Report on
Questionnaire Based Field Survey of Kharif Groundnut 2022

Submitted to

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Executive Summary

Groundnut is an important oilseed crop in India occupying first position in terms of area and second in terms of production after soybean. It plays a major role in bridging the vegetable oil deficit in the country. The seeds of groundnut are also used extensively as animal feed supplement due to its high protein nature. Groundnut is available throughout the year due to a two-crop cycle harvested in March and October. However, in India it is grown mostly under rain-fed conditions and nearly 80% of annual acreage and production comes from Kharif crop (June-October). With an objective of assessment of groundnut production from Kharif-2022 crop, an extensive survey was undertaken in seven major groundnut growing states during the peak harvesting period. Different teams moved across the major groundnut growing regions and interviewed 3000 groundnut farmers in 42 districts across the seven states. For the information of the stakeholders in the export trade, a brief presentation of the estimates was made at the Annual Trade Meet of the IOPEPC on 6th November, 2022 at Dubai, UAE.

During Kharif-2022 all India groundnut acreage was 45,59,000 hectares. Seven states, Gujarat (17,09,000 ha; 37%), Rajasthan (7,89,860 ha; 17%), Andhra Pradesh (5,06,554 ha; 11%), Karnataka (3,69,810 ha; 8%), Madhya Pradesh (4,50,000 ha; 10%), Maharashtra (1,61,000 ha; 4%) and Uttar Pradesh (1,25,998; 3%) jointly accounted for about 90% of the national acreage. At the national level, there was a decrease in acreage by 7% with respect to Kharif-2021. The maximum decrease was observed for Karnataka (-22%) while maximum increase was observed for Madhya Pradesh (18%). Decrease was also observed in Maharashtra (-21%), Andhra Pradesh (-19%), and Gujarat (-11%).

In the states of Gujarat, Rajasthan, Maharashtra and Uttar Pradesh Groundnut has reached its maximum sown extent by the second fortnight of July. In Madhya Pradesh and Andhra Pradesh maximum sowing was completed by the first fortnight of August.

Remote Sensing Based Groundnut Acreage was estimated in Junagadh, Gujarat, Jodhpur, Rajasthan and Shivpuri, Madhya Pradesh. In the remaining districts cloud free optical data was not available. Signature of the crop was identified with the help of Ground Control Points (GCPs) collected during the field survey using PInCER GCP Phone App.

Among the surveyed states, the highest yield of 2179 kg/ha was estimated for Rajasthan, followed by 1647 kg/ha for Gujarat, 1453 kg/ha for Madhya Pradesh, 1279 kg/ha for Karnataka, 1079 kg/ha for Maharashtra, 830 kg/ha for Uttar Pradesh and 429 kg/ha for Andhra Pradesh. The national average yield was estimated at 1498 kg/ha. The combined production of these seven states was estimated at 68,30,666 MT which accounted for about 90% of the estimated national production. With 28,14,474 MT, Gujarat contributed

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41% of the national production followed by Rajasthan (17,21,136 MT; 25%,), Madhya Pradesh (6,53,986; 10%), Karnataka (4,73,000 MT; 7%), Andhra Pradesh (2,17,449 MT; 3%), Maharashtra (1,76,678 MT; 3%) and Uttar Pradesh (1,04,544 MT; 2%) while the joint contribution of the remaining states was estimated as 6,69,399 MT i.e., 10%.

In Kharif 2022, the rainfall was irregular and occurred in large excess in the groundnut growing districts of Andhra Pradesh, Karnataka, Gujarat, Maharashtra belt during the peak sowing season and in Uttar Pradesh and Madhya Pradesh during the peak harvesting season. Due to which acreage is decrease by 7 % and yield decrease in most of the states, Kharif 2022 production (68.30 lakh MT) was estimated to be less than that of Kharif-2021 season (82.03 lakh MT).

Remote sensing based crop health analysis was carried out in the groundnut growing districts using Normalized Difference Vegetation Index (NDVI) when the crop was at its peak vegetative stage in the month of August to determine the crop vigor. NDVI or Normalized Difference Vegetation Index is the ratio of reflectance in NIR vs Red Band and is an important indicator of vegetation crop health. Poor Condition reflects when the NDVI value is below 0.3 during the peak vegetative stage, Moderate Condition is when the value is between 0.3 to 0.45 and good condition is when the value is beyond 0.45.for the same time period. In the states of Gujarat, Andhra Pradesh crop health was found to be moderate in all the districts. In the state of Rajasthan and Uttar Pradesh crop health was mostly good. In the state of Madhya Pradesh crop health was good except in few patches of Shivpuri district were health was found to be in poor category. In the state of Maharashtra crop health was mostly good except in few patches of Nasik and Satara districts were health was found to be in poor category. In the state of Karnataka groundnut crop health was found to be in good to moderate category in the districts of Belgavi, Chitradurga and Tumkur. In Vijayapura, Dharwad and Gadag the health of few cropland patches was found to be in poor category.

1. Introduction

Groundnut (*Arachis hypogaea* L.) is commonly called the poor man's nut. It is a leguminous crop plant which is widely cultivated in the tropics and subtropics between 40°N and 40°S latitudes. Groundnut is not only an important oilseed crop of India but also an important agricultural export commodity.

With annual all-season coverage of about 50 lakh hectares, globally India ranks first in groundnut acreage and with an output of approx. 80-85 lakh MT (in shell groundnuts), second in production. Although in various states of India groundnut is cultivated in one or more (Kharif, Rabi and Summer) seasons, nearly 80% of acreage and production comes from kharif crop (June-October). For estimating groundnut production from kharif-2022 crop season, a well-planned and extensive crop survey was undertaken in major groundnut growing states of India with a view to providing estimates as early as third week of October 2022.

2. Importance and Objectives of Crop Survey

The bulk arrival of Kharif groundnut crop in the marketing yards begins usually in the third week of October and continues up to the second week of November. Being by and large a rain dependent crop, the production of Kharif groundnut in various regions of India varies considerably from year to year.

The second advance estimate, the earliest realistic crop estimates are announced by Government of India in January/February, i.e., three-four months after the bulk harvest of the Kharif crops. If the estimates for Kharif-2022 groundnut crop are made available close on the heels of the harvesting season (first fortnight of November), it would be very helpful in making right decisions about procurement, processing and export. Therefore, with a view to fulfilling the crucial need of the stakeholders, a survey was undertaken in seven major groundnut growing states of India viz. Andhra Pradesh, Gujarat, Madhya Pradesh, Maharashtra, Karnataka, Rajasthan and Uttar Pradesh. A brief presentation of the estimates was made at the Annual Trade Meet of the IOPEPC on 6 November 2022 at UAE. The details of the methodology adopted for survey and the estimates are described in this report.

3. Methodology

3.1 District wise and state wise groundnut acreage

The data on weekly progress of state-wise coverage of Kharif 2022 groundnut crop was obtained from the website of the Directorate of Economics and Statistics, Government of India. Information on district wise final acreage was obtained from the state departments of agriculture concerned either through correspondence or by downloading the information from the website of the respective state department.

3.2 Selection of states and districts

The states were first arranged in decreasing order of their groundnut acreages and then only those states were identified as would jointly account for more than 75% of the national acreage. Similarly, within a state, the districts were first arranged in decreasing order of their acreages and then as many districts as would jointly account at least 75% of the acreage of the respective states were selected.

3.3 Determination of number of farmers to be interviewed

In each state, efforts were made to interview as many farmers as would be equal to 0.1 per cent of the figures for the Kharif 2022 groundnut acreage of that state (e.g., for a state having an acreage of 10,000 hectares, at least 10 farmers were to be interviewed.)

3.4 Composition of the survey teams

Orientation programme had been conducted for entire field team, whom were involved to carry out the field survey, prior to kick-off the survey. A pre-designed structured questionnaire (Annexure 1) was used for recording the data. Selection of the representative villages/farmers was done after consultation with the local authorities.

3.5 GPS Tagging of movement of survey teams

Geolocation of fields were done through RMSI pincer app. The latitude and longitude of points where then superimposed on the respective state/district maps to get a clear picture of the route followed by the interview teams.

3.6 Rainfall Data

Month wise, weekly (June, July, August, September and October first fortnight) data for rainfall along with its departure from the normal was downloaded from the website of IMD (Indian Meteorology Department). This data pertained to major groundnut growing districts of India.

3.7 Scheduling of Survey

The survey was undertaken during the peak harvesting period of Kharif groundnut crop i.e. during the last week of September to the third week of October to have maximum number of farmers interviewed in their respective fields when the crop had been just harvested, being harvested or was about to be harvested.

3.8 Estimation of yield and production of surveyed states

The figures for the average groundnut (in-shell) yield of each district were estimated by taking arithmetic mean of the expected/realized yield as reported by the farmers of the respective districts. Since different districts follows different units of yield, the final yield was converted to 'kg/ha'. For each district, the production of groundnut was estimated by multiplying the estimated average yield of the district with the acreage (in hectares) of that district. The production was expressed as 'MT' (metric tonnes).

The anticipated production of non-surveyed districts was calculated by multiplying the figures of the collective acreages of non-surveyed districts with the weighted average yield of the surveyed districts in the states concerned. The total anticipated production of a state was calculated by summing up the figures for anticipated production in the surveyed and non-surveyed districts.

3.9 Estimation of average yield and production of non-surveyed states

The average yield of the non-surveyed states was assumed to be equal to that of the weighted average yield of the surveyed states. The production from each of the non-surveyed state was calculated by using the figures of the weighted average yield of the states and the acreage of state concerned. The all India production was calculated by summing up the anticipated production of the surveyed states and the non-surveyed states.

4. Results & Discussions

4.1 Kharif 2022 Groundnut Crop Acreage

According to the Directorate of Economics and Statistics, GOI, all India Kharif 2022 the groundnut acreage was 45,59,000 hectares. The states which jointly accounted for about 90% of the national acreage were

Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh The state wise breakup of acreages in these six states is given in Table 1.

Table 1: Kharif 2022 Groundnut Acreage (States arranged in decreasing order of acreage)

S No.	State	Acreage(ha)	Share (%)
1	Gujarat	17,09,000	37%
2	Rajasthan	7,89,860	17%
3	Andhra Pradesh	5,06,554	11%
4	Madhya Pradesh	4,50,000	10%
5	Karnataka	3,69,810	8%
6	Maharashtra	1,61,000	4%
7	Uttar Pradesh	1,25,998	3%
8	Others	4,46,778	10%
9	**All India**	**45,59,000**	**100**

A total of 37 districts across the seven identified states were covered by survey. Total of 2508 groundnut farmers were interviewed as per quality standards. State wise number of districts covered, and the farmers interviewed along with the dates of start and completion of survey is shown in Table 2.

