16.1: Estimated Number of Rural Households, Farmer Households and Indebted Farmer Households

State	Estimated Number of Rural Households ('00)	Estimated Number of Farmer Households('00)	Estimated Number of Indebted Farmer Households ('00)	% of Farmer Households Indebted
(1)	(2)	(3)	(4)	(5)
Andhra Pradesh	142512	60339	49493	82.0
Arunachal Pradesh	15412	1227	72	5.9
Assam	41525	25040	4536	18.1
Bihar	116853	70804	23383	33
Chhattisgarh	36316	27598	11092	40.2
Gujarat	63015	37845	19644	51.9
Haryana	31474	19445	10330	53.1
Himachal Pradesh	11928	9061	3030	33.4
Jammu & Kashmir	10418	9432	3003	31.8
Jharkhand	36930	28238	5893	20.9
Karnataka	69906	40413	24897	61.6
Kerala	49942	21946	14126	64.4
Madhya Pradesh	93898	63206	32110	50.8
Maharashtra	118177	65817	36098	54.8
Manipur	2685	2146	533	24.8
Meghalaya	3401	2543	103	4.1
Mizoram	942	780	184	23.6
Nagaland	973	805	294	36.5
Odisha	66199	42341	20250	47.8
Punjab	29847	18442	12069	65.4
Rajasthan	70172	53080	27828	52.4
Sikkim	812	531	174	38.8
Tamil Nadu	110182	38880	28954	74.5
Tripura	5977	2333	1148	49.2
Uttar Pradesh	221499	171575	69199	40.3
Uttrakhand	11959	8962	644	7.2
West Bengal	121667	69226	34696	50.1
UTs	2325	732	372	50.8
All India	**1478988**	**893504**	**434242**	**48.6**

Source : Report No. 498(59/33/1), Situation Assessment Survey of Farmers: Indebtedness of Farmer Households, National Sample Survey 59th Round (January-December 2003)

16.2: Indebtedness of Farmer Households(all-India) in Different Size Classes of Land Possessed

Land Possessed (hectare)	Estimated Number of Farmer Households (lakh)	% to Total in each Class	Estimated No. of Indebted Farmer Households (lakh)	% to Total in each Class	% of Indebted Farmer Households to Total	Average Outstanding Loan Amount (₹)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Upto-0.01	12.59	1.40	5.71	1.3	45.3	6121
0.01-0.40	292.87	32.80	130.11	30.0	44.4	6545
0.41-1.00	283.61	31.70	129.21	29.8	45.6	8623
1.01-2.00	160.60	18.00	81.92	18.8	51.0	13762
2.01-4.00	93.50	10.50	54.41	12.5	58.2	23456
4.01-10.00	42.58	4.80	27.73	6.4	65.1	42532
10 & above	7.75	0.80	5.15	1.2	66.4	76232
All India	**893.50**	**100.00**	**434.24**	**100.0**	**48.6**	**12585**

Source : Report No. 498(59/33/1), Situation Assessment Survey of Farmers: Indebtedness of Farmer Households, National Sample Survey 59th Round (January-December 2003)

16.3: Incidence of Indebtedness in Major States

State	Estimated Number of Indebted Farmer Households	% Share in Estimated Farmer Households	% Share in Total Foodgrains	
			Area	Production
(1)	(2)	(3)	(4)	(5)
1. Uttar Pradesh	69199	15.9	16.3	20.7
2. Maharashtra	36098	8.3	10.9	5.8
3. Madhya Pradesh	32110	7.4	9.6	6.7
4. Rajasthan	27828	6.4	9.5	5.5
5. Karnataka	24897	5.7	6.1	4.6
6. Andhra Pradesh	49493	11.4	5.9	7.0
7. Bihar	23383	5.4	5.8	5.9
8. West Bengal	34696	8.0	5.5	7.5
9. Punjab	12069	2.8	5.1	12.2
10. Odisha	20250	4.7	4.4	2.8
Sub-total	330023	76.0	79.1	78.7
All India	**434242**	**100.0**	**100.0**	**100.0**

Source : Report No. 498(59/33/1), Situation Assessment Survey of Farmers: Indebtedness of Farmer Households, National Sample Survey 59th Round (January-December 2003)

