

Wheat Scenario – A Snippet

e-newsletter from the
Directorate of Wheat Research
Karnal, Haryana (India)

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About the Directorate...

This organisation works under the aegis of Indian Council of Agricultural Research, New Delhi. About 50 scientists working for the Directorate strive to increase the productivity of wheat and ensure India's food and nutritional security. The Directorate believes much in multi-disciplinary and co-ordinated research for the varietal development and its successful adoption across the wheat growing zones in the country.

Highlights...

AREA	Wheat acreage marginally down by 0.22 mha in spite of increase in the support price
PRODUCTION	National production stood at 92.46 mt as per the 4 th Advance Estimate of Government of India
PRODUCTIVITY	National average yield (3119 kg/ha) marginally lower than last year's record
PROCUREMENT	49 per cent drop in procurement
TRADE	India exported 6.5 mt of wheat
PROFIT	Returns per rupee of investment were highest in Rajasthan followed by Gujarat and Madhya Pradesh

From the Project Director's Desk...

India again holds its stand in wheat production, globally. However, the production was lower by 2.42 mt (2.55 %) in comparison to previous year's historic production of 94.88 mt as per the estimate of the Directorate of Economics and Statistics, Government of India. Productivity still remains at its peak. Though India is a surplus producer, still exports on sustainable basis remains an uphill task owing to the trade policies.

With the favourable production conditions, the country is expected to achieve more in the coming season provided weather factors does not hinder. This e-newsletter from the Directorate is aimed to present the current scenario in wheat production and explore the plausible reasons behind the crop status.



(Indu Sharma)

Quantum change in area, production and productivity

State/Country	2011-12			2012-13*			Quantum Change in		
	Area (000'ha)	Production (000't)	Yield (kg/ha)	Area (000'ha)	Production (000't)	Yield (kg/ha)	Area (000'ha)	Production (000't)	Yield (kg/ha)
Andhra Pradesh	8	11	1375	8	7	875	0	-4	-500
Assam	53	60	1147	48	57	1188	-5	-3	40
Bihar	2142	4725	2206	2215	5375	2427	73	650	221
Chhattisgarh	109	133	1227	101	141	1396	-7	8	170
Gujarat	1351	4072	3014	1050	3135	2986	-301	-937	-28
Haryana	2522	12686	5030	2497	11117	4452	-25	-1569	-578
Himachal Pradesh	357	596	1671	359	543	1514	2	-52	-156
Jammu & Kashmir	296	500	1689	296	416	1404	0	-84	-285
Jharkhand	159	303	1908	156	267	1716	-3	-35	-192
Karnataka	225	193	858	234	172	735	9	-21	-123
Madhya Pradesh	4889	11539	2360	5300	13133	2478	411	1595	118
Maharashtra	843	1313	1558	594	875	1473	-249	-438	-84
Odisha	1.46	2.40	1644	1.28	2.14	1672	-0.18	-0.26	28
Punjab	3528	17280	4898	3522	16106	4573	-6	-1174	-325
Rajasthan	2935	9320	3175	2820	8954	3175	-115	-366	0
Uttar Pradesh	9731	30293	3113	9734	30302	3113	3	9	0
Uttarakhand	369	878	2379	358	838	2341	-11	-40	-39
West Bengal	316	873	2765	322	907	2817	6	34	51
Others	92	177	1920	31	110	3514	-61	-67	1594
INDIA	29865	94882	3177	29647	92458	3119	-218	-2424	-58

Note: * indicates the 4th advance estimates from the Directorate of Economics and Statistics (DES), New Delhi.

Production in 2012-13 fall by 2.42 mt in comparison to 2011-12 owing to the productivity decline by 58 kg/ha (1.84 %) followed by marginal reduction in area by 0.22 mha (0.73 %). Weather parameters that favored last crop season didn't go well with this season bringing down the country's production at 92.46 mt. State wise analysis indicates that Uttar Pradesh grows more wheat (9.73 mha), followed by Madhya Pradesh (5.30 mha) and Punjab (3.52 mha). Uttar Pradesh again holds the prime position in wheat production (32.77 % of India's production). The state has produced 30.30mt, followed by Punjab (16.11 mt) and Madhya Pradesh (13.13 mt). In comparison to 2011-12, current year productivity declined due to significant reduction in yield of major wheat growing states. Haryana and Punjab which registered record yield in 2011-12, failed to continue the spurt momentum. Productivity declined by 578 kg/ha in Haryana and 325 kg/ha in Punjab. Consequent to this, Punjab replaces Haryana in highest productivity. However, Uttar Pradesh and Rajasthan maintain their productivity level. Despite a fall in yield, states located in north eastern plains zone like Assam, Bihar, Odisha and West Bengal shows a significant increase in the crop yield ranging from 221 kg/ha (Bihar) to 28 kg/ha (Odisha). Productivity decline was highest in Haryana, followed by Andhra Pradesh and Punjab. Interestingly, states that are grouped under 'others' category indicate a productivity increase of 1594 kg/ha which is a huge figure by any yardstick. The reason was the placement of many of the north eastern states like Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Sikkim and Tripura that yielded more wheat in the current crop season owing to several developmental and extension programmes targeted for that region.