Table 2: State wise particulars of Kharif 2022 groundnut crop survey

State	Acreage(ha)		Number		Field Survey Period	
		Districts	Farmers	From		To
Gujarat	17,09,000	8	1071	24th September, 2022	20th October 2022
Rajasthan	7,89,860	7	253	5th October, 2022	20th October 2022
Andhra Pradesh	5,06,554	2	249	26th September, 2022	20th October 2022
Madhya Pradesh	4,50,000	5	383	25th September, 2022	20th October 2022
Karnataka	3,69,810	6	205	26th September, 2022	20th October 2022
Maharashtra	1,61,000	4	221	26th September, 2022	20th October 2022
Uttar Pradesh	1,25,998	10	126	26th September, 2022	20th October 2022

The district boundary maps of seven states showing the surveyed districts (color shaded) and also the GPS points visited by the survey teams are shown in Figures 1 to 14.
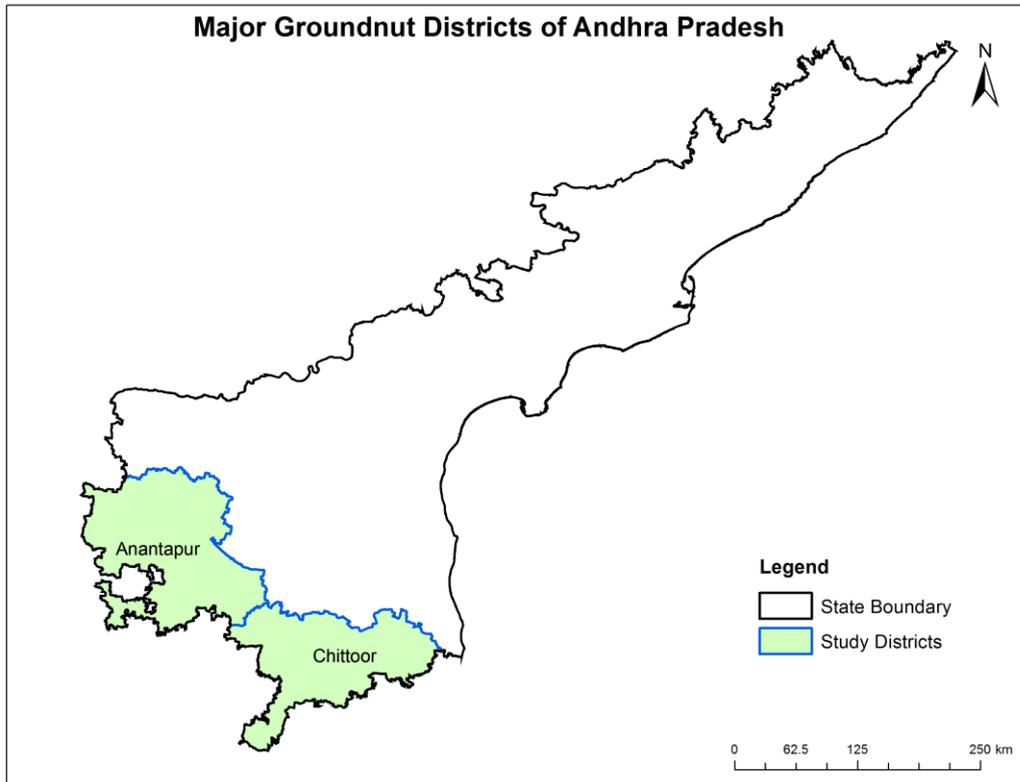
Figure 1 Study Area in Andhra Pradesh State
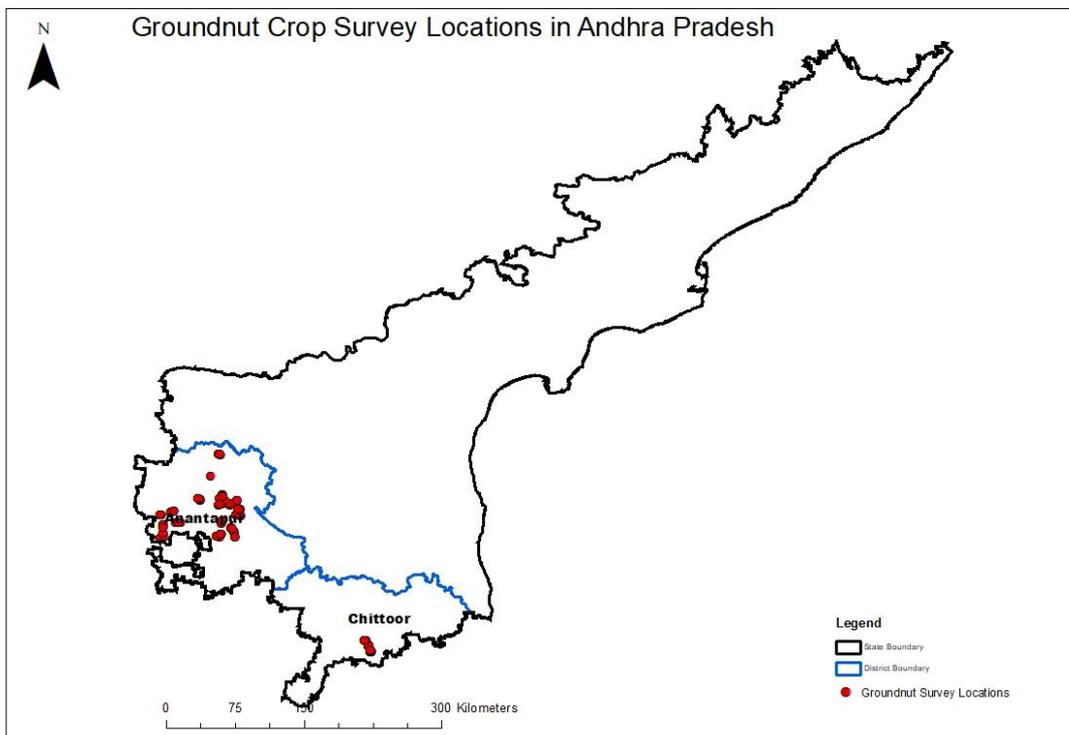
Figure 2 Survey Locations to collect Primary data related to Groundnut in Andhra Pradesh

