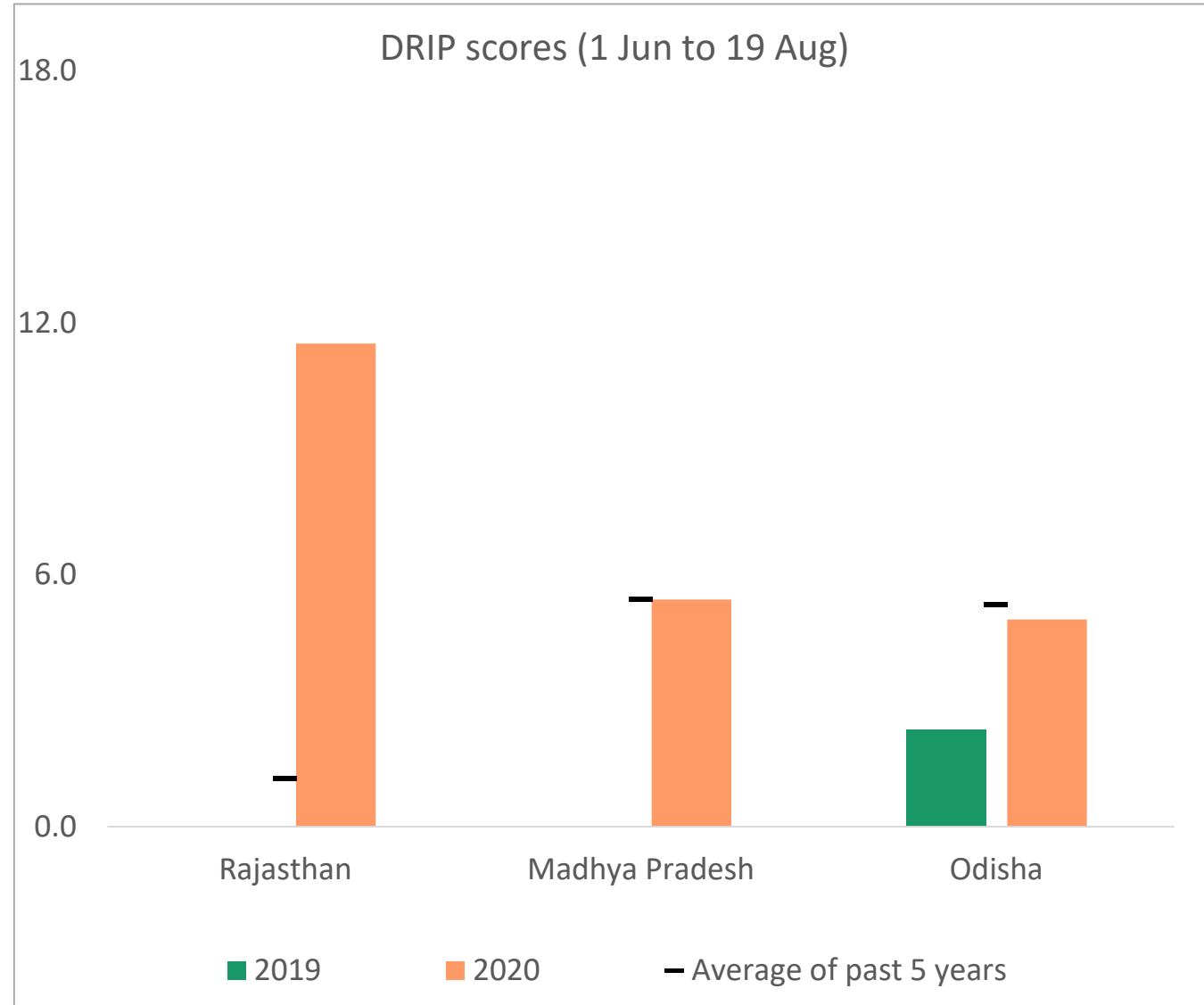
For a particular crop in a particular state:

**Vulnerability** is represented by % of area un-irrigated

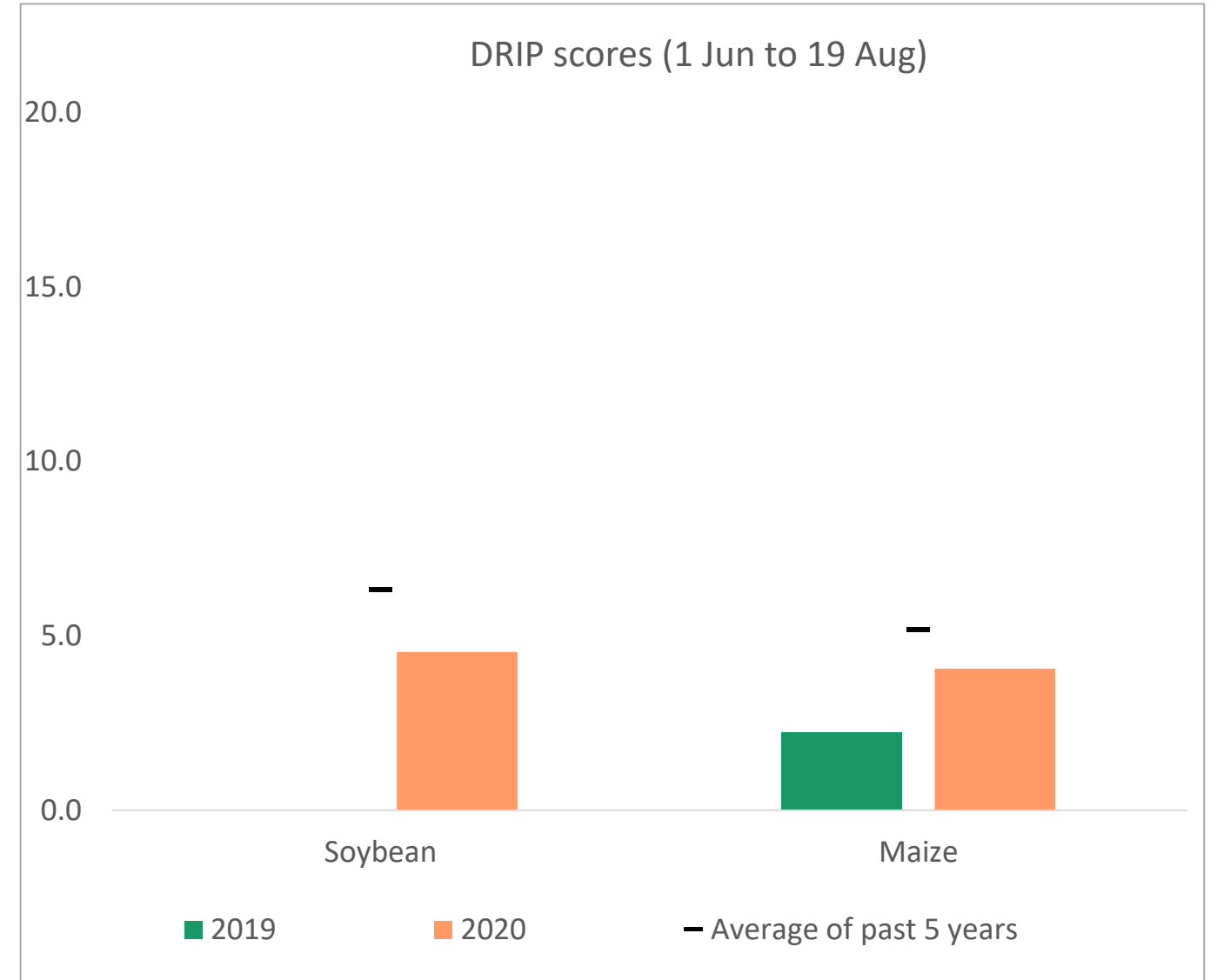
**Shock** is represented by % of rainfall deficiency

