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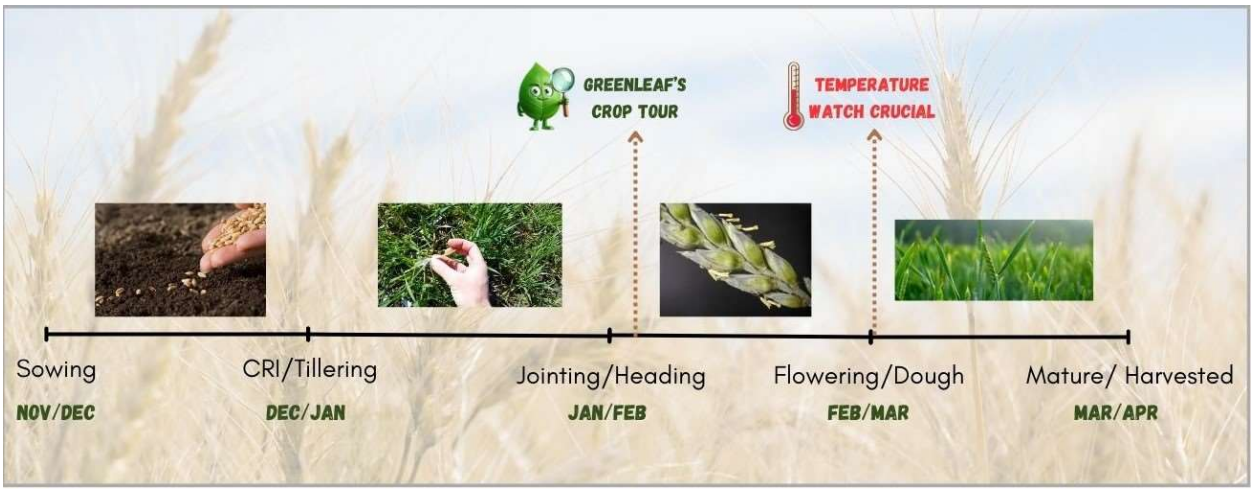
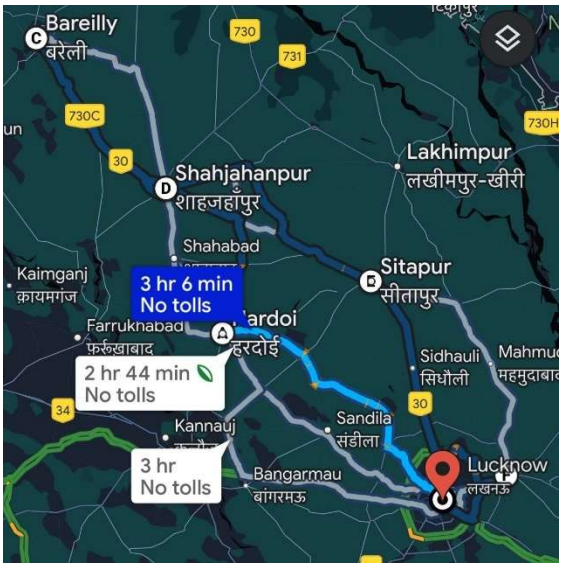
EASTERN U.P. CROP TOUR REPORT (25-27 FEB)