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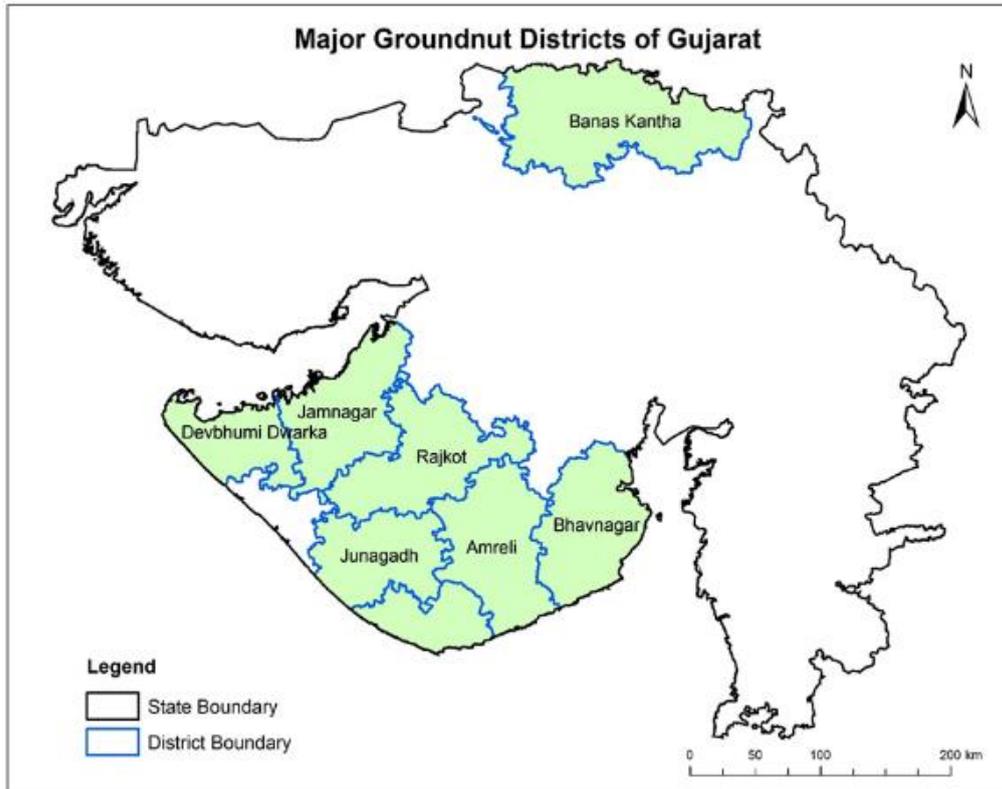
Figure 3 Study Area in Gujarat State
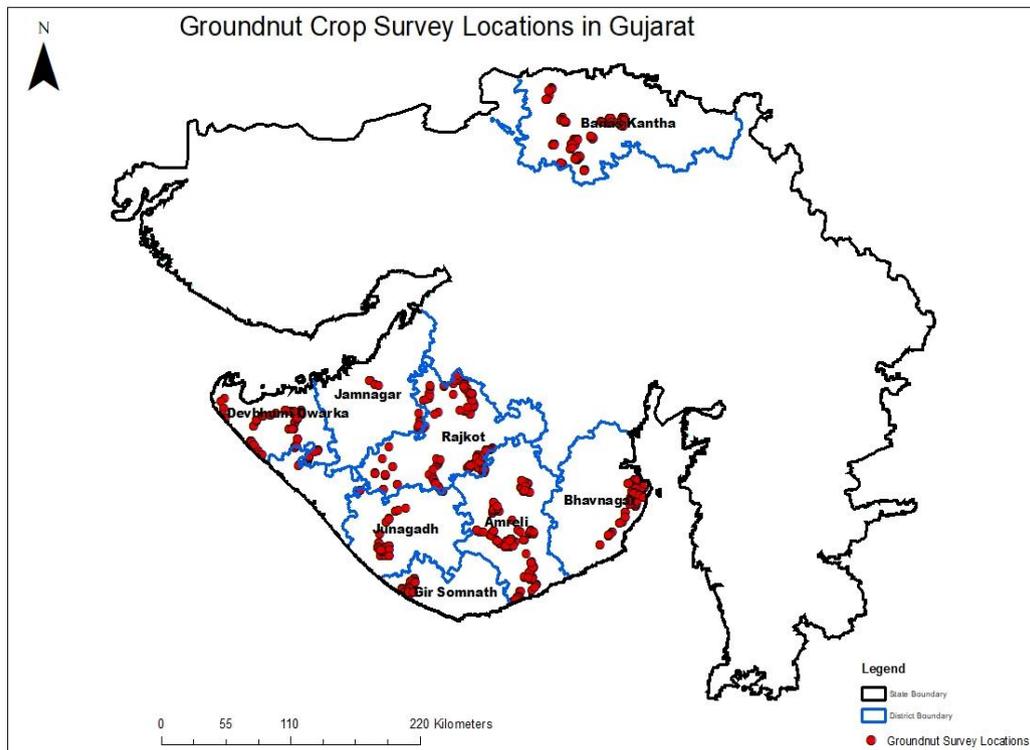
Figure 4 Survey Locations to collect Primary data related to Groundnut in Gujarat
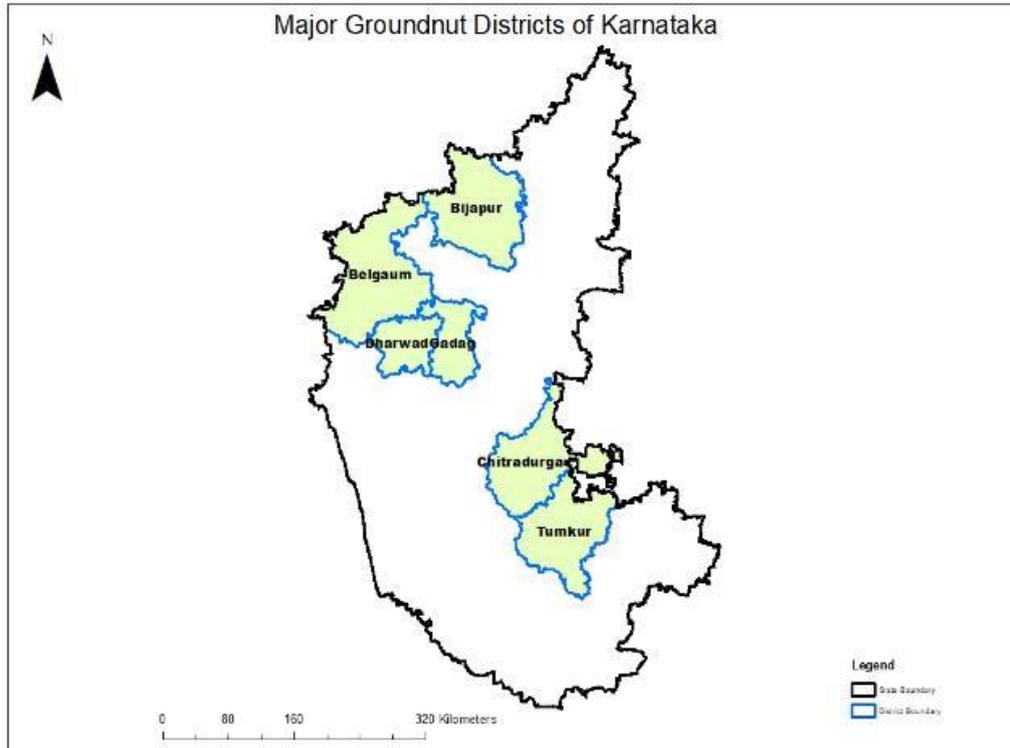
Figure 5 Study Area in Karnataka State
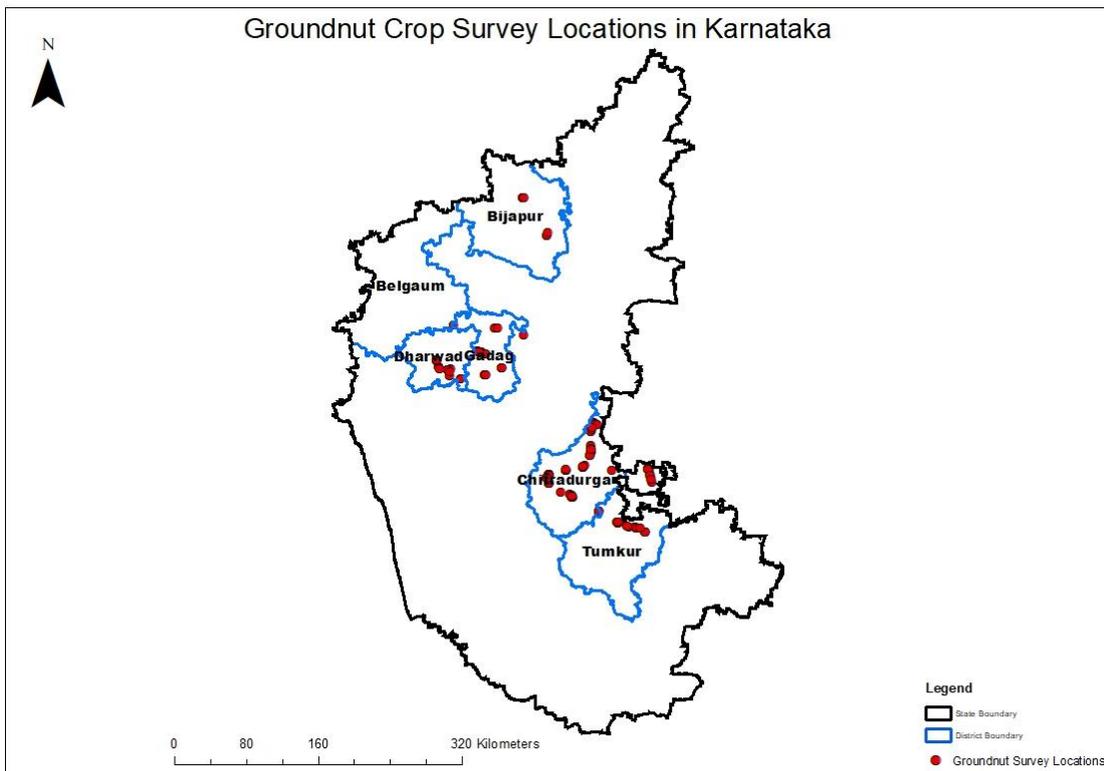
Figure 6 Survey Locations to collect Primary data related to Groundnut in Karnataka
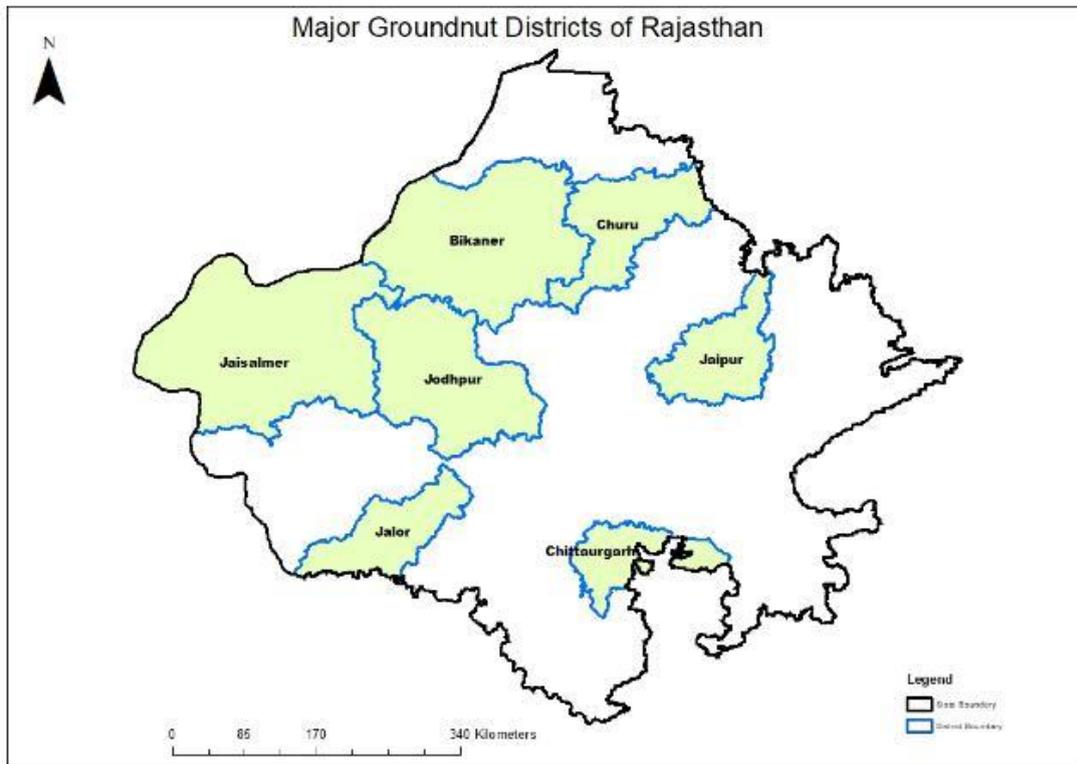
Figure 7 Study Area in Rajasthan State
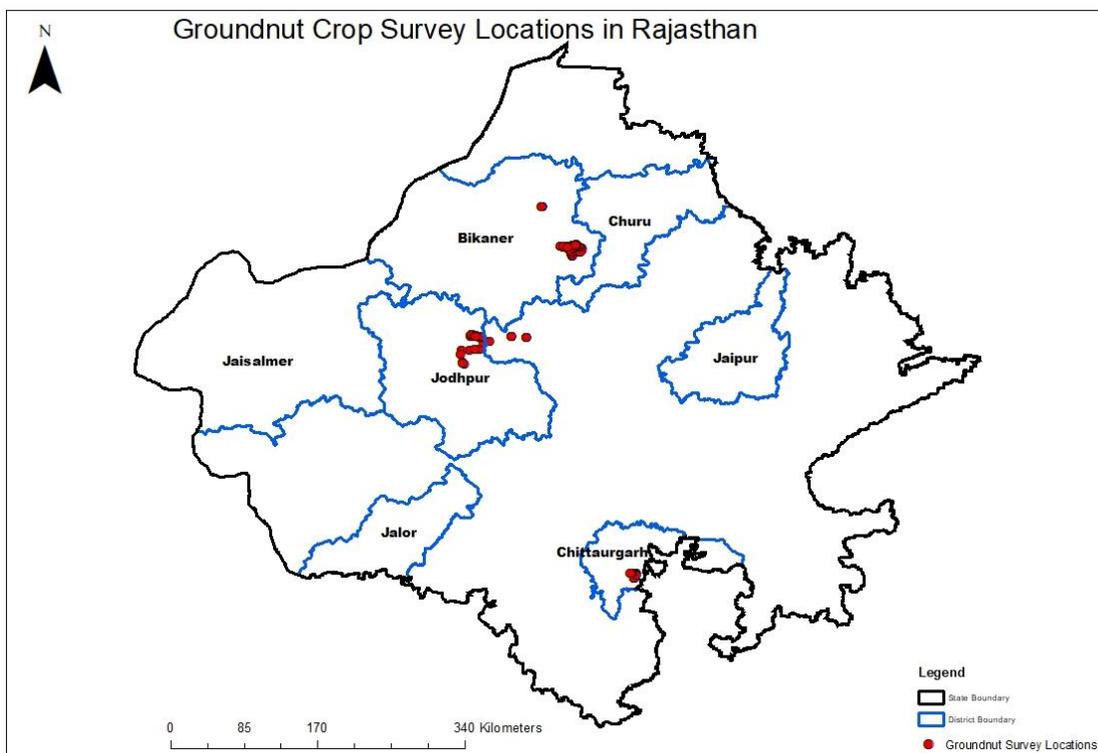
Figure 8 Survey Locations to collect Primary data related to Groundnut in Rajasthan