# DRIP scores provide comfort...

## 3 states...



## 2 crops...



Source: Indian Meteorological Department (IMD), Ministry of Agriculture, CRISIL

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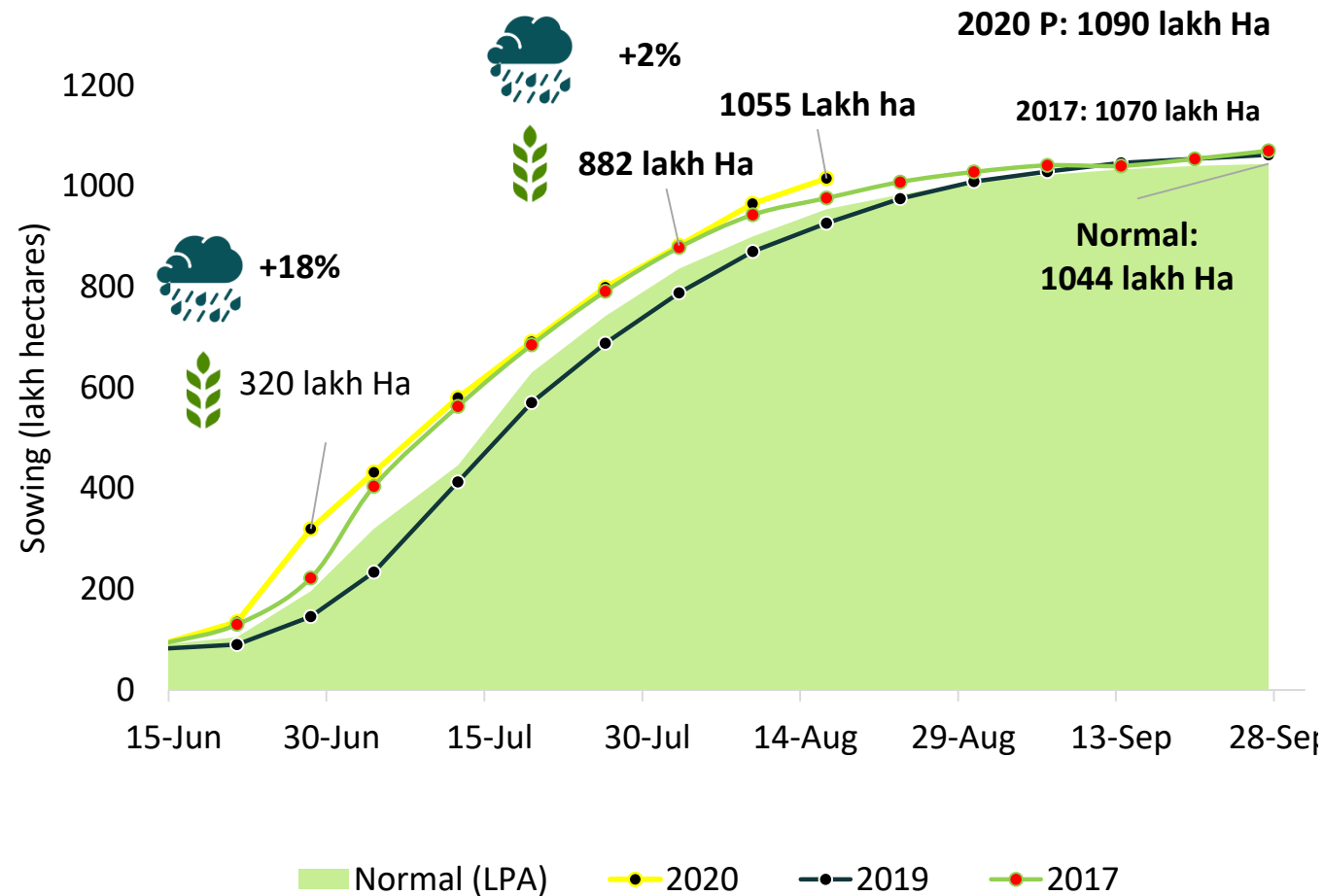




# Crop acreage at par with 2017 levels till July end, 10% higher on-year

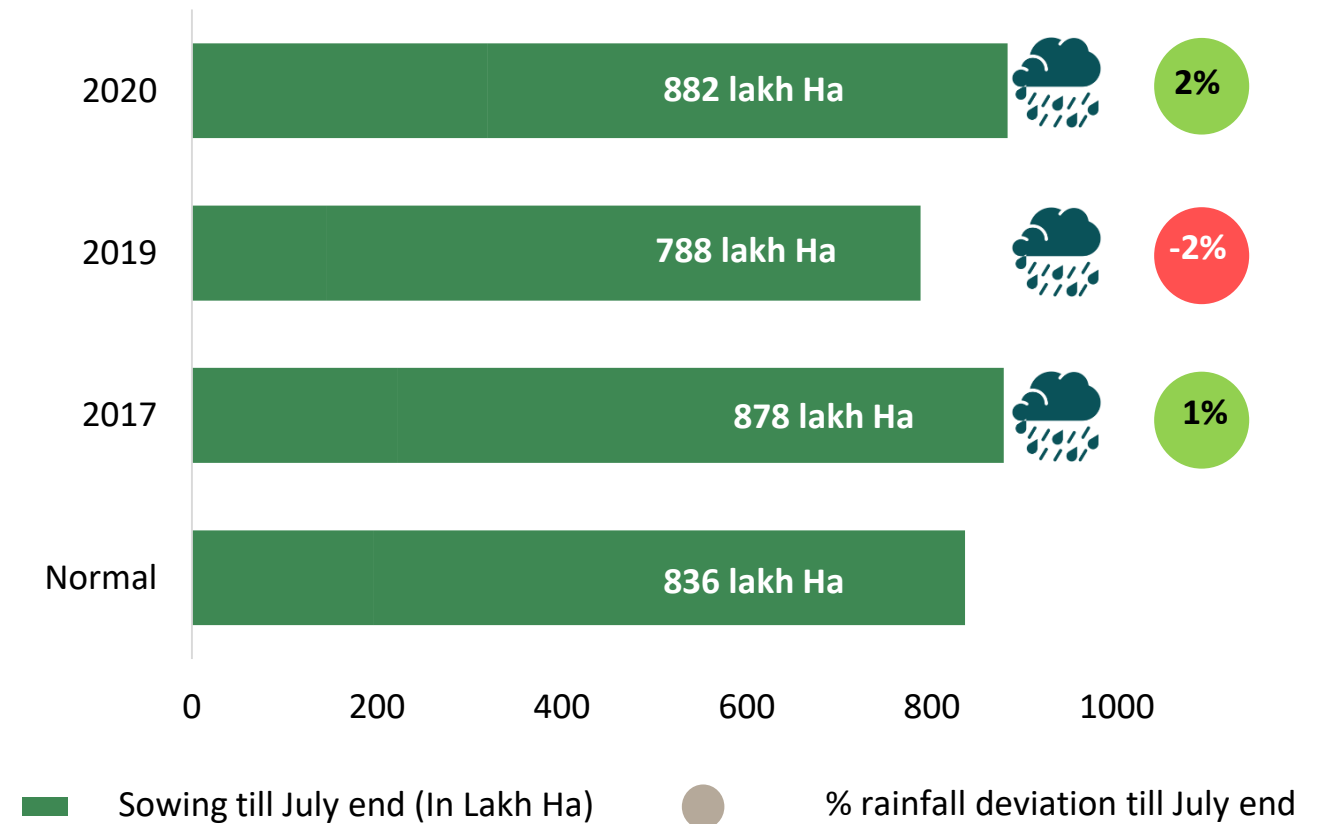
## An early onset of monsoon has advanced kharif sowing in 2020

While June saw a 44% increase in sowing on year, the growth rate has been coming down as the season progresses



## Sowing and rainfall in 2020 shows similarities to 2017

While sowing shows a sharp increase on-year due to delayed monsoon in 2019, it was at par with 2017 levels till July end



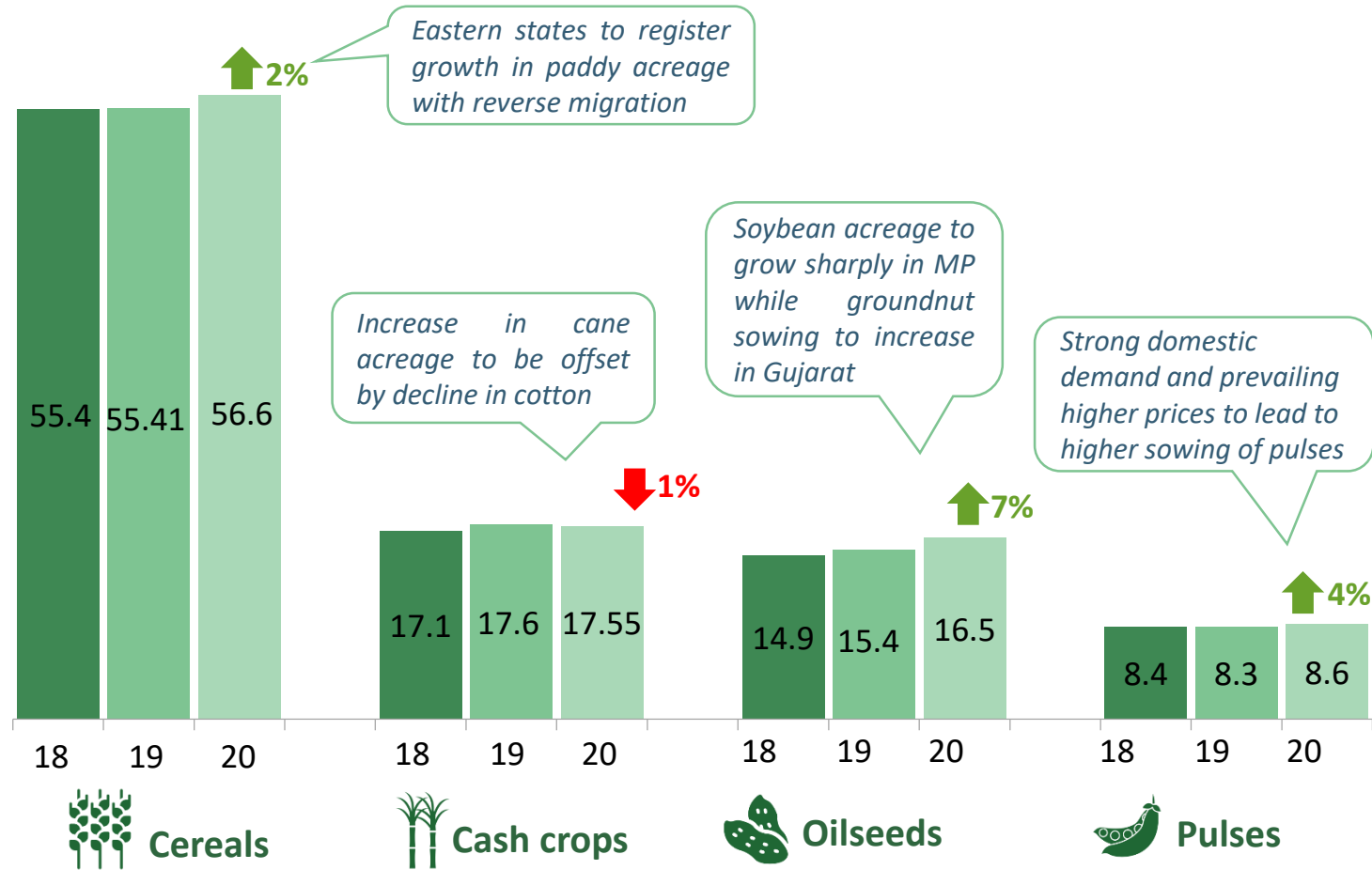
Source: IMD, Ministry of Agriculture, CRISIL