Overview

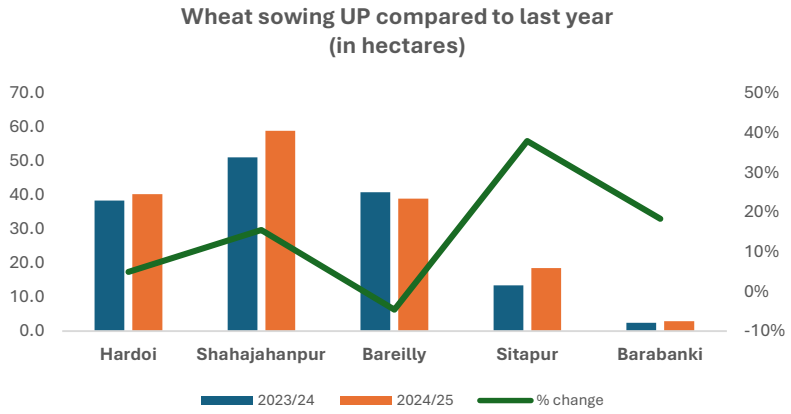


- Uttar Pradesh is one of the leading wheat producing states in the country, producing close to 35-36MMT of crop.
- This year even though the government is confident about the record-breaking produce of staggering 115MMT, the reality seems to be off-putting.
- With the La Nina ending early and the arrival of summers in the beginning of May which is unusual, this can have a significant impact on the crop.
- Regions of central India, Madhya Pradesh, Gujarat and Maharashtra are safe from the temperature impact because early sowing giving way to early harvest in the beginning of March.
- The state of concern is Northern India particularly the state of Uttar Pradesh. To confirm the effects of rising temperatures, status of sowing and conditions of the crop. We did a crop tour of 4-5 major wheat producing districts of **Hardoi**, **Shahajahanabad**, **Bareilly**, **Sitapur** and **Barabanki**. Covering 80 farms, together these districts constitute close to 10% of the total wheat sowing area of Uttar Pradesh.

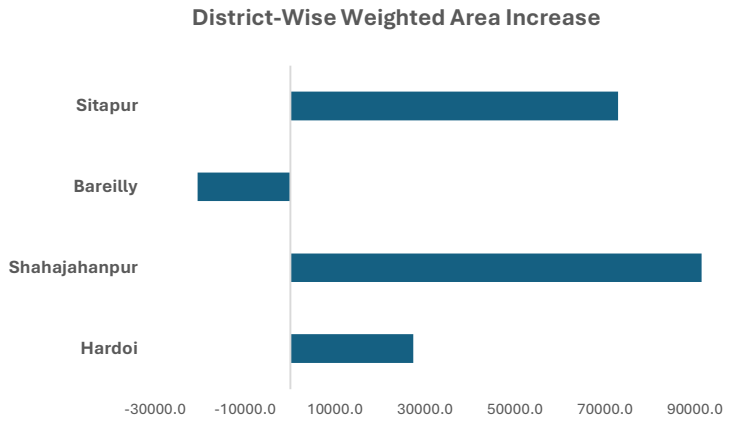


What is the status of sowing?

- Compared to last year, the current year's sowing in the region has increased by 14% on the average.



- Even though sowing area overall has increased, and the crop looks good. Most farmers are skeptical about the same or more yield as last year.
- The consensus among farmers is that yield could decrease by 25%. That is 3-4 quintals per hectare.
- Most of the crop in the region was sown in November mid to December start and hence the crop is currently in Heading or Flowering stage which gives the crop another 30-35 days to harvest pushing the harvest in the first to second week of April.