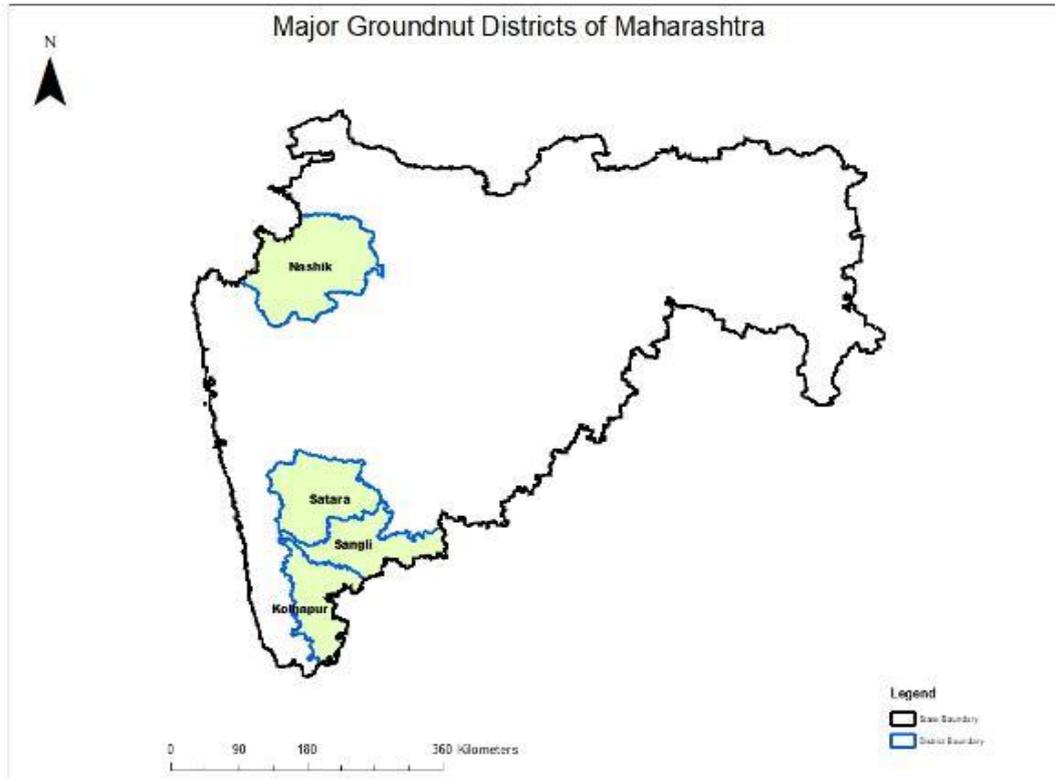
Figure 9 Study Area in Maharashtra State
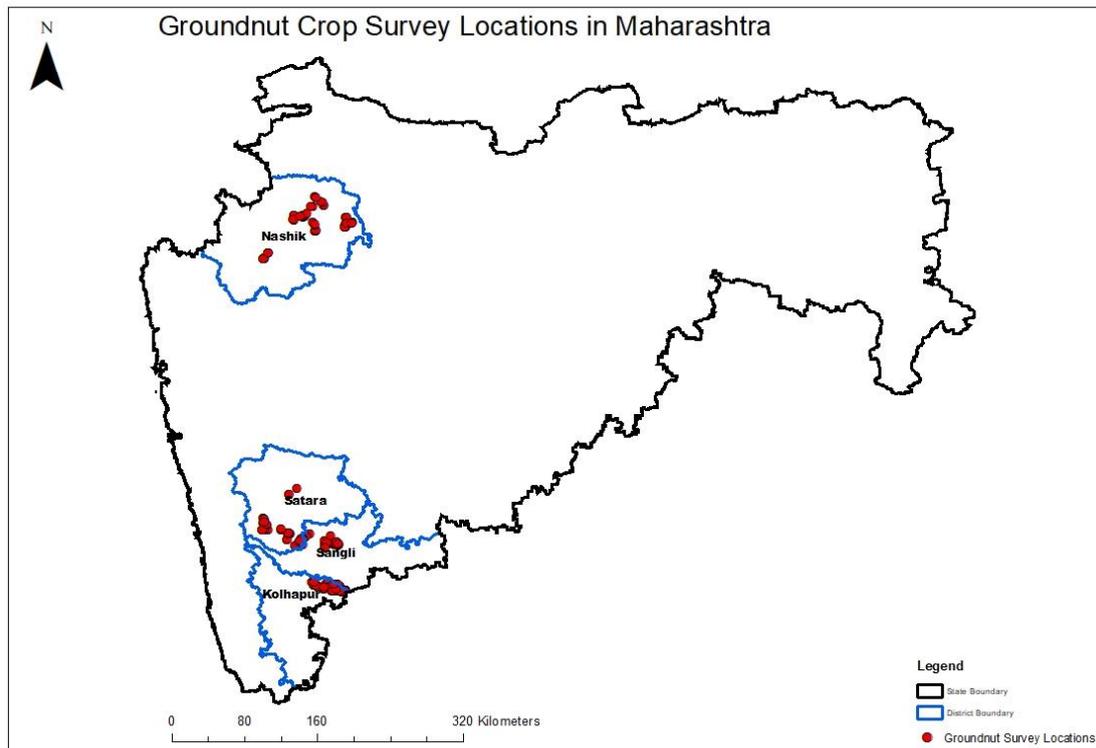
Figure 10 Survey Locations to collect Primary data related to Groundnut in Maharashtra
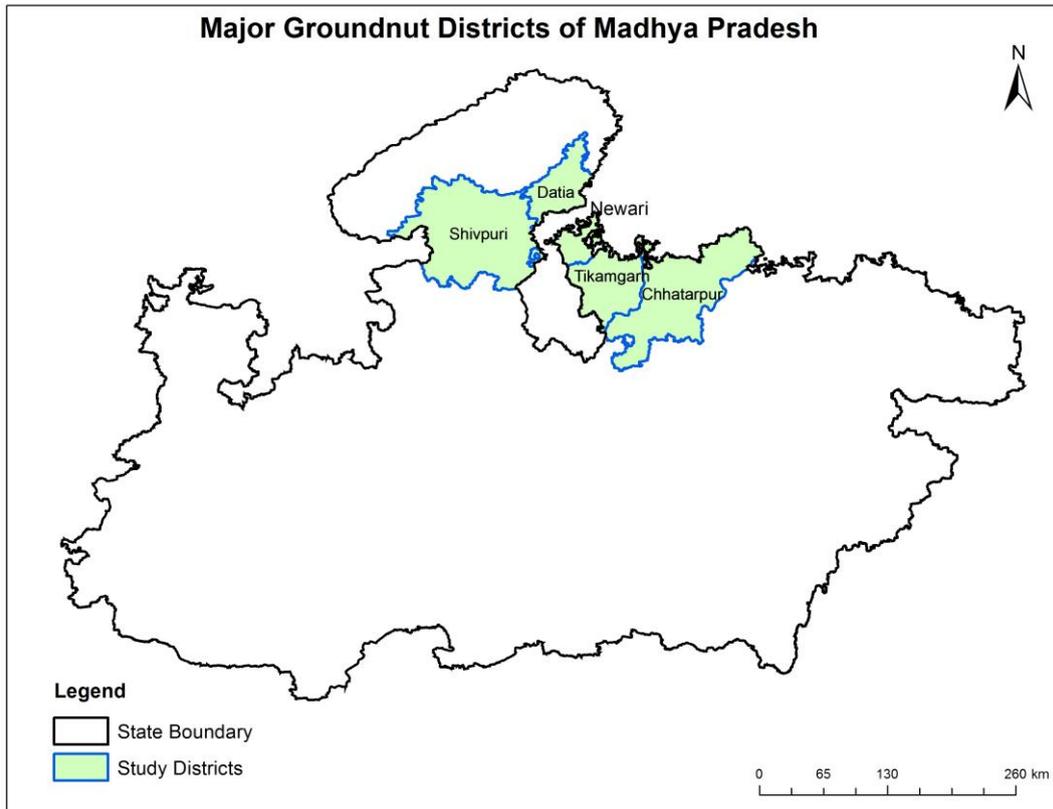
Figure 11 Study Area in Madhya Pradesh State
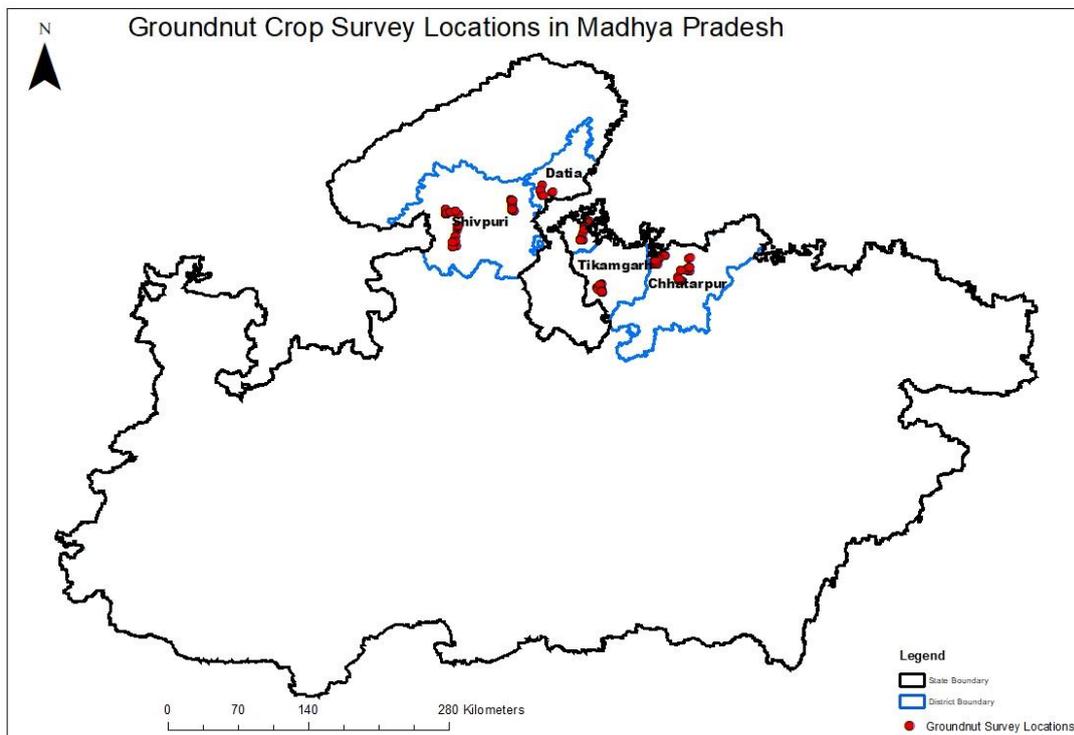
Figure 12 Survey Locations to collect Primary data related to Groundnut in Madhya Pradesh
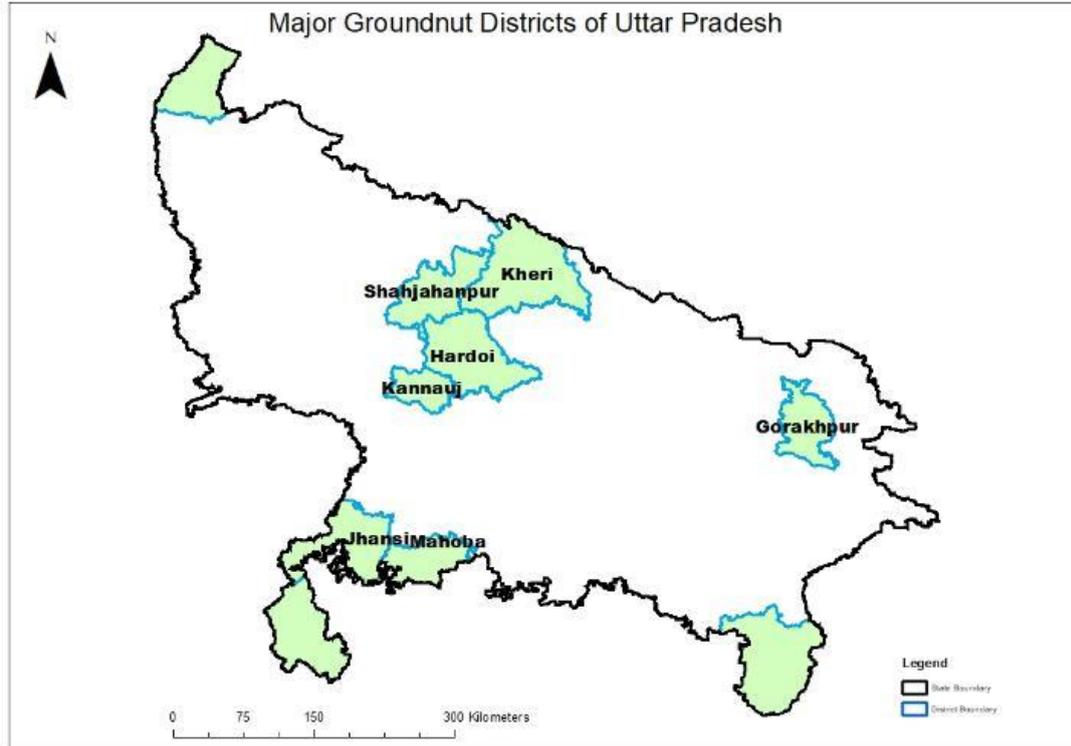
Figure 13 Study Area in Uttar Pradesh State
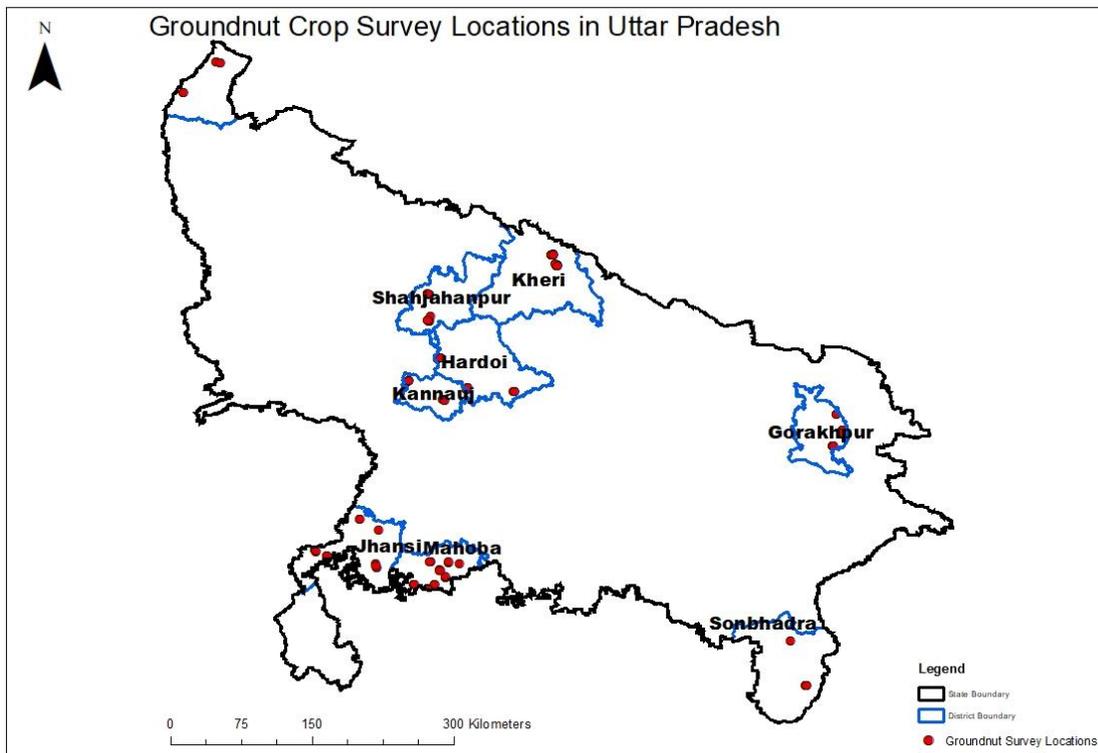
Figure 14 Survey Locations to collect Primary data related to Groundnut in UP