# Kharif crop acreage expected to increase ~2-3% on-year in marketing year 2020

Crop acreage to increase for majority field crops except cotton and maize in MY 2020, vegetable sowing to decline among horticulture crops

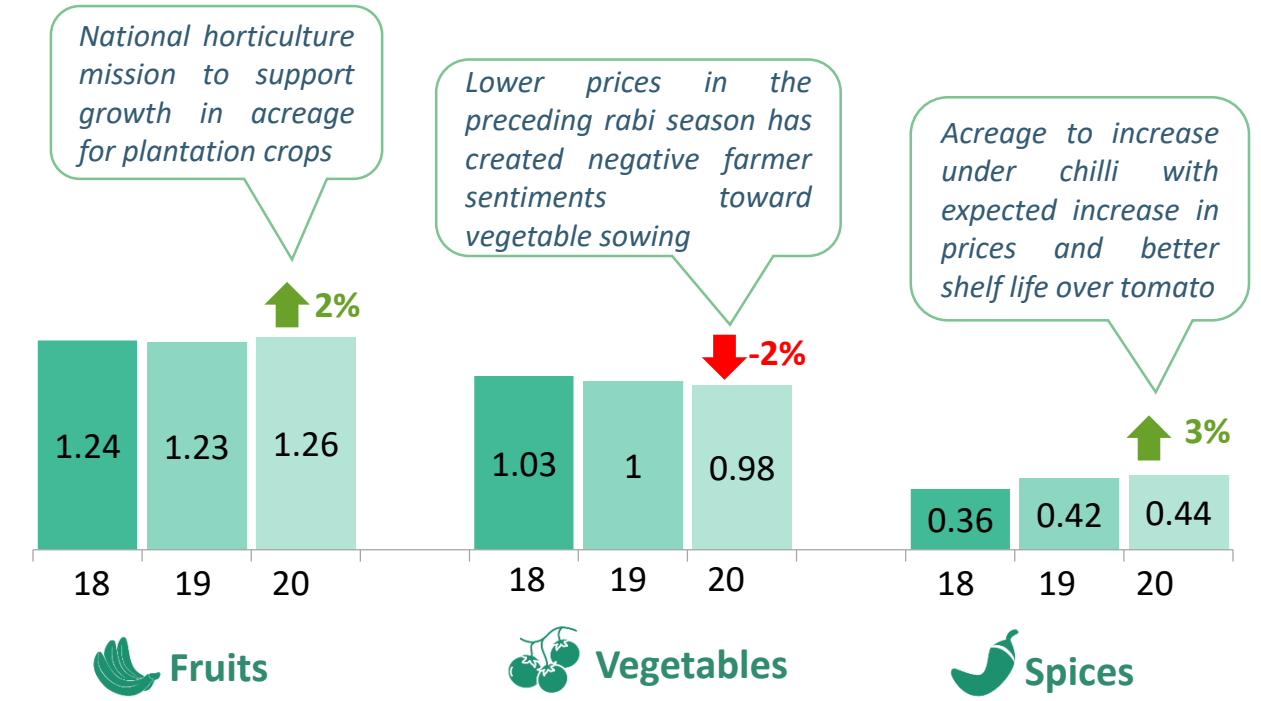
## Crop acreage to increase ~2-3% on-year for field crops

Sown area (million hectares)



## Crop acreage to increase ~1% on-year for horticulture crops

Sown area (million hectares)



Note: 1) Cereals include paddy, maize, ragi, jowar and bajra; Cash crops include cotton, sugarcane and jute; Oilseeds include groundnut and soybean; Pulses include urad and tur  
 2) Fruits include apple and banana; Vegetables include onion, tomato, brinjal; Spices include chilli  
 Source: CRISIL Research

# Kharif crop productivity expected to improve ~3% on-year in marketing year 2020

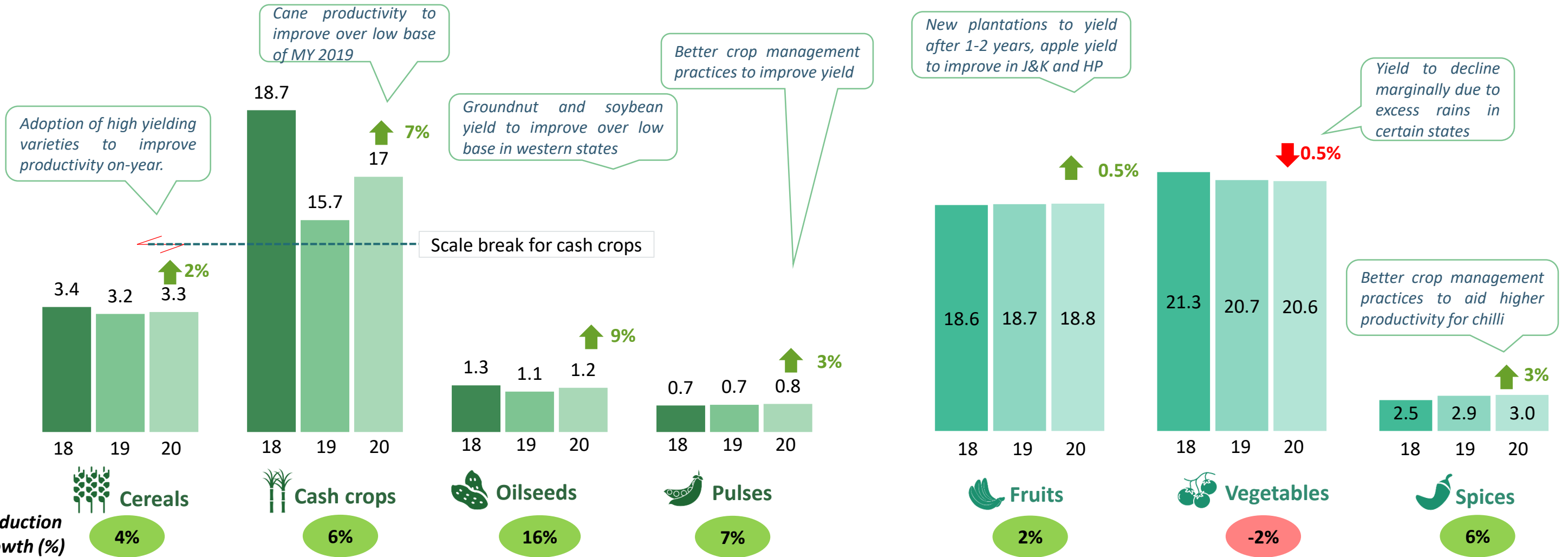
Kharif crop output to increase 5-6% on year driven by higher crop acreage and productivity

Crop productivity to increase ~2-3% on-year for field crops

Crop productivity to decline marginally on-year for horticulture crops

Yield (tonnes/hectare)

Yield (tonnes/hectare)



Note: 1) Cereals include paddy, maize, ragi, jowar and bajra; Cash crops include cotton, sugarcane and jute; Oilseeds include groundnut and soybean; Pulses include urad and tur  
 2) Fruits include apple and banana; Vegetables include onion, tomato, brinjal; Spices include chilli