16.4: Incidence of Indebtedness based on size of land possessed

State	% of Marginal Indebted Farmer Households (upto 1.0 ha of land)	% of Small Indebted Farmer Households (1.01 to 2.00 ha)	% of Semi-Medium Indebted Farmer Households (2.01 to 4.00 ha)	% of Medium Indebted Farmer Households (4.01 to 10.00 ha)	% of Large Indebted Farmer Households (>10.00 ha)
(1)	(2)	(3)	(4)	(5)	(6)
1. Uttar Pradesh	71.3	17.4	7.8	3.4	0.3
2. Maharashtra	36.0	26.2	23.3	12.2	2.4
3. Madhya Pradesh	33.0	27.1	23.1	13.0	3.9
4. Rajasthan	43.9	19.8	17.8	14.1	4.5
5. Karnataka	50.7	22.8	15.9	9.3	1.2
6. Andhra Pradesh	55.7	21.8	15.1	6.6	0.7
7. Bihar	86.9	9.2	2.8	0.7	0.6
8. West Bengal	88.7	8.5	2.4	0.4	0.0
9. Punjab	53.3	15.8	17.0	11.8	2.2
10. Odisha	70.3	20.6	7.3	1.7	0.0
All India	**61.0**	**18.9**	**12.5**	**6.4**	**1.2**

Source : Report No. 498(59/33/1), Situation Assessment Survey of Farmers: Indebtedness of Farmer Households, National Sample Survey 59th Round (January-December 2003)

17.1: Ceilings on Land Holdings

(In Acres)

State	Irrigated Land with two Crops	Irrigated Land with one Crops	Dry land
(1)	'(2)	'(3)	(4)
As recommended in 1972 National Guidelines	10-18	27	54
Proposed in Agenda Notes 1985 of Regional Minister's Conference	12	18	30
Andhra Pradesh	10 to 18	15 to 27	35 to 54
Assam	17	17	17
Bihar	15 to 18	25	30 to 45
Gujarat	10 to 18	15 to 27	20 to 54
Haryana	18	27	54
Himachal Pradesh	10	15	30 to 70
Jammu & Kashmir	9 to 12.5	9 to 12.5	15 to 23 (in Ladakh 19)
Karnataka	10 to 20	25 to 30	54
Kerala*	12 to 15	12 to 15	12 to 15
Madhya Pradesh	18	27	54
Maharashtra	18	27	54
Manipur	12	12	15
Mizoram	nil	nil	nil
Odisha	10	15	30 to 45
Punjab	17	27	51
Rajasthan	18	27	54 to 175
Tamil Nadu	12	30	60
Sikkim	12.5	12.5	50
Tripura	10	10	30
Uttarakhand	18	27	45
Uttar Pradesh	18	27	45
West Bengal	12	12	17
Andaman & Nicobar Islands	nil	nil	nil

Note : 1. The actual limits for lands in Karnataka and Uttar Pradesh are higher due to classification of land.

2. The actual ceiling limits in Himachal Pradesh and Rajasthan are higher due to hilly terrain and desert lands.

3. 1 Acre = 0.404686 Hectare.

Source :Department of Land Resources, New Delhi.

17.2: Minimum Rates of Wages for different category of Farm Workers in different States/ UTs. under the Minimum Wages Act, 1948 (As on 12.07.2013)

(₹ per day)