4.2 Period of Sowing

In the surveyed states, on a combined basis the sowing operations began in the first week of June and were concluded in the second week of August. Sowing Progression in seven groundnut growing states is given in Table 3.

Table 3: Sowing Progression in Seven Groundnut States of India.

State	4th July	11th July	18th July	25th July	1st August	8th August	15th August	22nd August	29th August
Andhra Pradesh	14%	28%	40%	57%	77%	94%	98%	99%	100%
Gujarat	59%	83%	91%	95%	98%	99%	99%	100%	100%
Karnataka	32%	41%	46%	58%	70%	77%	95%	99%	100%
Uttar Pradesh	50%	68%	82%	91%	92%	98%	100%	100%	100%
Maharashtra	31%	69%	81%	91%	94%	96%	98%	98%	100%
Rajasthan	64%	77%	94%	98%	99%	99%	100%	100%	100%
Madhya Pradesh	33%	45%	72%	80%	89%	92%	98%	100%	100%

In the states of Gujarat, Rajasthan, Maharashtra and Uttar Pradesh Groundnut has reached its maximum sown extent by the second fortnight of July. In Madhya Pradesh and Andhra Pradesh maximum sowing was completed by the first fortnight of August.

4.3 Comparison of 2022 Acreage w.r.t. 2021 Acreage

At National level compared to Kharif 2021, there was decrease in groundnut acreage by 7%. Kharif-2022 all India groundnut acreage was 45, 59,000 hectares. Gujarat, Rajasthan, Andhra Pradesh, Karnataka, Madhya Pradesh, Maharashtra and Uttar Pradesh jointly accounted for 41, 12,222 hectares i.e., 90% of the national acreage. The Kharif 2022 crop acreages of the surveyed states, their shares in the national acreage and change in acreage with respect to Kharif 2021 are given in Table 4

Table 4 Change in Kharif 2022 groundnut acreage w.r.t. 2021 acreage

State	Kharif 2021		Kharif 2022		
	Acreage(ha)	Share (%)	Acreage(ha)	Share (%)	Change
Gujarat	19,09,600	39	17,09,000	37	-11
Rajasthan	7,76,900	16	7,89,860	17	2
Andhra Pradesh	6,27,200	13	5,06,554	11	-19
Karnataka	4,75,400	10	3,69,810	8	-22
Madhya Pradesh	3,82,000	8	4,50,000	10	18
Maharashtra	2,02,600	4	1,61,000	4	-21
Uttar Pradesh	1,16,000	2	1,25,998	3	9
Sub Total	44,89,700	91	41,12,222	90	-8
Others	4,24,600	9	4,46,778	10	5
All India	49,14,300	100	45,59,000	100	-7

Source: Department of Economics and Statistics (Govt. of India)

Compared to Kharif 2021 there was decrease in acreage in three states, namely Karnataka (-22%), Maharashtra (-21%), Andhra Pradesh (-19%) and Gujarat (-11%).The maximum increase in acreage was in Madhya Pradesh (18%), Rajasthan (6.4%) and Uttar Pradesh (9%). On all-India basis, there was decrease in

area by 7%.

Remote Sensing based kharif groundnut acreage was estimated in three districts namely, Junagadh of Gujarat, Jodhpur of Rajasthan and Shivpuri of Madhya Pradesh. The same has been shown in Figure 15 to 17 respectively.
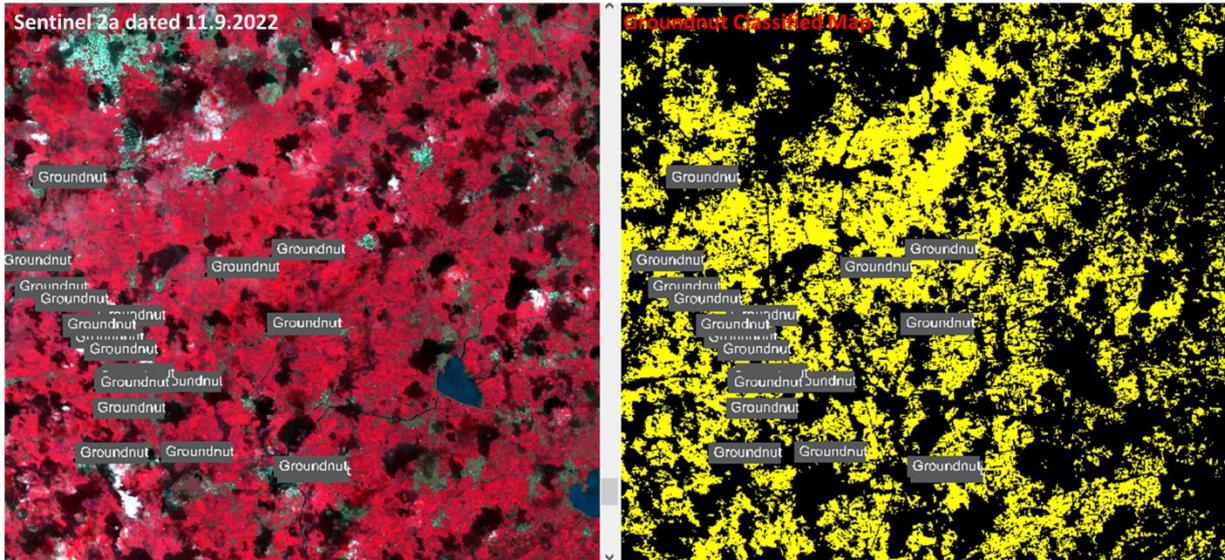
Figure 15 Groundnut Crop Spread in Junagadh District of Gujarat

Remote Sensing Based Kharif Groundnut Acreage in Junagadh is 1,97,093 ha
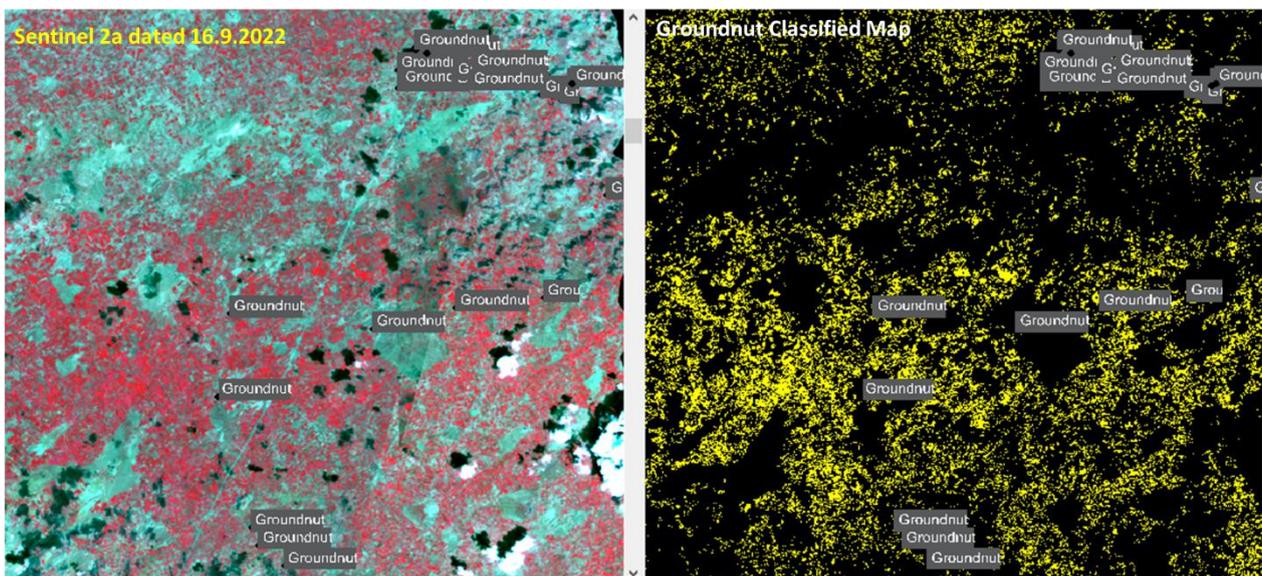
Figure 16 Groundnut Crop Spread in Jodhpur District of Rajasthan

Remote Sensing Based Kharif Groundnut Acreage in Jodhpur is 1,57,037 ha.

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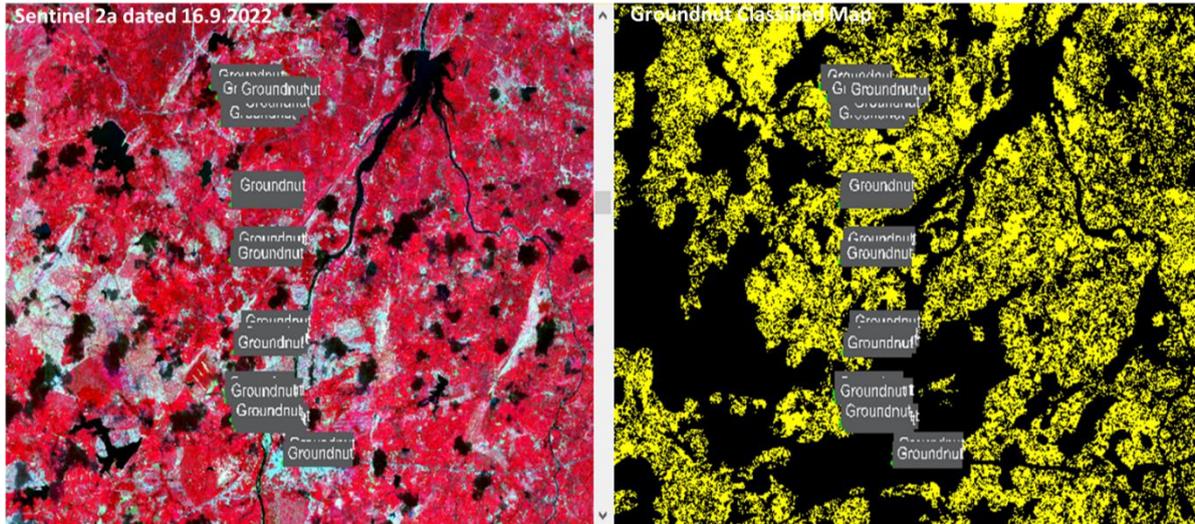
Figure 17 Groundnut Crop Spread in Shivpuri District of Madhya Pradesh

Remote Sensing Based Kharif Groundnut Acreage in Shivpuri is 1, 27,426 ha. Based on district wise acreages in the seven states, 42 districts were identified for survey in each state. The names of the districts and their respective share (%) in the state acreage are given in tables 5 to 11.

4.4 Remote Sensing Based Crop Health

Remote sensing based crop health analysis was carried out in the groundnut growing districts using Normalized Difference Vegetation Index (NDVI) when the crop was at its peak vegetative stage in the month of August to determine the crop vigor. NDVI or Normalized Difference Vegetation Index is the ratio of reflectance in NIR vs Red Band and is an important indicator of vegetation crop health. Poor Condition reflects when the NDVI value is below 0.3 during the peak vegetative stage, Moderate Condition is when the value is between 0.3 to 0.45 and good condition is when the value is beyond 0.45.for the same time period.

4.4.1. Gujarat

Remote Sensing Based Crop Health is mapped in 8 districts of Gujarat as shown in Figure 18.
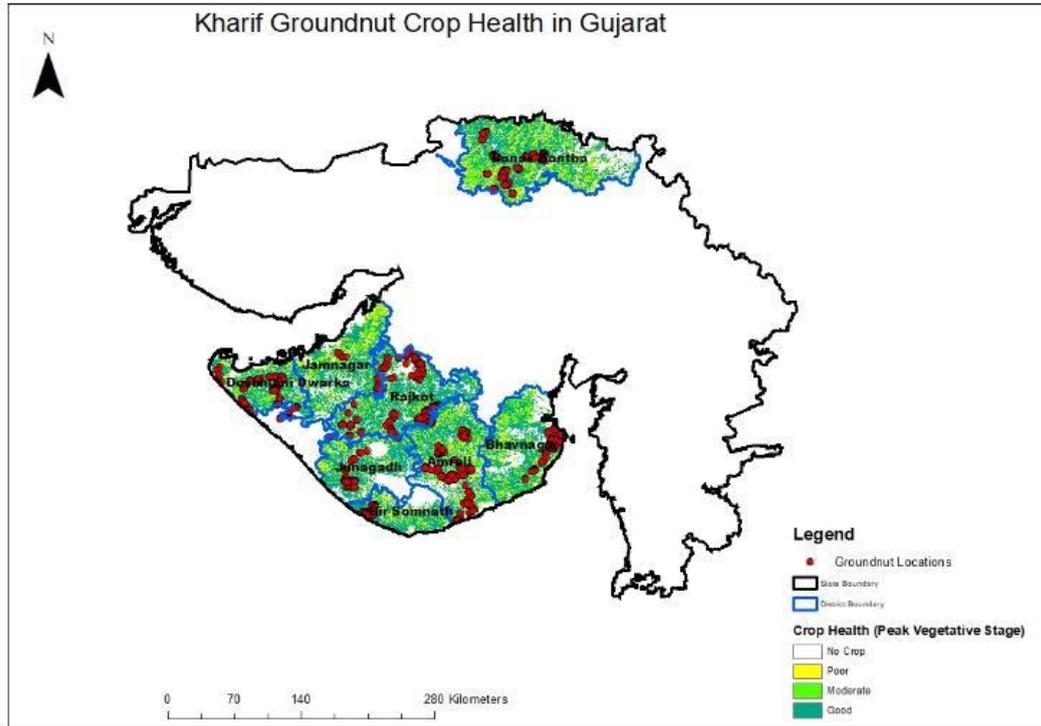
Figure 18 Remote Sensing Based Overall Crop Health Map of Gujarat

Kharif Groundnut Crop Health was found to be moderate in all the districts of Gujarat.