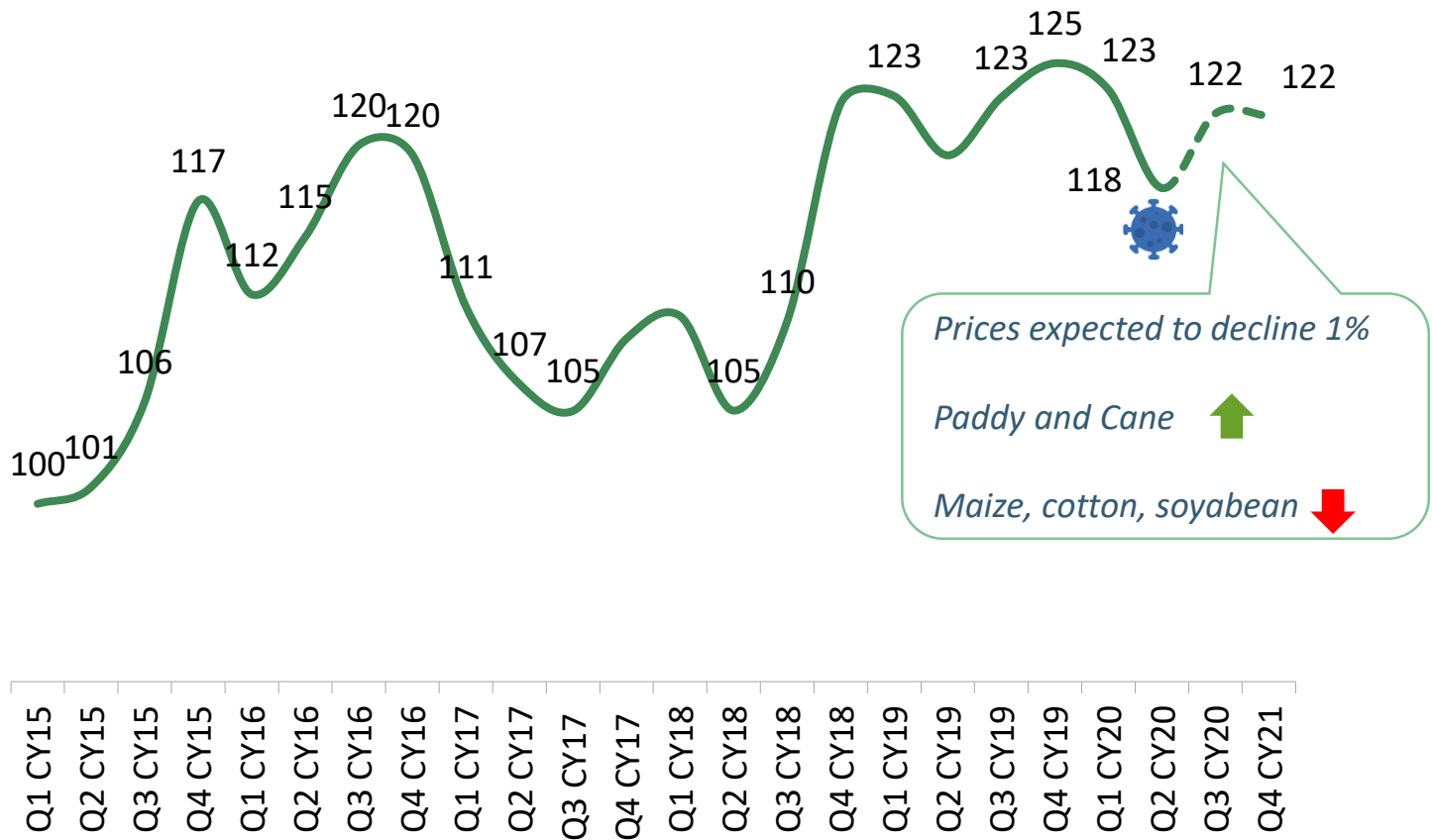
Source: CRISIL Research

# Prices to turn bearish on-year for pulses, cotton and vegetables in marketing year 2020

Paddy and coarse grain prices (barring maize) are expected to stay firm in marketing year 2020 with increase in domestic demand

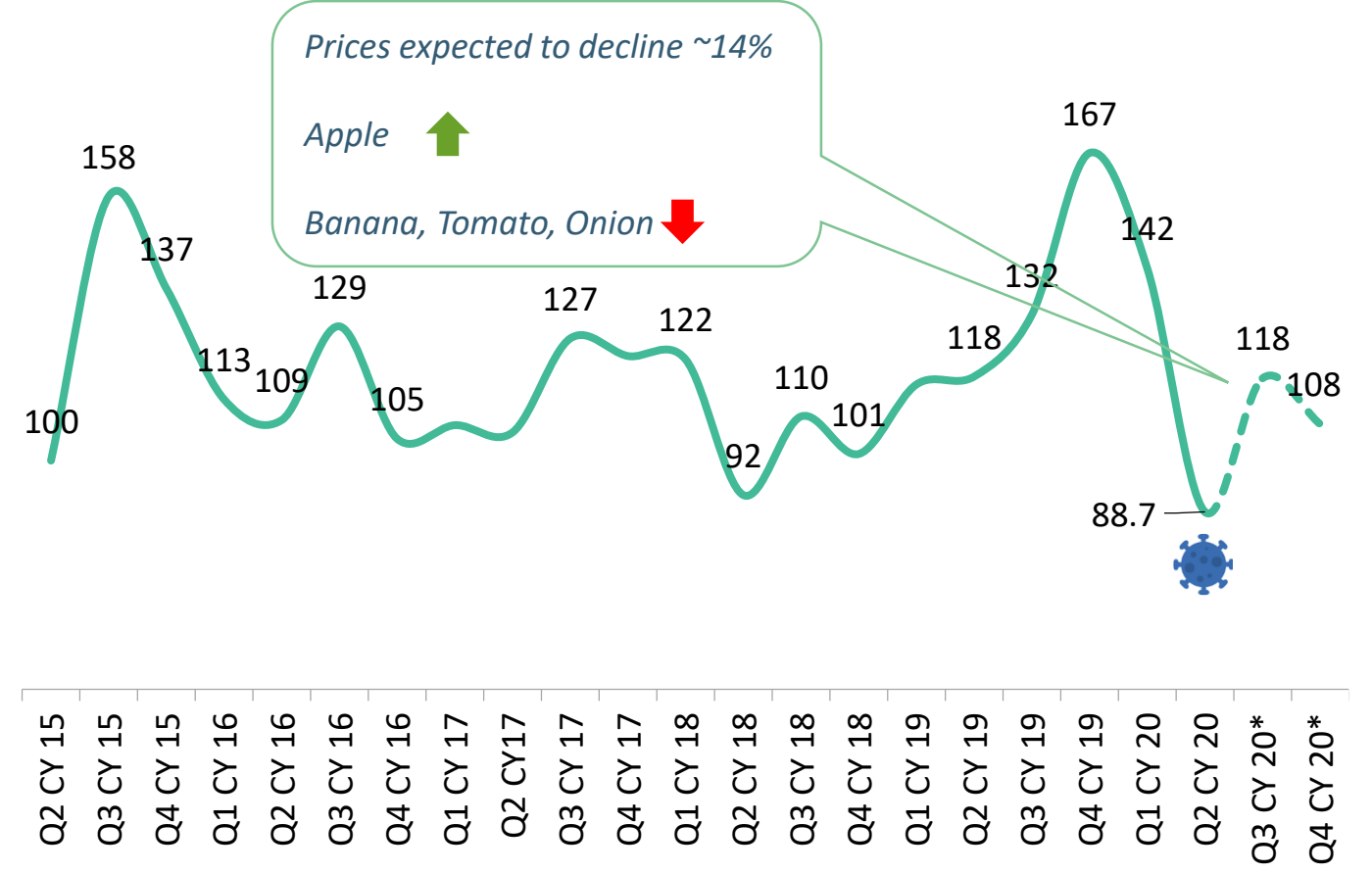
Surplus production to exert downward pressure on prices of 10 out of 14 field crops

Weighted average mandi price index



Horticulture crop prices to decline on a high base of 2019, amid excess supplies and muted demand growth

Weighted average mandi price index



Note: 1) Cereals include paddy, maize, ragi, jowar and bajra; Cash crops include cotton, sugarcane and jute; Oilseeds include groundnut and soybean; Pulses include urad and tur  
 2) Fruits include apple and banana; Vegetables include onion, tomato, brinjal; Spices include chilli 3) Quarterly mandi price index is for weighted average prices, weights being daily market arrivals. Base year is 2015  
 Source: CRISIL Research