Contribution of yield and area to wheat production (2012-13)

State/Country	Change in production in 2012-13* over 2011-12		% contribution by	
	Quantity (in '000 tonnes)	Deviation (in %)	Area	Yield
Andhra Pradesh	-4	-36.36	0	-36.36
Assam	-3	-5.47	-8.69	3.53
Bihar	650	13.76	3.42	10.00
Chhattisgarh	8	6.16	-6.73	13.82
Gujarat	-937	-23.01	-22.28	-0.94
Haryana	-1569	-12.37	-0.99	-11.49
Himachal Pradesh	-52	-8.78	0.64	-9.36
Jammu & Kashmir	-84	-16.89	0	-16.89
Jharkhand	-35	-11.63	-1.73	-10.08
Karnataka	-21	-10.88	4.00	-14.31
Madhya Pradesh	1595	13.82	8.40	5.00
Maharashtra	-438	-33.36	-29.54	-5.42
Odisha	-0.26	-10.83	-12.33	1.71
Punjab	-1174	-6.79	-0.17	-6.64
Rajasthan	-366	-3.93	-3.93	0
Uttar Pradesh	9	0.03	0.03	0
Uttarakhand	-40	-4.56	-2.98	-1.62
West Bengal	34	3.91	2.01	1.86
Others	-67	-38.00	-66.13	83.02
INDIA	-2424	-2.55	-0.73	-1.84

Note: * indicates the 4th advance estimates from the DES, New Delhi.

Fall in production quantity was more evident in Haryana, followed by Punjab and Gujarat. In percentage terms, it was highest in Maharashtra, followed by Andhra Pradesh and Gujarat. Increased production was noticed in Madhya Pradesh, Bihar, West Bengal, Uttar Pradesh and Chhattisgarh. Barring Chhattisgarh, both area and yield contributed positively to the respective state production but in different magnitude. For instance, in Madhya Pradesh, contribution by area (8.40 %) was more in comparison to yield (5 %). In the case of Bihar, it is a reverse. Overall, decline in productivity (1.84 %) and area (0.73 %) pull down India's production.

Selected state wise procurement of wheat (in lakh tonnes) in India

States/UTs	2012-13	2013-14*
Bihar	7.72	-
Chandigarh	0.17	0.07
Delhi	0.31	-
Gujarat	1.56	0.75
Haryana	86.65	51.3
Himachal Pradesh	0.01	-
Jammu and Kashmir	0.09	-
Madhya Pradesh	84.93	46.5
Maharashtra	0.02	-
Punjab	128.34	88.92
Rajasthan	19.64	5.17
Uttar Pradesh	50.63	2.1
Uttarakhand	1.39	0.02
West Bengal	0.02	-
India	381.48	194.11

Note : * indicates the procurement estimates in 2013-14 marketing season.

Source: Ministry of Consumer Affairs, Food and Public Distribution (Government of India).

FCI, the nodal central agency, along with other State agencies procured wheat at the Minimum Support Price (MSP) of ₹13500/tonne in 2012-13. As usual, Punjab, Haryana and Madhya Pradesh contributed more to the central grain pool. In 2012-13 marketing season, wheat procurement stood at 38.15 mt. But in the current season, wheat procurement dropped by 49 % and it is estimated at 19.41 mt. The plausible reasons were strong buying by private traders, stockholding by farmers and production drop in major wheat growing states.