4.4.2. Rajasthan

Remote Sensing Based Crop Health is mapped in 8 districts of Rajasthan as shown in Figure 19.
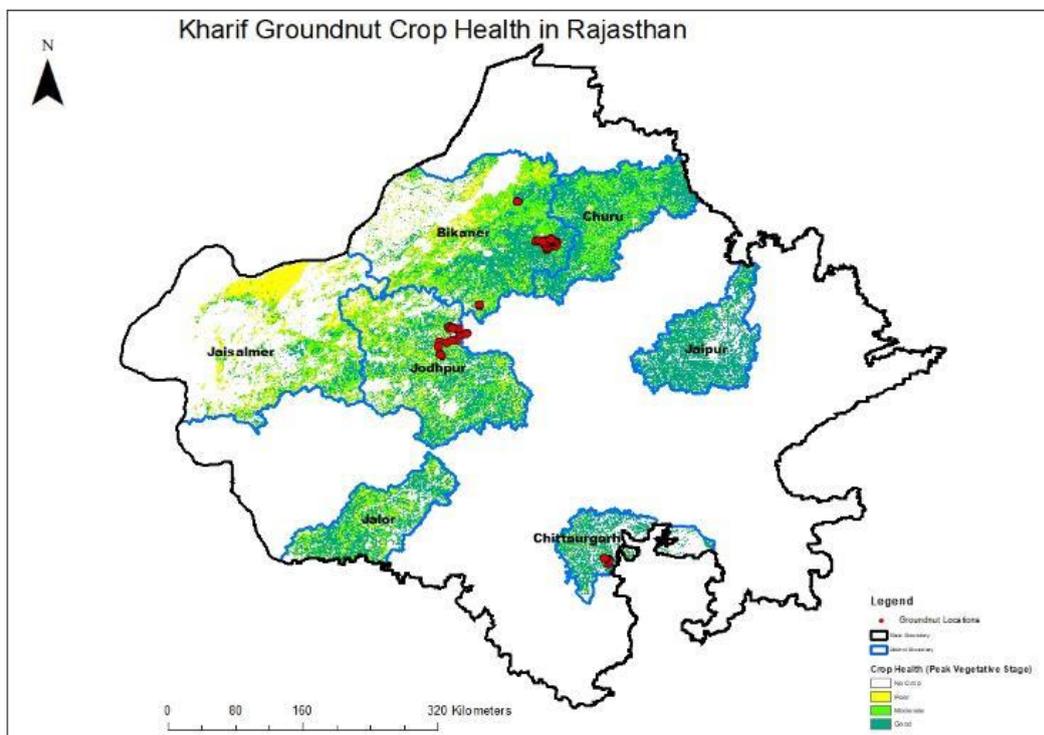
Figure 19 Remote Sensing Based Overall Crop Health Map of Rajasthan

Kharif Groundnut Crop Health was found to be moderate to good all the districts of Rajasthan.

4.4.3. Madhya Pradesh

Remote Sensing Based Crop Health is mapped in 5 districts of Madhya Pradesh as shown in Figure 20.
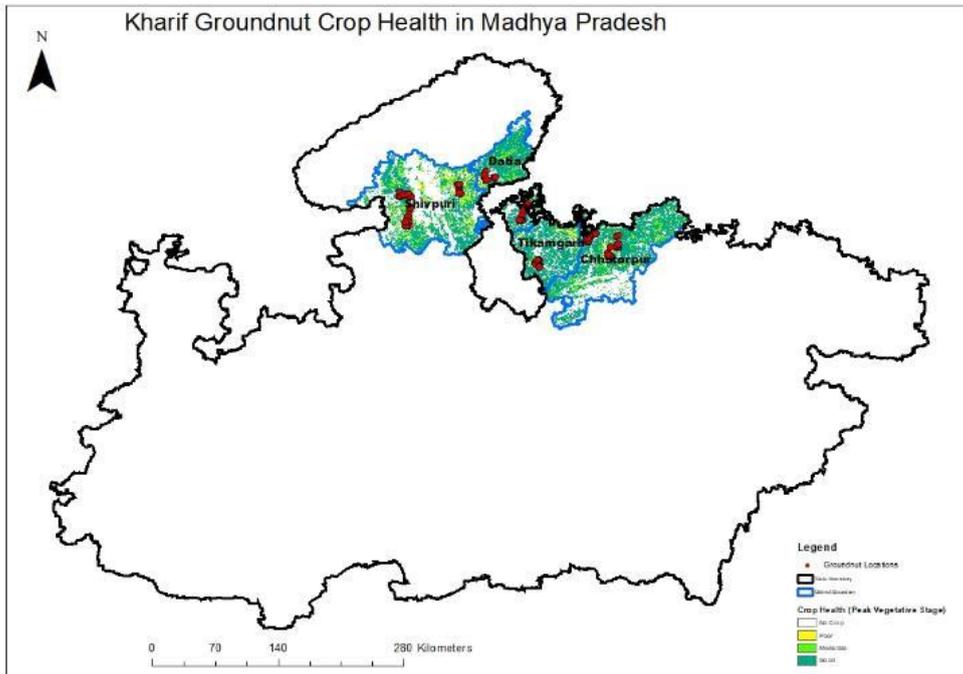
Figure 20 Remote Sensing Based Overall Crop Health Map of Madhya Pradesh

Kharif groundnut crop health was found to be good all the districts of Madhya Pradesh except in Shivpuri where few patches were in poor health during the month of August.

4.4.4. Andhra Pradesh

Remote Sensing Based Crop Health is mapped in 3 districts of Andhra Pradesh as shown in Figure 21.
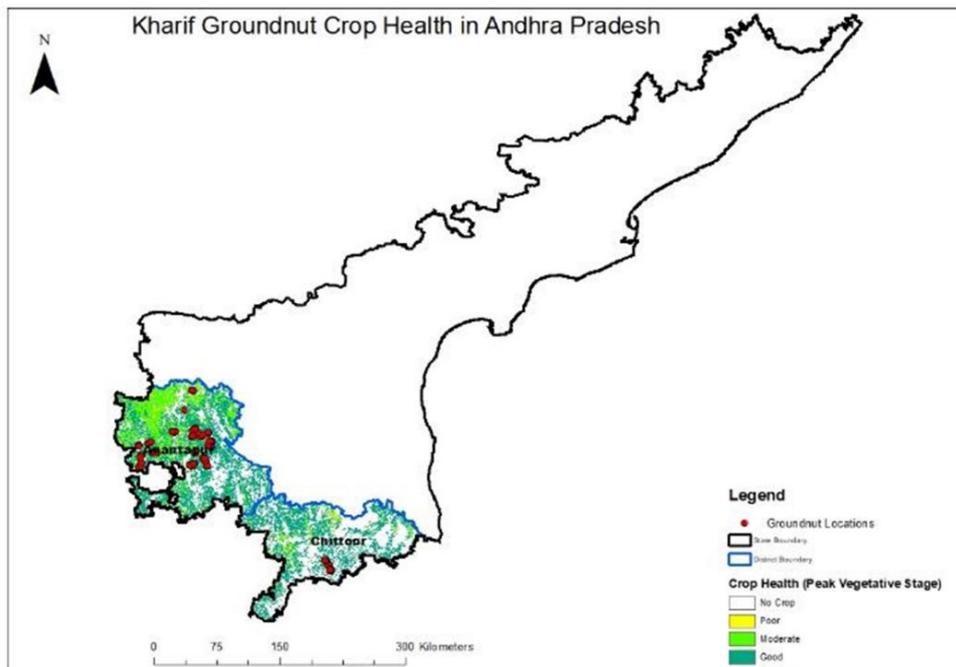
Figure 21 Remote Sensing Based Overall Crop Health Map of Andhra Pradesh

Kharif Groundnut Crop Health was found to be moderate in both the districts of undivided Ananthapuram (Ananthapuram + Sri Satya Sai) and Chittoor.

4.4.5. Maharashtra

Remote Sensing Based Crop Health is mapped in 4 districts of Maharashtra as shown in Figure 22.
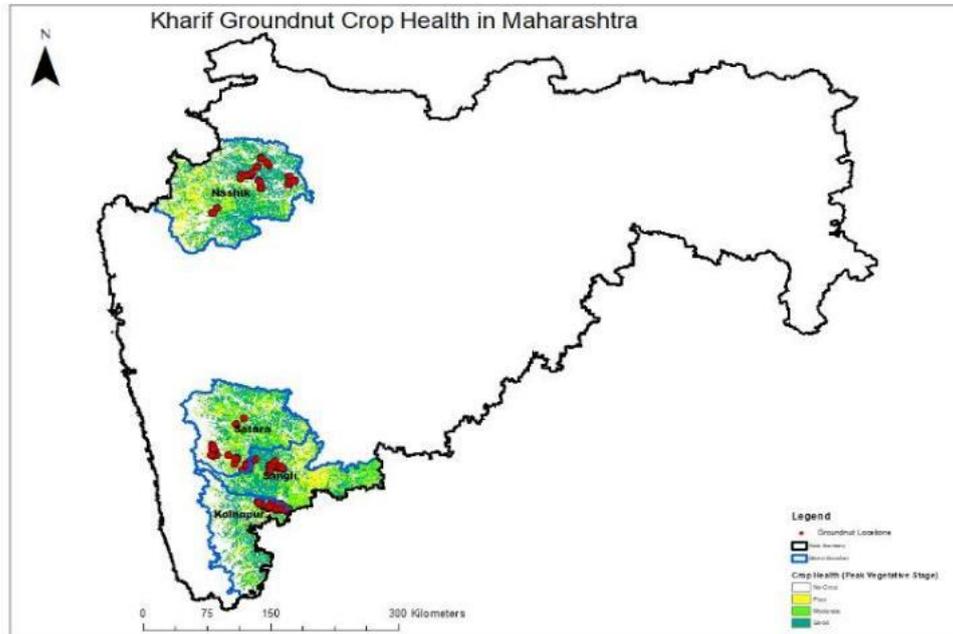
Figure 22 Remote Sensing Based Overall Crop Health Map of Maharashtra

Kharif Groundnut Crop Health was found to be good all the districts of Maharashtra except in Nasik and Satara where few patches were in poor health in the month of August.

4.4.6. Karnataka

Remote Sensing Based Crop Health is mapped in 5 districts of Karnataka as shown in Figure 23.
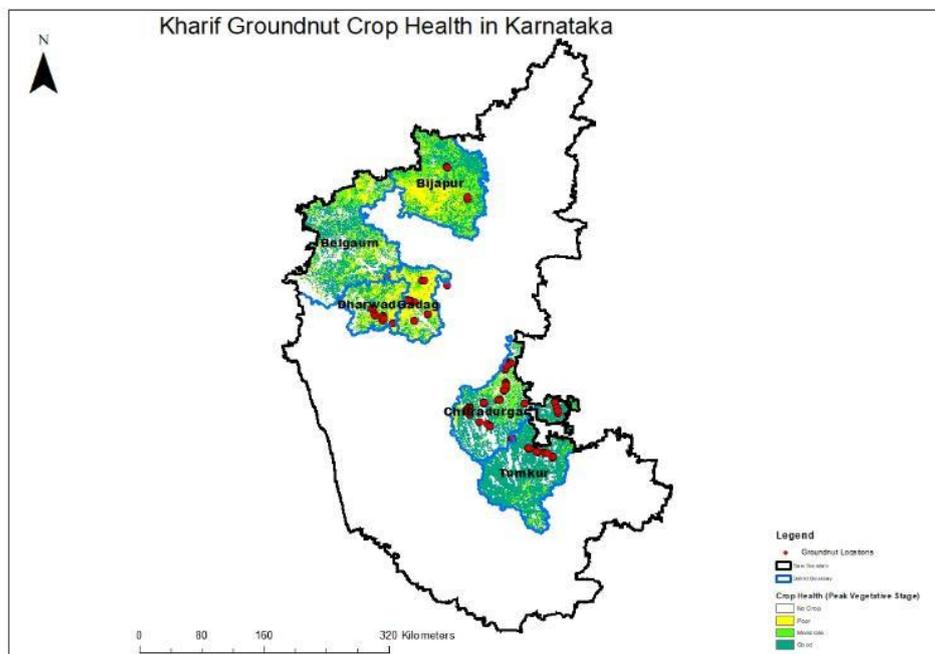
Figure 23 Remote Sensing Based Overall Crop Health Map of Karnataka

Kharif Groundnut Crop Health was found to be good to moderate in the groundnut growing districts of Belgavi, Chitradurga and Tumkur. However, in Vijayapura, Dharwad and Gadag the health of few cropland patches was found to be poor.