# Kharif crop profitability to inch upwards by 3-5% on-year in marketing year 2020

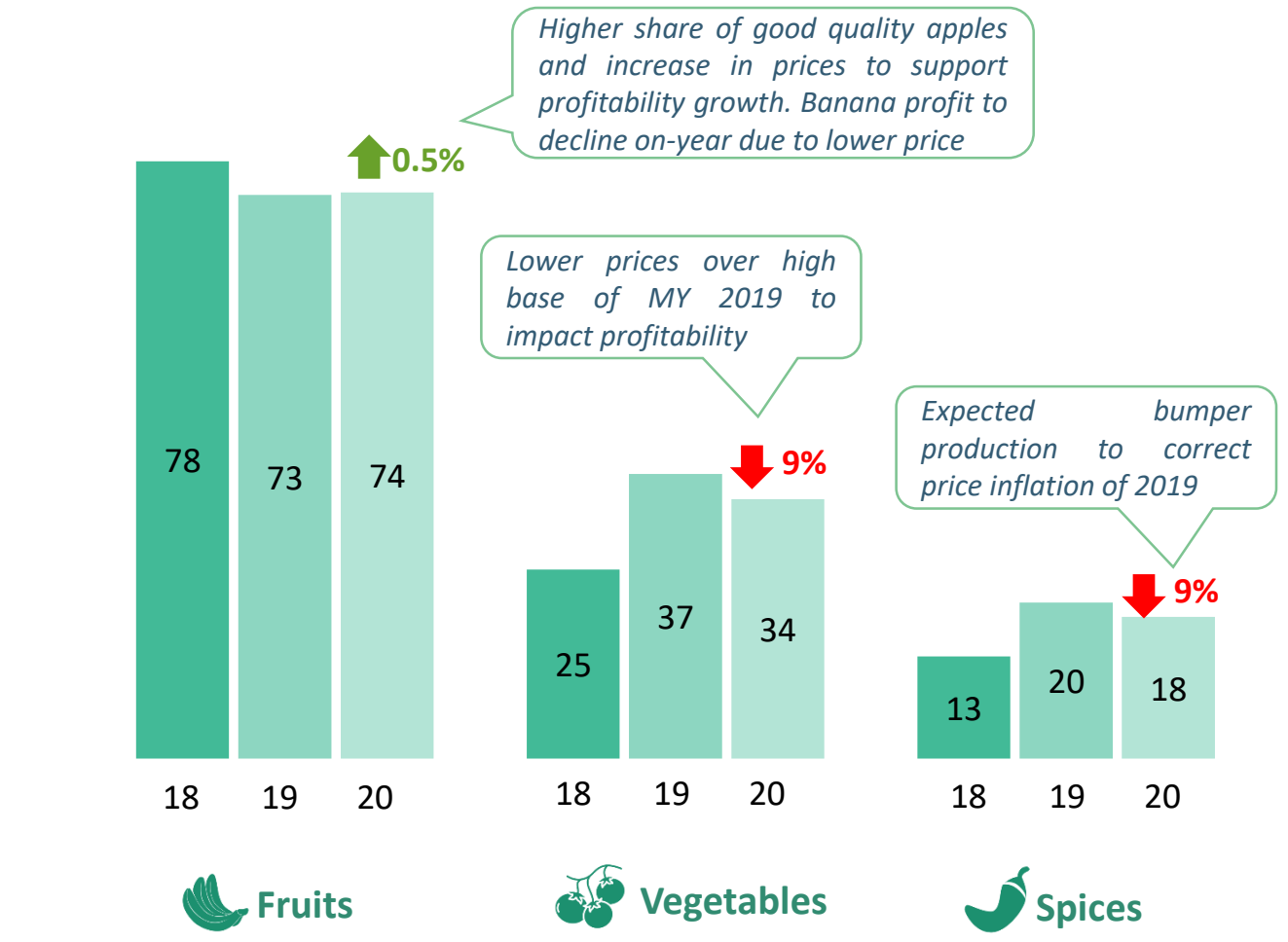
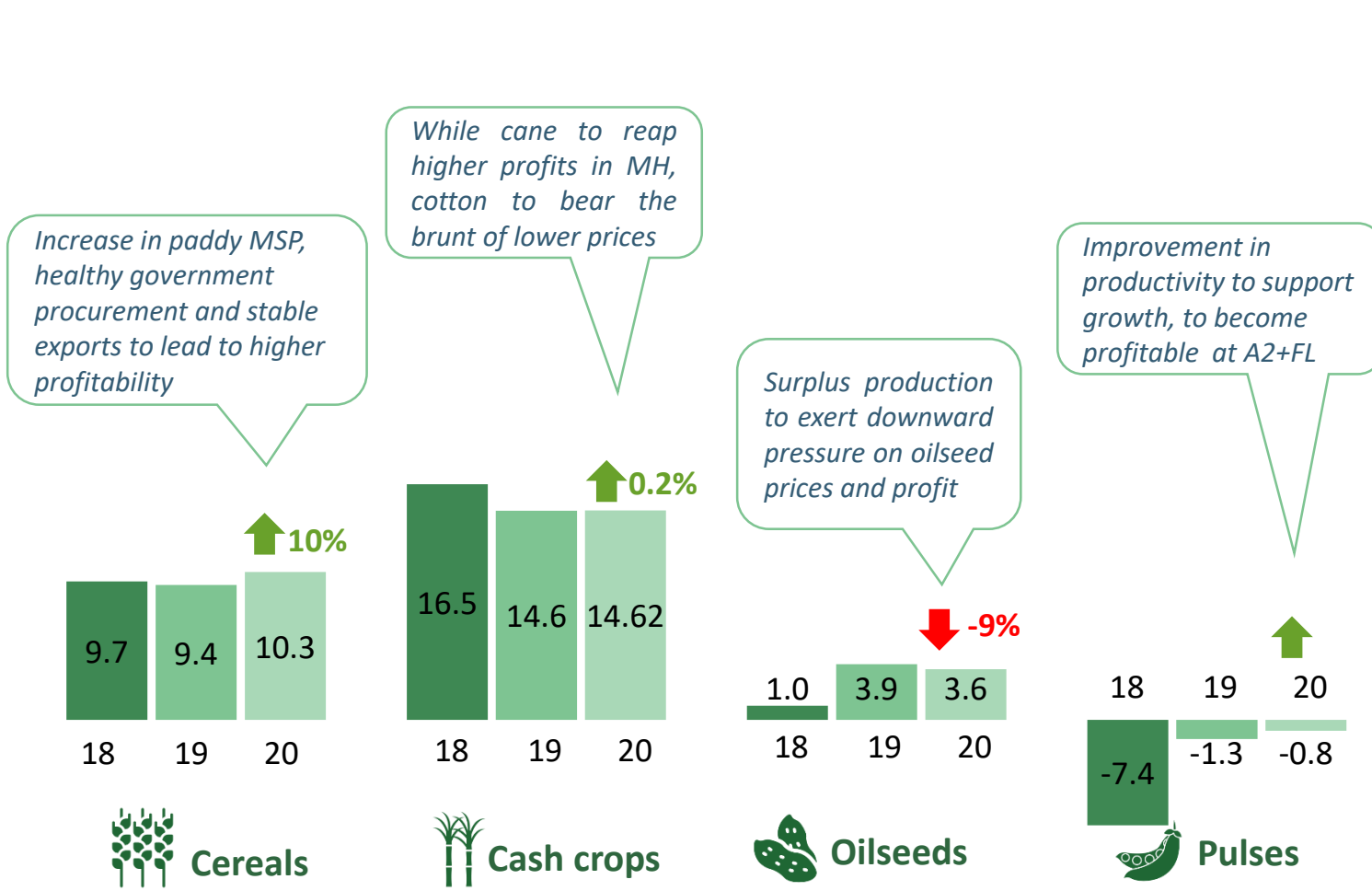
Sugarcane and paddy to continue to be the highest profit making field crops due to government support, apple to lead horticulture profitability

Per hectare profitability (at C2 cost) to increase ~5-6% on-year for field crops

Per hectare profitability (at C2 cost) to decline ~3-4% for horti crops

Profit ('000 Rupees/hectare)

Profit ('000 Rupees/hectare)



Note: 1) Cereals include paddy, maize, ragi, jowar and bajra; Cash crops include cotton, sugarcane and jute; Oilseeds include groundnut and soybean; Pulses include urad and tur  
 2) Fruits include apple and banana; Vegetables include onion, tomato, brinjal; Spices include chilli  
 3) Profit per hectare is computed at C2 cost (inclusive of imputed rent, depreciation and opportunity cost of family labour)  
 Source: CRISIL Research

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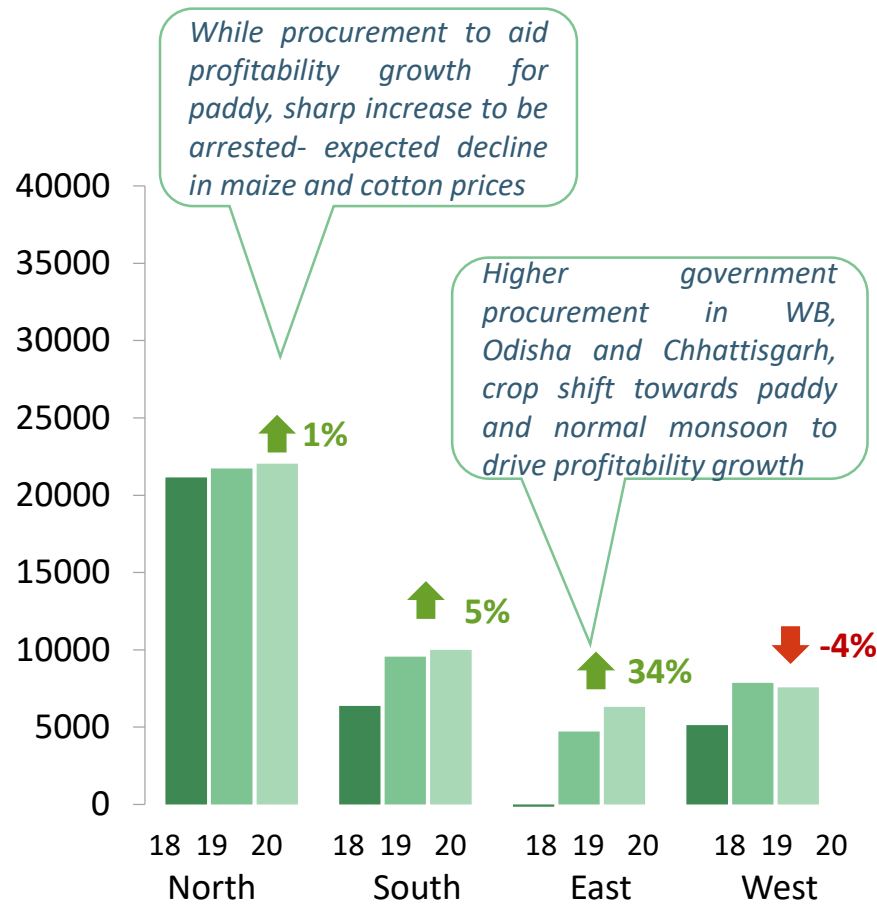


# East and South to provide incremental opportunities in kharif 2020

North is expected to continue to lead the per hectare profitability in kharif 2020, lower crop prices to negatively impact profitability in Western Region

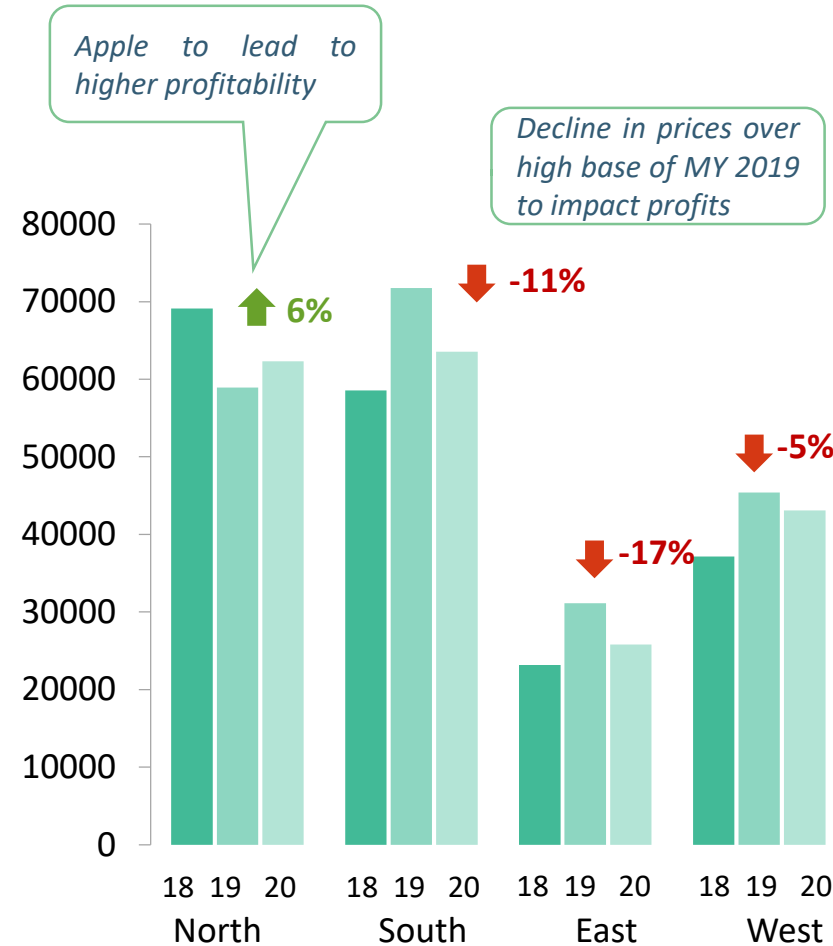
## Eastern states to drive Field crop profitability