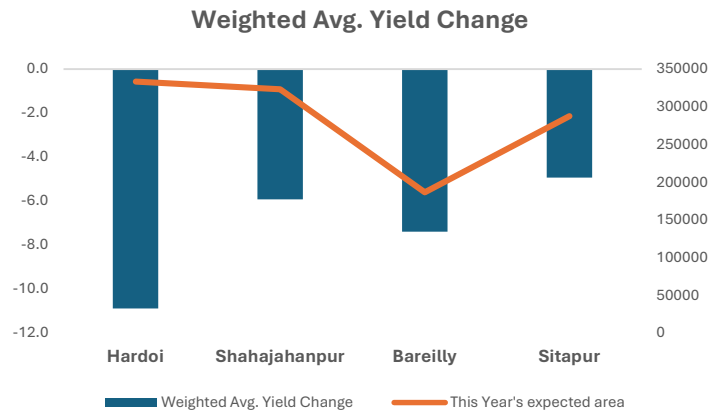


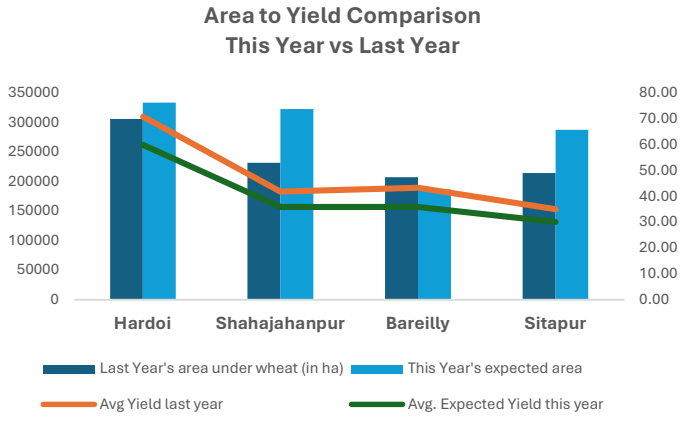
- From the weighted average we received the net area increased in each district, which is positive, except for Bareilly where the sowing area decreased due to factors including sowing of other favorable crop like mustard, destruction of crop due to urbanization and smaller landholdings dividing focus to one crop.
- From the District-Wise area we also got the expected area under wheat this year, this year's expected area decreasing by 10% for Bareilly, some promising data with 40% increase in Shahajahanpur and 34% increase in Sitapur making the farmers confident of a higher crop production but we still haven't taken the yield into account.

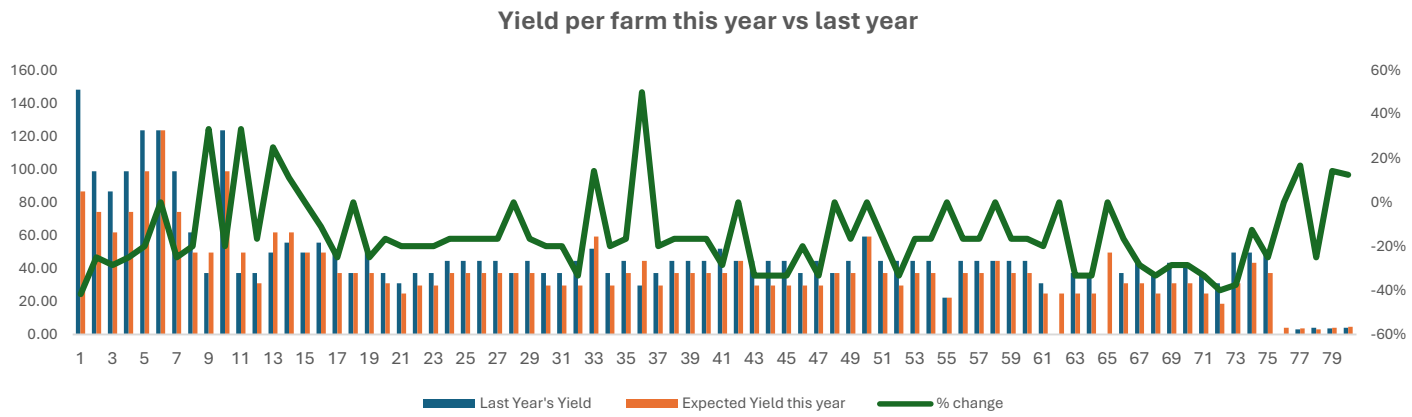
District Name	Avg. Area Inc. (in ha)	Last Year's area under wheat (in ha)	District-Wise Area Increase	This Year's exptd area under wheat (in ha)	% chg
Hardoi	0.1	305898	27412.2	333310	9%
Shahajahanpur	0.4	231514	91473.3	322987	40%
Bareilly	-0.1	207246	-20600.3	186646	-10%
Sitapur	0.3	214573	72943.7	287517	34%
Total		**959231**	**171229**	**1130460**	**18%**

Impact on the Yield?

- We see an overall area under wheat this year increase by 18% but does that mean increase in the yield as well? Although we would like to assume and predict big numbers for the crop the reality is posed somewhat different.
- This year's wheat production outlook has been influenced by both environmental and agronomic factors. Based on the past year's average yield from sample farmers in the district, we assessed their expectations for this season, factoring in anticipated temperature rise and heavy winds. These conditions have led to a projected shift in yield per hectare, impacting on overall output.