4.4.7. Uttar Pradesh

Remote Sensing Based Crop Health is mapped in 10 districts of Uttar Pradesh as shown in Figure 24
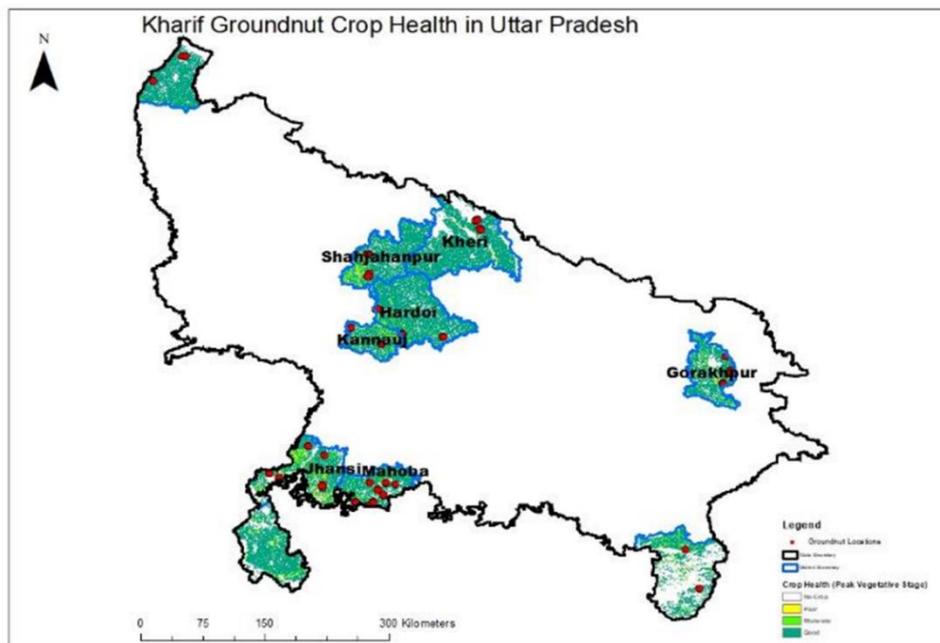
Figure 24 Remote Sensing Based Overall Crop Health Map of Uttar Pradesh

4.5 Estimated Production

The data generated on yield by the questionnaire survey and the data on acreage collected from the state/central government agencies were used for estimating production of groundnut in each of the districts surveyed and accordingly the production figures for each of the seven states were estimated. The shares of the estimated production of each district in the total estimated production of the respective state are indicated in Tables 5 to 11.

4.5.1 Gujarat

As shown in Table 5, in Gujarat eight districts were surveyed, the highest yield was estimated for Bhavnagar (2260 kg/ha) and the lowest for Jamnagar (925 kg/ha). The highest production was estimated for Rajkot. The total production for Gujarat was estimated as 28,14,474 MT with an average yield of 1,647 kg/ha. Due to heavy rainfall in the month of July which also coincides with the early vegetative season of the crop there was reduction in ground nut crop acreage by 11% as compared to 2021.

Table 5 Estimate of Production of Kharif Groundnut (In shell) in Gujarat

District	Acreage (ha)	Share (%)	Farmers	Yield (kg/ha)	Production (MT)	Share (%)
Rajkot	2,42,700	14%	184	2086	5,06,272	18%
Junagadh	2,11,800	12%	93	1028	2,17,730	8%
Devbhumi Dwarka	2,02,800	12%	203	1896	3,84,509	14%
Amreli	1,57,000	9%	195	1389	2,18,073	8%
Jamnagar	1,54,600	9%	10	925	1,43,005	5%
Banaskantha	1,25,900	7%	131	1750	2,20,325	8%
Bhavnagar	1,08,800	6%	119	2260	2,45,888	9%
Gir Somnath	85,800	5%	136	2188	1,87,730	7%
Sub Total	12,89,400	75%	1071	-	21,23,533	75%
Others	4,19,600	25%	-	-	6,90,941	25%
State Total	17,09,000	100%	1071	1647	28,14,474	100%

4.5.2 Rajasthan

As shown in Table 6 in Rajasthan three districts were surveyed, the highest yield was estimated for Bikaner (2612 kg/ha) and lowest for Chittorgarh (1187 kg/ha). The highest production was estimated for Bikaner. The total production for Rajasthan was estimated as 17,21,136 MT with an average yield of 2179 kg/ha.

Table 6 Estimate of Production of Kharif Groundnut (In shell) in Rajasthan

District	Acreage (ha)	Share (%)	Farmers	Yield (kg/ha)	Production (MT)	Share (%)
Bikaner	2,35,830	30%	73	2612	6,15,988	36%
Jodhpur	1,58,000	20%	150	1709	2,70,022	16%
Chittorgarh	28,000	4%	30	1187	33,236	2%
Sub Total	4,21,830	53%	253	-	9,19,246	53%
Others	3,68,030	47%	-	-	8,01,890	47%
State Total	7,89,860	100%	253	2179	17,21,136	100%

4.5.3 Andhra Pradesh

As shown in Table 7 in Andhra Pradesh two districts were surveyed, the highest yield was estimated for Chittoor(672 kg/ha).The total production for Andhra Pradesh was estimated as 2,17,449 MT with an average yield of 429 kg/ha. There was a decrease in acreage and yield in Andhra Pradesh due to heavy rainfall in the last week of August and 1st week of September.

Table 7 Estimate of Production of Kharif Groundnut (In shell) in Andhra Pradesh

District	Acreage (ha)	Share (%)	Farmers	Yield (kg/ha)	Production (MT)	Share (%)
Ananthapur+ Sri Satya Sai	3,71,176	73%	198	407	1,51,069	69%
Chittoor	34,057	7%	51	672	22,886	11%
Sub Total	4,05,233	80%	249	429	1,73,955	80%
Others	1,01,321	20%	-	-	43,494	20%
State Total	5,06,554	100%	249	429	2,17,449	100%

4.5.4 Karnataka

As shown in Table 8 in Karnataka five districts were surveyed, the highest yield was estimated for Chitradurga (1370 kg/ha) and lowest was estimated in Dharwad (1085 kg/ha).The total production of Karnataka was estimated as 4, 73,000 MT with an average yield of 1279 kg/ha.

Table 8 Estimate of Production of Kharif Groundnut (In Shell) in Karnataka

District	Acreage (ha)	Share (%)	Farmers	Yield (kg/ha)	Production (MT)	Share (%)
Chitradurga	1,19,574	32%	117	1370	1,63,816	35%
Tumakuru	67,115	18%	43	1248	83,760	18%
Gadag	32,651	9%	20	1150	37,549	8%
Dharwad	22,957	6%	17	1085	24,908	5%
Vijayapura	1,362	0%	8	1191	1,622	0%
Sub Total	2,43,659	66%	205	-	3,11,655	66%
Others	1,26,151	34%	-	-	1,61,345	34%
State Total	3,69,810	100%	205	1279	4,73,000	100%

4.5.5 Madhya Pradesh

As shown in Table 9 in Madhya Pradesh five districts were surveyed, the highest yield was estimated for Shivpuri(1784 kg/ha) and lowest for Chhatarpur(1245 kg/ha).The total production of Madhya Pradesh was estimated as 6,53,986 MT with an average yield of 1453 kg/ha.

Table 9 Estimate of Production of Kharif Groundnut (In Shell) in Madhya Pradesh

District	Acreage (ha)	Share (%)	Farmers	Yield (kg/ha)	Production (MT)	Share (%)
Shivpuri	1,42,300	32%	157	1784	2,53,863	39%
Chhatarpur	75,900	17%	105	1245	94,496	14%
Tikamgarh	59,200	13%	58	1343	79,506	12%
Niwadi	40,300	9%	39	1325	53,398	8%
Datia	33,800	8%	24	1482	50,092	8%
Sub Total	3,51,500	78%	383	-	5,31,353	81%
Others	98,500	22%		-	1,22,633	19%
State Total	4,50,000	100%	383	1453	6,53,986	100%

4.5.6 Maharashtra

As shown in Table 10 in Maharashtra four districts were surveyed, the highest yield was estimated for Kolhapur (1186kg/ha) and lowest in Nasik (1009kg/ha). The total production of Maharashtra was estimated as 1,76,678 MT with an average yield of 1097 kg/ha.

Table 10 Estimates of production of Kharif Groundnut (In Shell) in Maharashtra

District	Acreage (ha)	Share (%)	Farmers	Yield (kg/ha)	Production (MT)	Share (%)
Kolhapur	34,162	21%	62	1186	40,516	23%
Satara	31,738	20%	60	1141	36,213	20%
Sangli	28,863	18%	44	1012	29,209	17%
Nashik	22,107	14%	55	1009	22,306	13%
Sub Total	1,16,870	73%	221	-	1,28,245	73%
Others	44,130	27%	-	-	48,433	27%
State Total	1,61,000	100%	221	1097	1,76,678	100%

4.5.7 Uttar Pradesh

As shown in Table 11 in Uttar Pradesh ten districts were surveyed, the highest yield was estimated for Gorakhpur (969 kg/ha) and lowest in Mahoba (759kg/ha). The total production of Uttar Pradesh was estimated as 1,04,544 MT with an average yield of 830 kg/ha.

Table 11 Estimated of production of Kharif Groundnut (In Shell) in Uttar Pradesh

District	Acreage (ha)	Share (%)	Farmers	Yield (kg/ha)	Production (MT)	Share (%)
Jhansi	26,450	21%	15	778	20,578	20%
Lalitpur	12,453	10%	3	791	9,850	9%
Hardoi	11,024	9%	21	952	10,495	10%
Kheri	11,408	9%	20	778	8,875	8%
Mahoba	11,348	9%	20	759	8,613	8%
Shahjahanpur	6,024	5%	10	938	5,651	5%
Kannauj	4,615	4%	10	819	3,780	4%
Gorakhpur	4,320	3%	10	969	4,186	4%

District	Acreage (ha)	Share (%)	Farmers	Yield (kg/ha)	Production (MT)	Share (%)
Saharanpur	3,875	3%	9	903	3,499	3%
Sonbadra	3,770	3%	8	938	3,536	3%
Sub Total	95,287	76%	152	-	79,063	76%
Others	30,711	24%	-	-	25,481	24%
State Total	1,25,998	100%	126	830	1,04,544	100%

4.6 All India Production

The figures for estimated state wise production and estimated all India production is given in Table 12. With an estimated production of 68, 30,666 MT, Gujarat had a share of 41% in the national production and it was followed by Rajasthan (17, 21,136 MT) with a share of 25%. All the seven states contribute 90 % of the national production. Among the seven states the highest yield of 2179 kg/ha was estimated for Rajasthan and lowest was estimated for Andhra Pradesh. The national average was estimated as 1498 kg/ha

Table 12 All India Production of In shell Groundnut

State	Acreage (Ha)	Share (%)	Yield (kg/ha)	Production (MT)	Share (%)
Gujarat	17,09,000	37%	1647	28,14,474	41%
Rajasthan	7,89,860	17%	2179	17,21,136	25%
Andhra Pradesh	5,06,554	11%	429	2,17,449	3%
Karnataka	3,69,810	8%	1279	4,73,000	7%
Madhya Pradesh	4,50,000	10%	1453	6,53,986	10%
Maharashtra	1,61,000	4%	1097	1,76,678	3%
Uttar Pradesh	1,25,998	3%	830	1,04,544	2%
Subtotal	41,12,222	90%		61,61,267	90%
Others	4,46,778	10%		6,69,399	10%
Total	45,59,000	100%	1498	68,30,666	100%

4.7 Rainfall Scenario

As Kharif Groundnut is a rain fed crop, distribution and amount of rainfall plays a major role in the crop development at different growth stages

The graphical representation of rainfall pattern in major groundnut districts of 7 states is given below from Figure 25 to Figure 31.