Profit (Rupees/hectare)



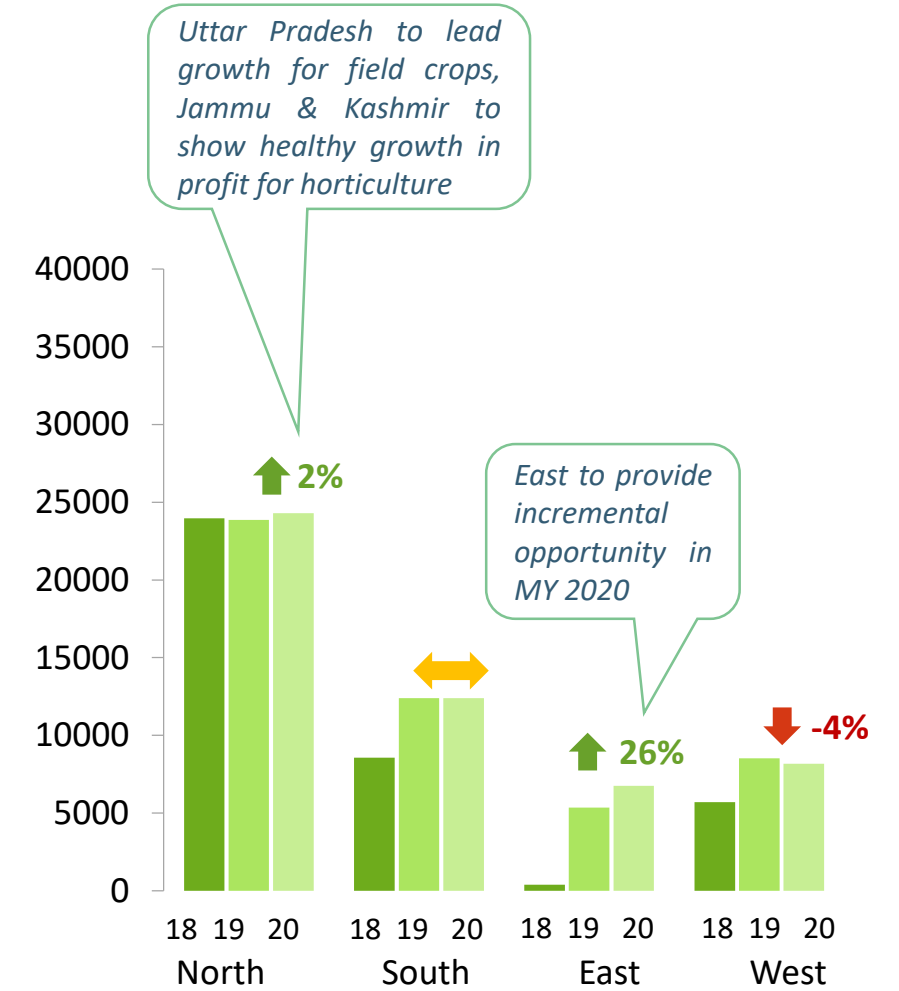
## Lower prices to impact horticulture profits

Profit (Rupees/hectare)



## PAN India profit/hectare to increase 3-5%

Profit (Rupees/hectare)



Note: 1) Cereals include paddy, maize, ragi, jowar and bajra; Cash crops include cotton, sugarcane and jute; Oilseeds include groundnut and soybean; Pulses include urad and tur

2) Fruits include apple and banana; Vegetables include onion, tomato, brinjal; Spices include chilli 3) Profit per hectare is computed at C2 cost (inclusive of imputed rent, depreciation and opportunity cost of family labour)

Source: CRISIL Research

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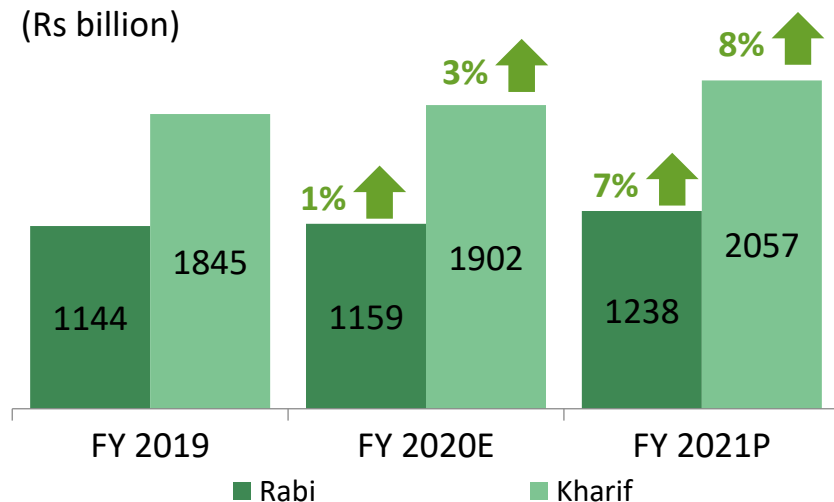
# Farmer incomes set to increase on-year in fiscal 2021

Higher productivity to support field crops, increase in crop procurement and MGNREGA allocations to further boost farmer income

## Field crop profitability

Higher acreage, productivity and government procurement to aid growth in FY 2021

(Rs billion)

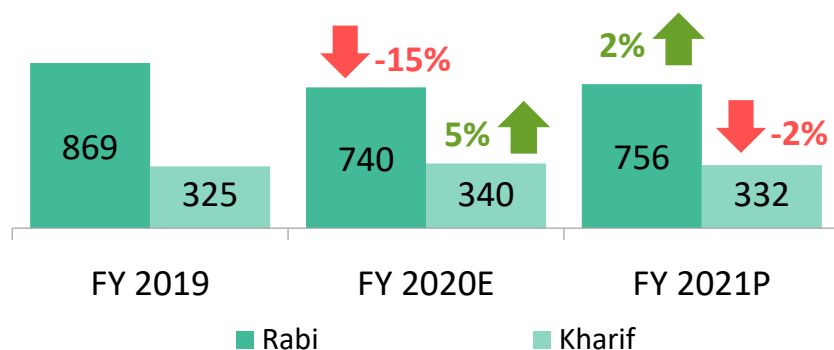


Note: Profit is at A2+FL Level

## Horticulture crop profitability

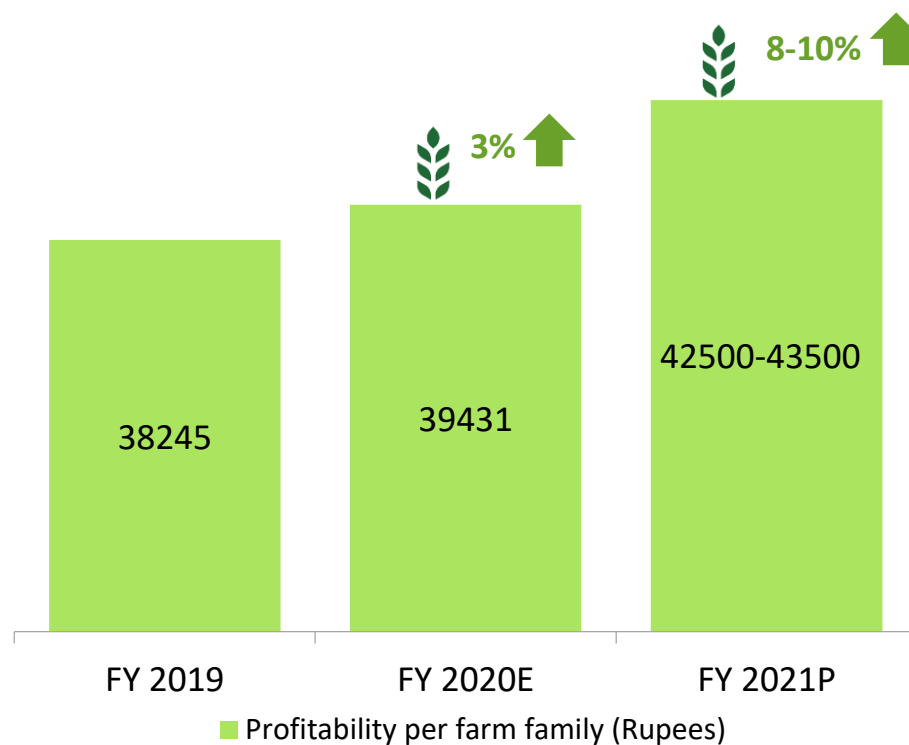
Higher prices (rabi) to boost profitability in FY21, but lower prices to impact kharif

(Rs billion)