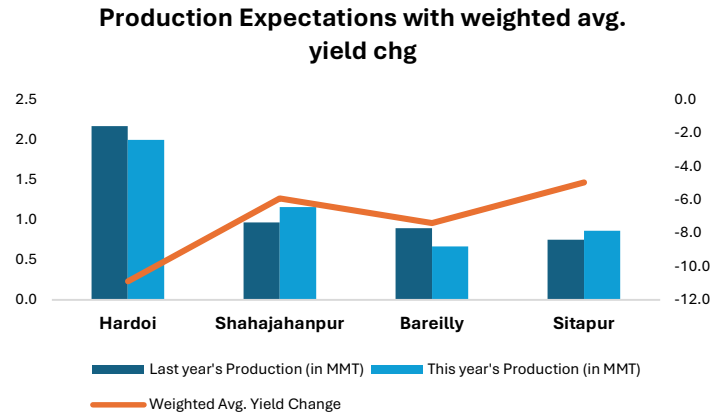






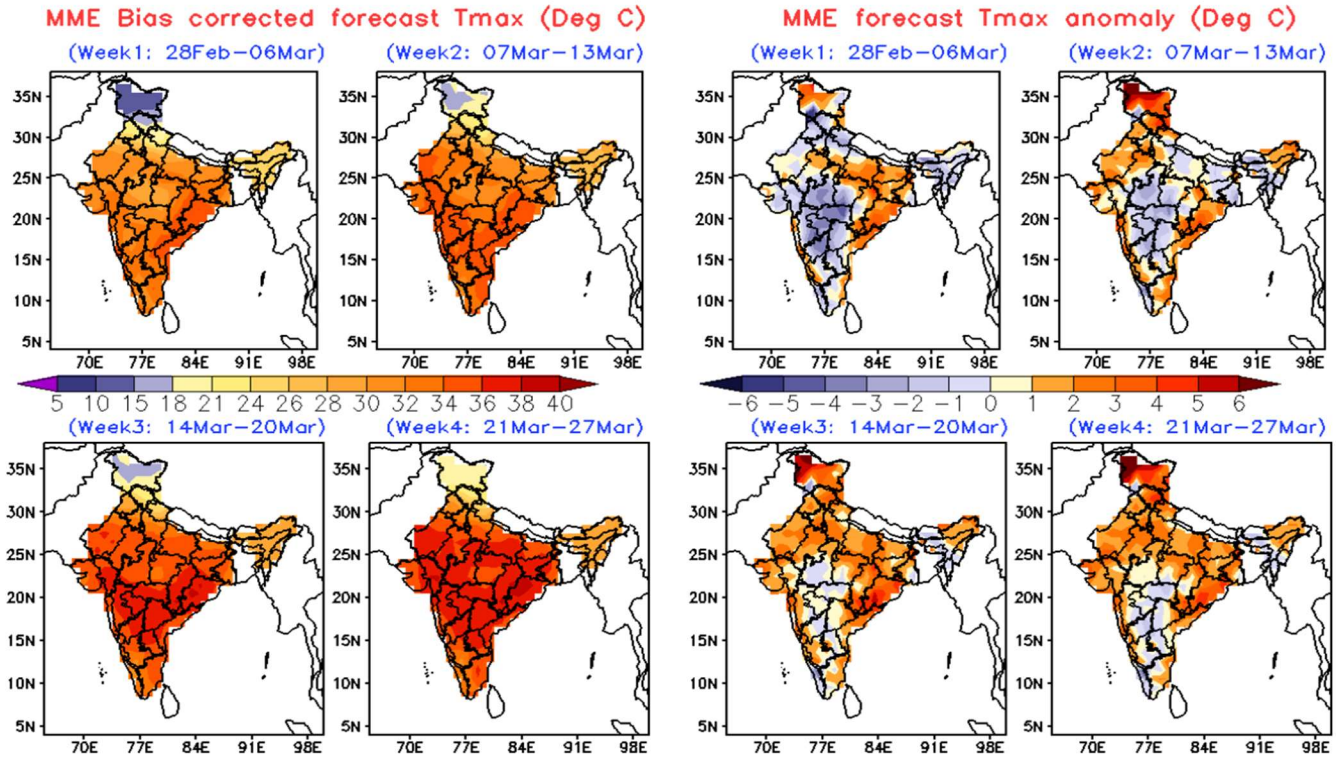
- From the sample of 80 farms, we see that while last year's conditions provided a higher yield this year's expected yield is down. The net impact of yield change per hectare is highest in Hardoi where yield has decreased by 10.88 qtl/ha.
- We can see here that even though the area sown this year is higher compared to last year, there is a contrasting fall in yield this year.
- This contrasts with what we saw above for wheat sowing area increase as a positive sign confirming confident government figures of record high production. Which seems now a difficult possibility, specifically talking with respect to Eastern U.P.
- Despite variations between districts, the overall trend highlights a consistent reduction in yield potential compared to last year.