District	Week End 8-6-2022	Week End 15-6-2022	Week End 22-6-2022	Week End 29-6-2022	Week End 6-7-2022	Week End 13-7-2022	Week End 20-7-2022	Week End 27-7-2022	Week End 3-8-2022	Week End 10-8-2022	Week End 17-8-2022	Week End 24-8-2022	Week End 31-8-2022	Week End 7-9-2022	Week End 14-9-2022	Week End 21-9-2022	Week End 5-10-2022	Week End 12-10-2022	Week End 19-10-2022
Anantapuram	-5	0	633	-88	97	-21	-73	-51	836	155	-97	-84	434	133	-33	-96	25	64	128
Chittoor	-23	43	370	-55	9	-40	-55	-8	107	50	-9	-68	303	38	-7	-76	-83	-3	9

Figure 25 Graphical representation or rainfall pattern in groundnut districts of Andhra Pradesh

No Data   No Rain [-100%]   Large Deficient [-99% to -60%]
Deficient [-59% to -20%]   Normal [-19% to 19%]   Excess [20% to 59%]
Large Excess [60% or more]
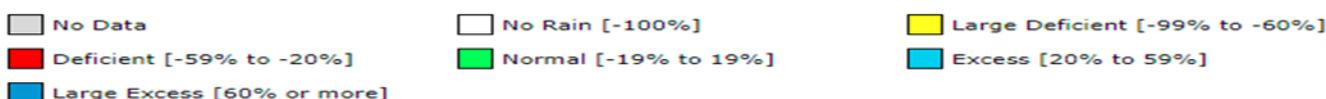
With respect to long time average, the descriptors used by the IMD to categorizes the extent of rainfall in the groundnut growing district are: Normal- minus 19 per cent to plus 19 per cent; Deficient- minus 20 per cent to minus 59 per cent; Large deficient minus 60 per cent or more; Excess- plus 20 per cent to plus 59 percent; Large excess- plus 60% or more; and No rains- 0 per cent.

District	Week End 8-6-2022	Week End 15-6-2022	Week End 22-6-2022	Week End 29-6-2022	Week End 6-7-2022	Week End 13-7-2022	Week End 20-7-2022	Week End 27-7-2022	Week End 3-8-2022	Week End 10-8-2022	Week End 17-8-2022	Week End 24-8-2022	Week End 31-8-2022	Week End 7-9-2022	Week End 14-9-2022	Week End 21-9-2022	Week End 5-10-2022	Week End 12-10-2022	Week End 19-10-2022
Amreli	-60	-8	-29	-40	38	225	35	-52	-86	173	22	26	-91	-66	265	35	-97	21	0
Banaskantha	-100	29	-90	-83	190	24	-3	148	-71	33	270	291	-39	-93	68	50	-100	-95	-97
Bhavanagar	-93	-90	-18	-66	34	158	-25	-34	-67	122	37	-41	-99	-87	199	61	-91	81	49
Devbhumi Dwarka	-100	-11	-97	-61	297	576	-8	-60	-96	66	84	42	-94	-50	312	202	-100	-45	-68
Gir Somnath	-100	-35	-47	-57	107	336	142	-50	-97	91	310	11	-99	-77	255	128	-100	96	63
Jamnagar	-100	9	-85	-49	91	416	-60	-76	-96	-10	83	68	-92	-100	194	75	-55	-60	-74
Junagadh	-100	-61	-32	-26	126	326	52	-71	-98	72	222	167	-95	-97	197	-37	-95	-46	-61
Rajkot	-100	-23	-66	-42	65	404	-27	-41	-92	39	39	69	-90	-76	265	-38	-100	-57	-64

Figure 26 Graphical representation or rainfall pattern in groundnut districts of Gujarat

In the year 2021, monsoon was excess in Rayalseema (AP) region in the month of June which led to

Gujarat distribution of rainfall was more or less optimal. High rainfall was being observed in the month of Andhra Pradesh erratic rainfall was being observed from August to October the situation being worse in Ananthapuram in July and in the month of September

District	Week End 8-6-2022	Week End 15-6-2022	Week End 22-6-2022	Week End 29-6-2022	Week End 6-7-2022	Week End 13-7-2022	Week End 20-7-2022	Week End 27-7-2022	Week End 3-8-2022	Week End 10-8-2022	Week End 17-8-2022	Week End 24-8-2022	Week End 31-8-2022	Week End 7-9-2022	Week End 14-9-2022	Week End 21-9-2022	Week End 5-10-2022	Week End 12-10-2022	Week End 19-10-2022
Bikaner	-97	-65	662	-100	247	435	60	34	28	182	50	44	-97	-99	-33	-100	-100	-100	-100
Chittorgarh	-100	-82	10	-83	82	-25	167	38	-78	-26	96	65	-91	-50	-73	30	-41	541	426
Churu	-100	-100	413	-92	226	54	144	63	147	-14	11	-79	-94	-96	-68	-96	-100	19	-11
Jaipur	-100	-93	317	-100	240	3	-49	123	20	-5	98	-19	-87	-67	-90	0	-100	695	547
Jaisalmer	-100	37	-57	259	129	219	240	196	-83	204	-56	727	-3	-100	-42	-95	-100	-100	-100
Jodhpur	-100	-9	46	-98	61	76	64	268	68	106	96	100	-41	-100	-39	-87	-100	-34	-62
Jalore	-100	-67	-26	-100	34	84	28	170	-54	-3	252	307	13	-92	1	19	-100	-94	-96

Figure 27 Graphical representation or rainfall pattern in groundnut districts of Rajasthan
In Rajasthan distribution of rainfall was optimal.

District	Week End 8-6-2022	Week End 15-6-2022	Week End 22-6-2022	Week End 29-6-2022	Week End 6-7-2022	Week End 13-7-2022	Week End 20-7-2022	Week End 27-7-2022	Week End 3-8-2022	Week End 10-8-2022	Week End 17-8-2022	Week End 24-8-2022	Week End 31-8-2022	Week End 7-9-2022	Week End 14-9-2022	Week End 21-9-2022	Week End 5-10-2022	Week End 12-10-2022	Week End 19-10-2022
Chattarpur	-100	-87	67	-78	-19	-48	-72	110	-59	-39	45	80	6	-61	-42	77	196	443	365
Datia	-100	-100	44	-100	-19	-17	-80	60	-57	-58	-53	10	-45	-13	-19	270	-100	268	220
Niwadi	-100	-100	29	-100	-78	93	-87	54	-18	2	-22	120	-67	-7	-8	1171	-64	60	58
Shivpuri	-100	-87	163	-93	2	10	-52	86	-66	-51	174	85	-80	-20	-6	378	-100	521	422
Tikamgarh	-100	-100	27	-92	-41	-28	-85	92	-48	-56	1	94	-27	-43	-37	373	36	202	116

Figure 28 Graphical representation or rainfall pattern in groundnut districts of Madhya Pradesh
In Madhya Pradesh excess rainfall was observed in the months of September and October

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District	Week End 8-6-2022	Week End 15-6-2022	Week End 22-6-2022	Week End 29-6-2022	Week End 6-7-2022	Week End 13-7-2022	Week End 20-7-2022	Week End 27-7-2022	Week End 3-8-2022	Week End 10-8-2022	Week End 17-8-2022	Week End 24-8-2022	Week End 31-8-2022	Week End 7-9-2022	Week End 14-9-2022	Week End 21-9-2022	Week End 5-10-2022	Week End 12-10-2022	Week End 19-10-2022
Kolhapur	-62	-71	-87	-31	60	113	56	-74	-83	126	88	22	-80	7	353	19	-3	76	152
Nashik	-93	-9	-71	63	20	437	203	9	-75	37	113	-1	-82	78	117	263	-51	26	73
Sangli	-59	-71	-92	-71	2	49	2	-75	45	147	-40	-74	-70	153	41	-85	-35	48	68
Satara	-96	-49	-88	-44	46	232	104	-63	-59	131	118	41	-34	91	212	-3	-47	50	165

Figure 29 Graphical representation or rainfall pattern in groundnut districts of Maharashtra

In Maharashtra excess rainfall was observed in the months of September and October

District	Week End 8-6-2022	Week End 15-6-2022	Week End 22-6-2022	Week End 29-6-2022	Week End 6-7-2022	Week End 13-7-2022	Week End 20-7-2022	Week End 27-7-2022	Week End 3-8-2022	Week End 10-8-2022	Week End 17-8-2022	Week End 24-8-2022	Week End 31-8-2022	Week End 7-9-2022	Week End 14-9-2022	Week End 21-9-2022	Week End 5-10-2022	Week End 12-10-2022	Week End 19-10-2022
Belagaum	-17	-70	-12	9	100	140	94	-73	-4	138	-20	-46	-20	313	270	-73	-9	69	99
Chitradurga	117	-36	231	-94	280	175	80	-4	630	198	-69	-59	474	519	-62	-82	97	91	137
Dharwad	41	-68	-64	-31	118	98	33	-89	-6	38	-46	-71	185	618	111	-86	76	125	103
Gadag	-11	-81	87	-63	57	114	-13	-61	557	40	-66	-73	361	930	17	-94	91	112	100
Tumakuru	154	47	470	-78	25	59	14	-66	1046	194	-98	-62	499	292	-74	-75	22	42	140
Bijapur	29	-17	-20	-54	135	61	20	-28	525	306	-74	-89	131	217	32	-82	-35	14	50

Figure 30 Graphical representation or rainfall pattern in groundnut districts of Karnataka

In Karnataka excess rainfall is being observed in the month of July when the crop is at its early vegetative stage as well as in the month of October when the crop is in the maturity stage

District	Week End 8-6-2022	Week End 15-6-2022	Week End 22-6-2022	Week End 29-6-2022	Week End 6-7-2022	Week End 13-7-2022	Week End 20-7-2022	Week End 27-7-2022	Week End 3-8-2022	Week End 10-8-2022	Week End 17-8-2022	Week End 24-8-2022	Week End 31-8-2022	Week End 7-9-2022	Week End 14-9-2022	Week End 21-9-2022	Week End 5-10-2022	Week End 12-10-2022	Week End 19-10-2022
Gorakhpur	-100	-100	-94	-19	-36	-98	-97	62	58	-44	-89	-48	-34	-27	-30	267	-83	483	293
Hardoi	-100	-100	-81	-100	129	-100	-92	-39	-44	26	-95	-64	-58	-88	-97	73	-100	589	349
Jhansi	-100	-100	11	-100	-58	-41	-95	-4	-40	-21	-46	92	-48	-56	-7	527	-66	245	192
Kheri	-100	-100	-85	-79	62	-22	-92	148	79	127	-99	-42	-14	-77	-86	330	-100	1072	848
Lalitpur	-100	-100	111	-79	-51	8	-79	2	-47	-60	122	124	-76	-42	-48	162	-100	289	164
Mahoba	-100	-100	-41	-100	-7	-99	-85	54	-69	-71	-13	39	22	-27	-26	185	221	665	535
Shajanpur	-100	-100	-73	-99	71	-92	-82	-90	-55	10	-92	-81	-85	-85	-96	-65	-100	601	425
Sonbadra	-100	-95	15	-52	4	-99	-99	61	-32	-70	38	-6	196	-16	-40	13	167	105	68
Kannauj	-100	-100	-98	-99	-5	-100	-95	35	78	83	-61	-67	-38	-89	-72	92	-100	444	294
Saharanpur	-100	-100	-7	-100	-11	-52	-66	-27	6	-6	-99	-100	-100	-100	-79	78	-100	69	11

Figure 31 Graphical representation or rainfall pattern in groundnut districts of Uttar Pradesh

In Uttar Pradesh excess rainfall was observed in the month of October when groundnut is at its maturity stage

These factors can therefore be attributed to decrease in the acreage by 7% and production by 17% as compared to last year 2021.

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