Buffer Stock Position

Buffer stocks are required to (i) feed the population under Targeted Public Distribution System (TPDS) and other welfare schemes, (ii) ensure food security during the periods when production is short of normal demand during bad agricultural years and (iii) stabilize prices during period of production shortfall through open market sales. The buffer norm for wheat w.e.f 20.04.2005 is 8.2 mt (Jan), 4 mt (Apr), 17.1 mt (July) and 11 mt (Oct). In addition to buffer norms, Government has prescribed a Strategic Reserve of 30 lakh tonnes of Wheat w.e.f. 01.07.2008. Stock of wheat in central pool is 42.40 mt as on 01.07.2013 (Storage: 42.14 mt and Transit: 0.26 mt). Stock of wheat in FCI is 13.76 mt as on 01.07.2013 (Storage: 13.50 mt and Transit: 0.26 mt).

Source: Ministry of Consumer Affairs, Food and Public Distribution (Government of India).

Trade Scenario

S.No.	Export quantity (item wise) in tonnes	2011-12	2012-13
1.	Durum wheat	314435.06	2326985.40
	A. Durum wheat of seed quality	147.00	173.90
	B. Other durum wheat	314288.06	2326811.50
2.	Other wheat and meslin	426311.68	4169217.62
	A. Wheat seed	25840.40	346778.28
	B. Wheat (not seed) for human consumption	395768.34	3817683.25
	C. Other meslin	4702.94	4756.09
	Total wheat exports	740746.74	6496203.02
S.No.	Import quantity (item wise) in tonnes	2011-12	2012-13
1.	Durum wheat	21.50	--
	A. Durum wheat of seed quality	--	--
	B. Other durum wheat	21.50	--
2.	Other wheat and meslin	--	2943.85
	A. Wheat seed	--	821.18
	B. Wheat (not seed) for human consumption	--	2122.67
	C. Other meslin	--	--
	Total wheat imports	21.50	2943.85

Note : Meslin is a mixture of wheat and rye flour.

Source: Ministry of Commerce, Government of India.

Total wheat export in 2011-12 was 0.74 mt and in 2012-13 it was 6.50 mt. Increase in export was due to surplus production in 2011-12 and lack of storage to stock the surplus wheat. In April 2013, India exported 6.73 lakh tonnes of wheat worth of ₹11806.61 million. Estimate from the United States Department of Agriculture (USDA) reports that about 7 mt has been exported by July, 2013. India has imported 22 tonnes of wheat in 2011-12 and 2944 tonnes in 2012-13 respectively at the cost of ₹0.81 million and ₹60.31 million.

Costs and Returns from Wheat (2010-11)

Items	Bihar	Gujarat	Haryana	HP	MP	Maharashtra	Punjab	Rajasthan	UP
Cost of Cultivation (₹/ha)	24348	27297	42323	17862	27532	36488	42984	31631	35984
Cost of Production (₹/Qtl)	764	709	773	1056	834	1257	872	667	804
Gross Returns (₹/ha)	32458	45901	63914	18648	41728	41474	58133	53551	48104
Value of Main Product (₹/ha)	27003	42945	52959	13169	35638	40539	50621	44536	39529
Value of By-Product (₹/ha)	5455	2955	10955	5479	6090	935	7511	9015	8575
Material and Labour Input per Hectare									
Seed (Kg.)	113	157	117	113	116	116	107	151	144
Fertilizer (Kg. Nutrients)	126	179	203	58	105	192	245	133	182
Manure (Qtl.)	0	1	0	25	0	0	1	3	1
Human Labour* (Man Hrs.)	479	361	284	225	288	520	161	464	440
Animal Labour (Pair Hrs.)	32	9	2	34	14	44	1	6	6
Rate per Unit (₹)									
Seed (Kg.)	18	20	16	12	17	26	15	16	15
Fertilizer (Kg. Nutrients)	16	14	13	12	14	15	13	15	15
Manure (Qtl.)	25	48	8	43	29	184	10	42	35
Human Labour (Man Hrs.)	13	12	29	18	16	16	28	18	15
Animal Labour (Pair Hrs.)	26	55	91	9	39	55	79	20	110
Derived Yield (Qtl./ha)	26	36	45	12	28	28	43	40	37
*Break-Up Human Labour Hours	479	361	284	225	288	520	161	464	440
Family	266	201	180	211	183	288	66	377	289
Attached	1	6	12	0	8	44	18	12	4
Casual	212	155	92	14	97	188	77	75	147
Item wise Breakup of Cost of Cultivation (₹/ha)									
A. Operational Cost	17544	18402	22564	10780	15097	25748	18120	18855	21288
Human Labour	6273	4468	8188	4008	4579	8377	4516	8437	6563
Family	3475	2518	4873	3697	2915	4766	1694	6689	4092
Attached	9	80	326	2	149	685	456	212	52
Casual	2789	1870	2989	309	1514	2926	2366	1535	2419
Animal Labour	837	503	212	296	548	2414	60	132	616
Hired	274	113	1	95	72	587	2	39	10
Owned	563	390	211	202	476	1827	59	93	607
Machine Labour	3397	3690	5714	2847	3913	4895	6420	3400	5028
Hired	3355	3556	4875	2817	3720	4785	4898	3336	4675
Owned	42	134	839	30	193	110	1523	65	352
Seed	2005	3085	1825	1351	1938	2966	1575	2352	2218
Fertilizer & Manure	2057	2610	2732	1755	1511	2945	3268	2096	2731
Fertilizer	2051	2557	2730	687	1510	2885	3260	1951	2691
Manure	6	54	2	1068	1	60	8	145	40
Insecticides	0	318	674	32	14	106	1338	17	40
Irrigation Charges	2549	3246	2636	275	2226	3408	340	2053	3570
Miscellaneous	0	0	46	0	0	0	105	0	0
Interest on Working Capital	426	481	536	215	369	636	498	369	521
B. Fixed Costs	6804	8895	19759	7083	12435	10740	24864	12776	14697
Rental Value of Owned Land	5609	7401	16206	4340	10432	6914	16287	8758	10861
Rent Paid For Leased-in-Land	0	171	47	6	0	0	4561	324	408
Land Revenue, Taxes and Cess	31	9	0	18	4	21	0	10	6
Depreciation	222	144	333	486	403	410	383	406	604
Interest on Fixed Capital	941	1170	3173	2233	1596	3395	3634	3277	2816
Total Cost [Operational Cost + Fixed Cost]	24348	27297	42323	17862	27532	36488	42984	31631	35984
Benefit - Cost Ratio	1.33	1.68	1.51	1.04	1.52	1.14	1.35	1.69	1.34