Note: Profit is at A2+FL Level Source: CRISIL Research

## Farmer income from farming activities to increase 8-10% on-year in fiscal 2021

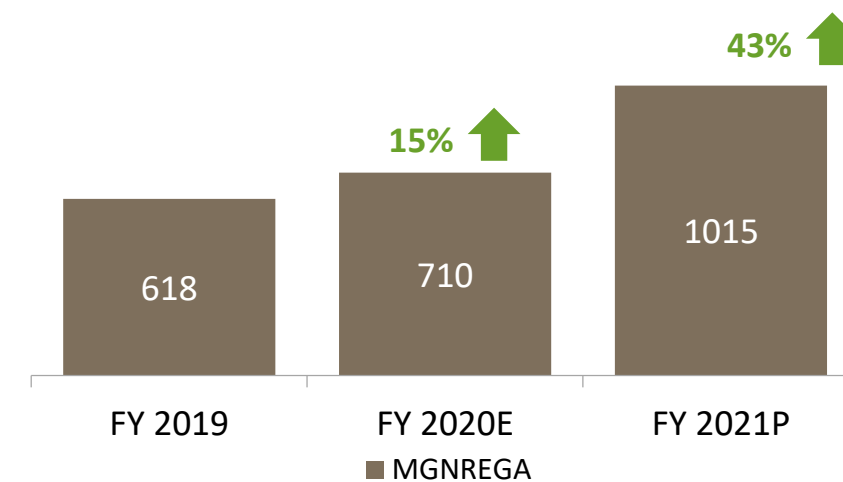


Note: Profit per farm family represented above is weighted average of cultivation, MGNREGA and Dairy accounting for around 45% of the rural income. The remaining 55% of the rural income comes from non agriculture activities such as public/private jobs and non farming wages which has not been represented in the above chart. 2) Our base case for computation of farmer income and crop profitability is peak of CoVid 19 in later stage of Q2 FY 21

## MGNREGA

Additional allocation of Rs 400 billion over budgeted Rs 615 billion to support rural incomes

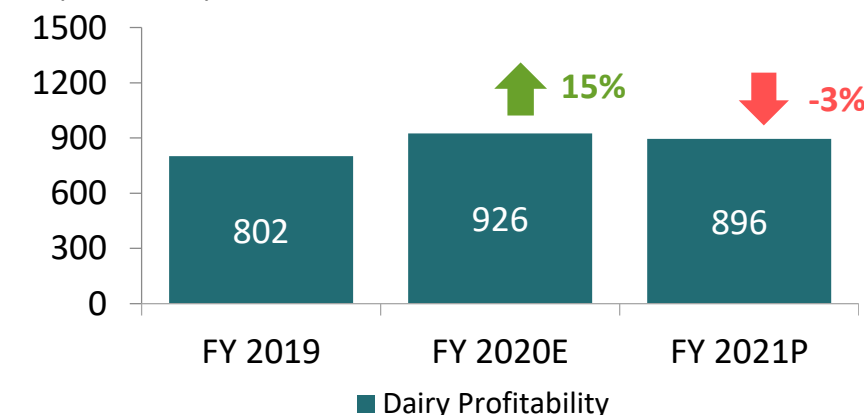
(Rs billion)



## Dairy

An expected decline in procurement prices to negatively impact farmer profitability

(Rs billion)

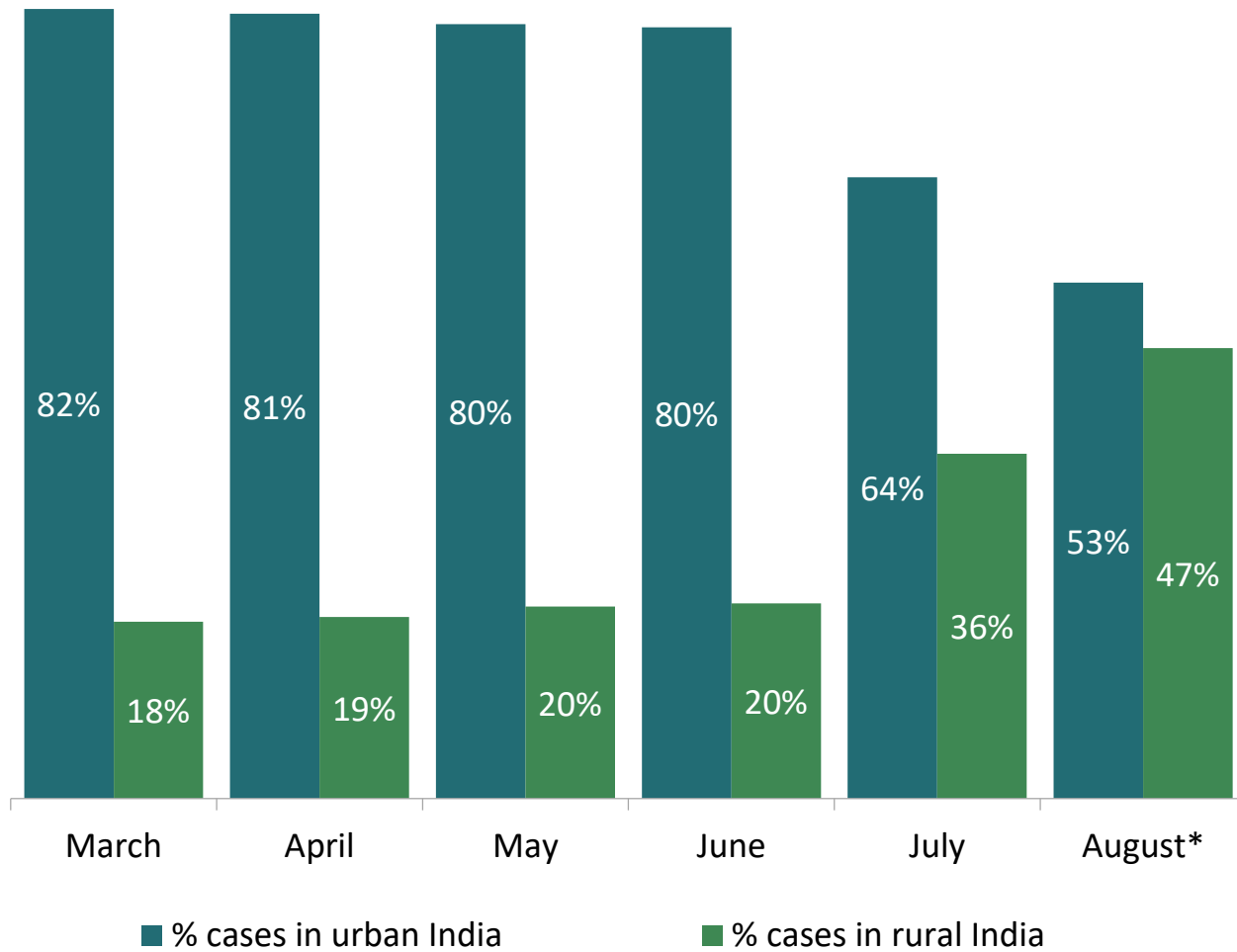


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# Rapid spread of CoVid 19 in rural India, a major risk to the expected growth in farm sector

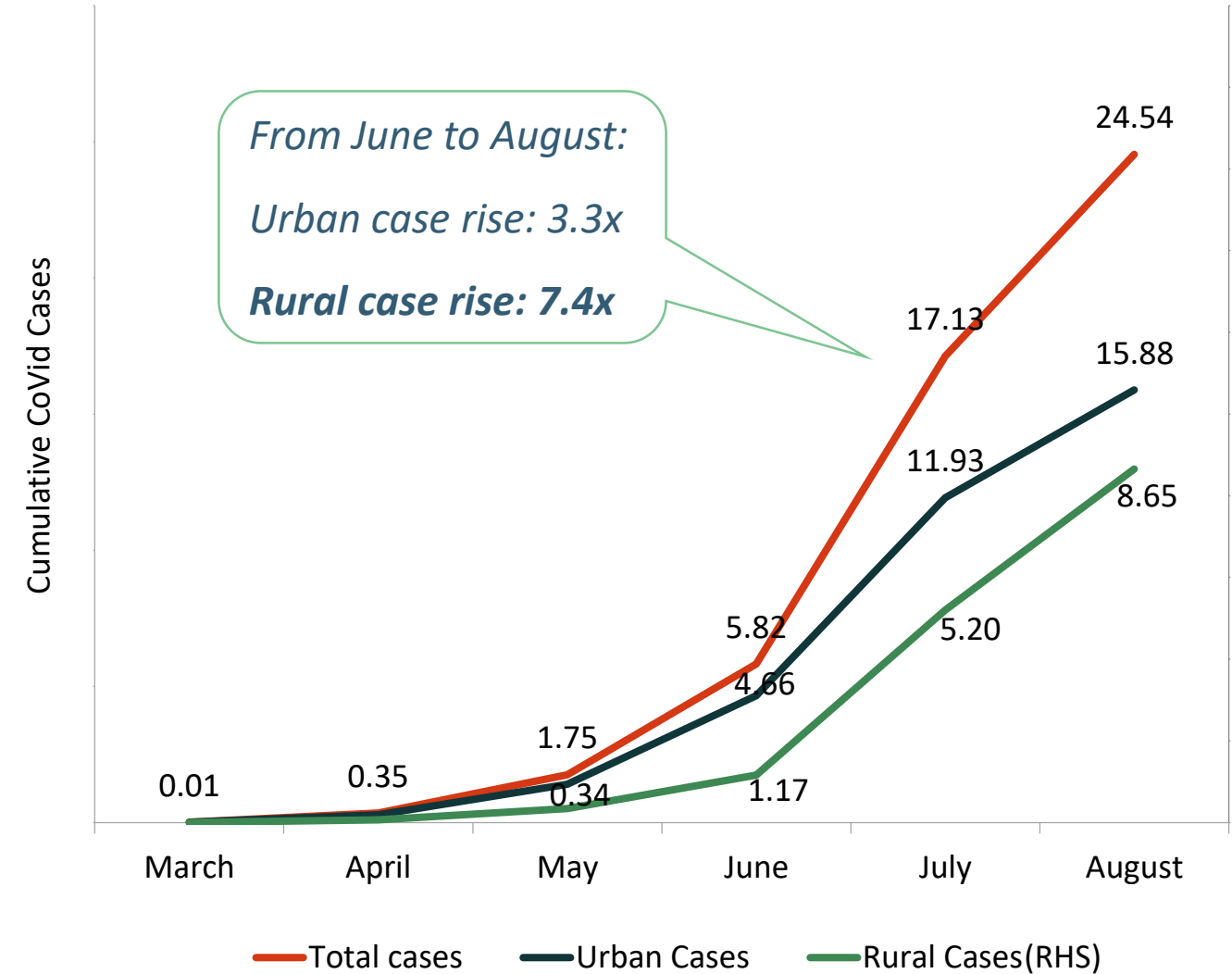
Districts with >60% rural population, account for almost half the cases