- From the selected region last year's output was **4.8MMT** and this year's expected crop output is at **4.7MMT,** which means the impact of yield change and increase in sowing area is going to lead to same produce as last year as of now.
- But the major factor at play here is the rise in temperatures which will increase in March, if the temperatures go haywire and we face a heat stress in the region then the yield is going to decrease further significantly.



What is the impact of temperature rise?

- The farmers we spoke to in the survey were optimistic about the yield and did not consider the effect of rising temperatures in the coming few weeks. Upon asking about the situation if the temperature does rise there was little concern about temperature below 35 degrees Celsius given that they water the crop during high temperatures in the intervals of 2 weeks considering this, watering 2 times before the harvest would do the job.
- What also will be of concern if and when the temperature rises above 31 degrees Celsius is the loss of moisture which will lead to smaller grain formation leading to lower yield. To maintain the moisture in the field and proper nutrition, sprinkling of NPK and regular watering will be a necessity to save the crop from major damage.



- According to IMD the prediction for the coming weeks is concerning, giving an indication for a heatwave in which it would be difficult to save the crop with any amount of watering.
- Another major concern was the absent monsoon in the region and the cost of irrigation becoming expensive.

There is no alternative that could save the crop from rising temperatures, there will be yield loss.

Other major concerns?

- One major concern apart from the rising temperatures is that of westerly winds. Crops this year are weaker compared to last year. If the westerly winds increase that could damage the crops. Even if farmers water the crops and the wind blows that could also break the crop leading to yield loss.
- Another concern is regarding animal attacks that has led to destruction of 5-10% of the crop in certain but limited areas.
- **Barabanki** according to 2022-23 government statistics contributes 2% of the overall region of wheat crop in Uttar Pradesh but this year it seems wheat's area has been majorly replaced by Potato and Mustard. And the limited wheat sown there, most of it is for self-consumption.

Conclusion: Farmers are optimistic that the increased sowing this year will result in a higher yield. However, concerns arise when discussing the impact of rising temperatures, as there is certainty about yield losses in the region.

In Hardoi and Bareilly, yield loss is inevitable due to late sowing, poor crop quality, and sandy, less fertile soil. In contrast, Shahjahanpur is expected to have a good harvest, as the crop was sown on time in November, appears healthy, and will reach maturity within 10–15 days. The fertile soil further supports favorable crop conditions, though some yield loss is still anticipated.

In Barabanki and Sitapur, fewer landholdings are observed. Barabanki has significantly reduced wheat cultivation, shifting to other crops, while Sitapur faces the same risks as Hardoi and Bareilly.

Last year, the region produced 4.8 MMT of crops, and this year's expected output stands at 4.7 MMT. This suggests that the combined effect of yield fluctuations and an increase in sown area keep production levels nearly the same as last year. However, a key concern is the rising temperatures, which are expected to climb further in March. If extreme heat stress occurs, yields

could decline even more significantly. Govt. has also reduced its production estimates to 113.3 MMT for the season.

The key question remains: Will the increased sowing in the safer regions of Madhya Pradesh and Gujarat compensate for the yield losses in Uttar Pradesh? The extent of the production difference compared to last year is yet to be determined. While a decrease in yield is certain, the exact scale of the decline remains uncertain.

Here are some pictures from the tour