Source: DES (Government of India).

Country wise Area, Production and Productivity

Country/Region	Area (mha)		Production (mt)		Productivity (t/ha)	
	2011-12	2012-13*	2011-12	2012-13*	2011-12	2012-13*
World	215.82	221.12	655.25	697.8	3.04	3.16
United States	19.83	18.51	61.76	57.52	3.11	3.11
China	24.2	24.25	121	121	5.00	4.99
India	29.86	29.64	94.88	92.46	3.18	3.12
Pakistan	8.66	8.67	23.3	24	2.69	2.77
Afghanistan	2.51	2.5	4.15	4.05	1.65	1.62
Russia	21.3	24	37.72	54	1.77	2.25
Ukraine	5.63	6.5	15.76	19.5	2.80	3.00
Kazakhstan	12.4	12.5	9.84	14.5	0.79	1.16
Uzbekistan	1.4	1.4	6.7	6.7	4.79	4.79
France	5.31	5.4	37.92	37.9	7.14	7.02
Germany	3.06	3.15	22.41	23.7	7.33	7.52
United Kingdom	1.99	1.6	13.26	11.75	6.66	7.34
Poland	2.08	2.23	8.61	9.2	4.14	4.13
Spain	2.16	2.21	5.09	6.9	2.36	3.12
Italy	1.85	1.82	7.45	7.13	4.03	3.92
Denmark	0.61	0.7	4.23	5.1	6.92	7.29
Hungary	1.06	1.1	3.97	4.63	3.74	4.21
Romania	1.99	2.05	5.3	6.8	2.66	3.32
Bulgaria	1.09	1.15	4.33	4.3	3.98	3.74
Canada	9.5	10.3	27.2	29	2.86	2.82
Australia	13.24	13.7	22.08	25.5	1.67	1.86
Turkey	7.8	7.7	15.5	17.6	1.99	2.29
Iran	7	7	14	15.5	2.00	2.21
Syria	1.6	1.55	3.7	4.2	2.31	2.71
Egypt	1.35	1.4	8.5	8.8	6.30	6.29
Morocco	3.14	3.28	3.87	6.8	1.23	2.07
Argentina	3.5	4.2	10	13	2.86	3.10

Source: United States Department of Agriculture (USDA) and * indicates the estimated figure by USDA.

Globally, India is the second largest producer next to China with maximum area under wheat. However, in terms of productivity, it is ranked thirteenth and marginally less relative to world average.

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