(%)



CoVid 19 cases in rural India increasing at a faster pace than urban India

(Lakh)



Note: 1) Districts with more than 60% rural population are considered in rural. Data for August is from 1-13<sup>th</sup> August 2) Our base case for computation of farmer income and crop profitability is peak of CoVid 19 in later stage of Q2 FY 21

Source: CoVid19org, CRISIL Research

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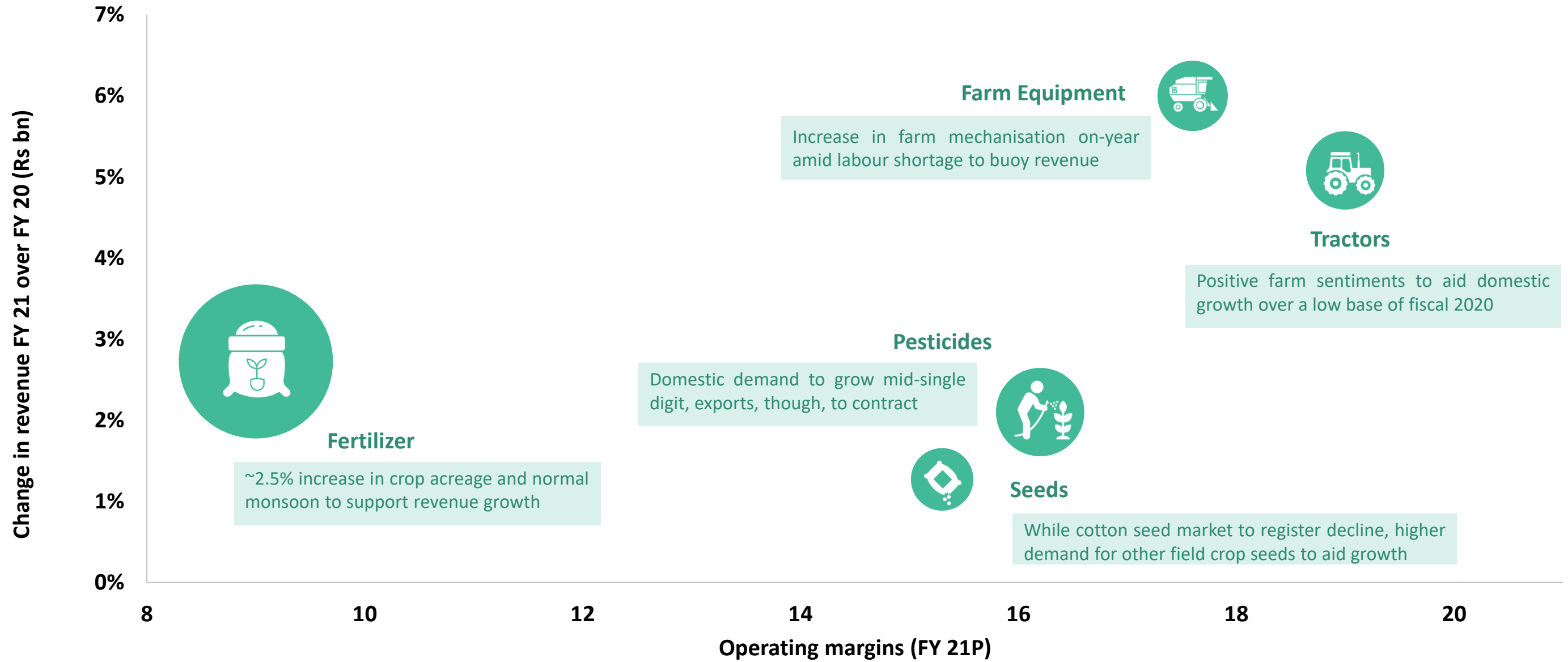


Expert Panel  
Q&A



# Agri input industry revenue to grow 3-7% on-year in fiscal 2021

Lower raw material prices and higher demand to lead to on-year margin expansion for agri input industry in fiscal 2021



Note: Size of the bubble is revenue of the industry (FY 20), arrows represent expected change in operating margin on-year  
Source: CRISIL Research

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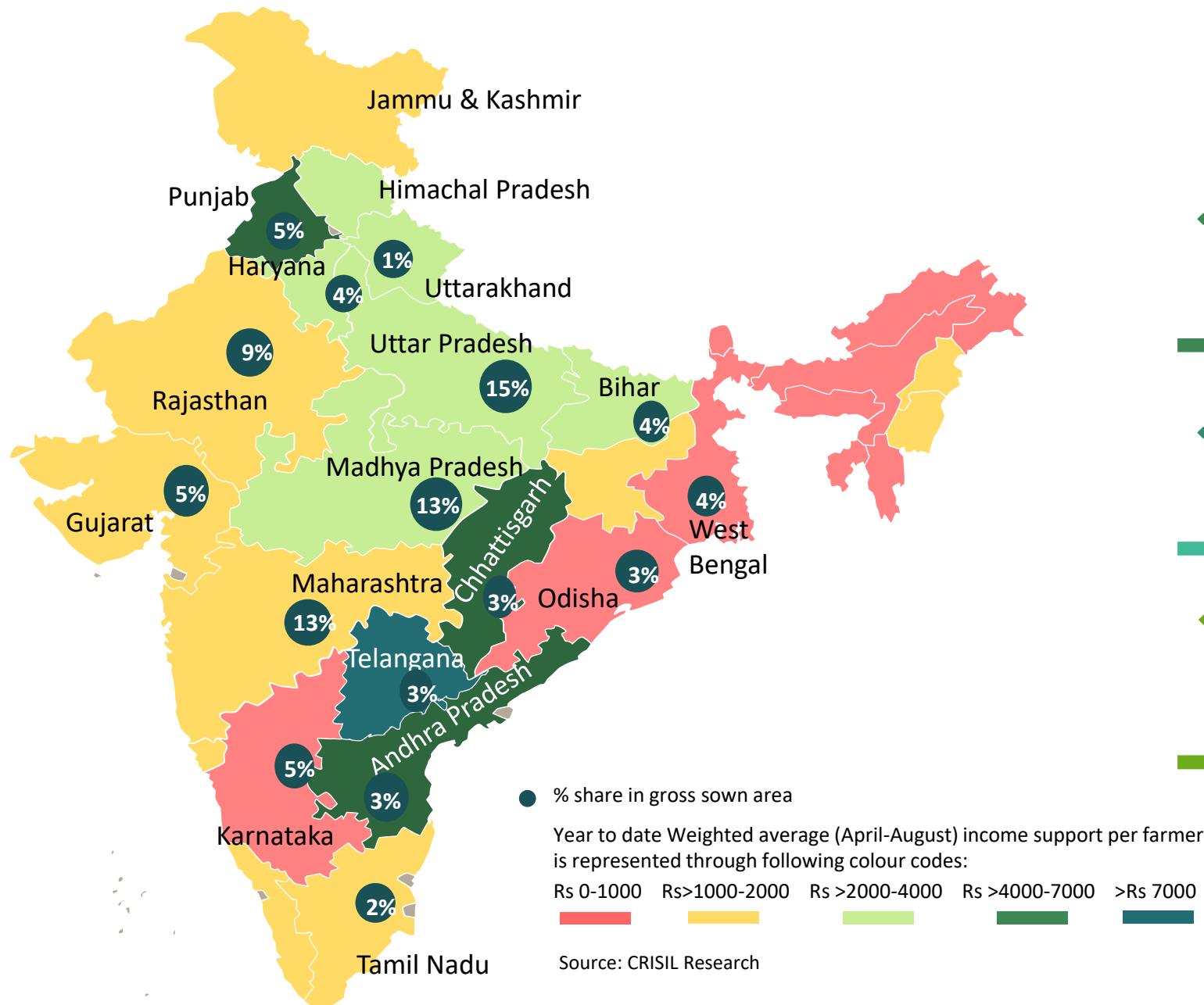
Expert Panel  
Q&A



# While income support schemes to provide short term support, government reforms to provide structural support over the long run

Farmer spirits boosted with year to date average cash incentive of ~Rs 2100

Agriculture Reforms to boost farm sector on effective implementation



## ❖ Essential Commodity Act Amendment Ordinance

✓ With this amendment, **commodities** like cereals, pulses, oilseeds, edible oils, onion and potatoes will be **removed** from list of **essential commodities**

## ❖ The Farmers' Produce Trade and Commerce Ordinance 2020- reducing reliance on APMC

## ❖ The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance 2020 Contract farming

# Thank you

For more details about CRISIL's Agriculture Report, [click here](#)