S.No.	Appropriate Governments	Category	Minimum Wages for Agricultural Workers with V.D.A .
(1)	'(2)	'(3)	(4)
1	Central Sphere	Unskilled	175.00-195.00
		Semi-Skilled	180.00-213.00
		Skilled/clerical	196.00-232.00
		Highly skilled	213.00-258.00
	States/Union Territories		
1	Andhra Pradesh	Lowest	112.00
		Highest	260.00
2	Andaman & Nicobar Islands	Unskilled	220.00-231.00
		Semi-skilled	232.00-240.00
		Skilled	245.00-262.00
		Highly Skilled	264.00-284.00
3	Arunachal Pradesh	Unskilled	80-90
		Semi-Skilled	85-95
		Skilled	146.15 - 165.38
4	Assam	Unskilled	158.55
		Semi-skilled	182.86
		Skilled	253.68
5	Bihar		162-223.23
6	Chandigarh	Unskilled	270.11
		Semi-skilled	275.88-279.73
		Skilled	287.42-296.07
		Highly Skilled	311.46
7	Chhattisgarh	Unskilled	137.03
8	Dadra & Nagar Haveli	Unskilled	156.20
		Semi-skilled	162.70
		Skilled	169.20
9	Delhi	Unskilled	297.00
		Semi-skilled	328.00
		Skilled	361.00
10	Goa	Unskilled	150.00
11	Gujarat		100.00
12	Haryana	Unskilled	200.46
		Semi-skilled	205.46-210.46
		Skilled	215.46-220.46
		Highly Skilled	225.46

(Contd)

(1)	'(2)	'(3)	(4)
13	Himachal Pradesh	Unskilled	120.00
14	Jammu & Kashmir	Unskilled	110.00
		Semi-skilled	150.00
		Skilled	200.00
		Supervisor	175.00
15	Jharkhand	Unskilled	160.03
		Semi-skilled	173.03
		Skilled	221.09
16	Karnataka		157.34
17	Kerala	For Light Work	150.00
		For Hard Work	200.00
18	Lakshadweep	Unskilled	200.00
		Semi-skilled	225.00
		Skilled	250.00
		Highly skilled	275.00
19	Madhya Pradesh	Unskilled	141.20
20	Maharashtra		100.00-120.00
21	Manipur	Unskilled	122.10
		Semi-skilled	129.97
		Skilled	132.60
22	Meghalaya	Unskilled	100.00
		Semi-skilled	120.00
		Skilled	140.00
23	Mizoram	Unskilled	170.00
		Semi-skilled	190.00
		Skilled -II	240.00
		Skilled -I	300.00
24	Nagaland	Unskilled	100.00
		Semi-skilled	110.00
		Skilled	120.00
25	Orissa		126.00-150.00
26	Puducherry		115.00
27	Punjab	Unskilled	170.14
28	Rajasthan	Unskilled	166.00
		Semi-skilled	176.00
		Skilled	186.00
		Highly Skilled	236.00
29	Tamil Nadu	Women (5 Hrs)	85.00
		Men (6 Hrs)	100.00
30	Tripura	Adult	140.00
		Young	98.00
31	Uttar Pradesh	Unskilled	100.00
32	Uttarakhand	Unskilled	129.50
33	West Bengal	Unskilled	183.00
		Semi-Skilled	201.00
		Skilled	221.00

Source : Ministry of Labour , New Delhi

18.1: Livestock Population in India

(Million Numbers)

Species	1951	1956	1961	1966	1972	1977	1982	1987	1992	1997	2003	2007
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Cattle	155.30	158.70	175.60	176.20	178.30	180.00	192.45	199.69	204.58	198.88	185.18	199.08
Adult Female Cattle	54.40	47.30	51.00	51.80	53.40	54.60	59.21	62.07	64.36	64.43	64.51	72.95
Buffalo	43.40	44.90	51.20	53.00	57.40	62.00	69.78	75.97	84.21	89.92	97.92	105.34
Adult Female Buffalo	21.00	21.70	24.30	25.40	28.60	31.30	32.50	39.13	43.81	46.77	50.97	54.47
Total Bovines	198.70	203.60	226.80	229.20	235.70	242.00	262.36	275.82	289.00	289.00	283.10	304.42
Sheep	39.10	39.30	40.20	42.40	40.00	41.00	48.76	45.70	50.78	57.49	61.47	71.56
Goats	47.20	55.40	60.90	64.60	67.50	75.60	95.25	110.21	115.28	122.72	124.36	140.54
Horses & Ponies	1.50	1.50	1.30	1.10	0.90	0.90	0.90	0.80	0.82	0.83	0.75	0.61
Camels	0.60	0.80	0.90	1.00	1.10	1.10	1.08	1.00	1.03	0.91	0.63	0.52
Pigs	4.40	4.90	5.20	5.00	6.90	7.60	10.07	10.63	12.79	13.29	13.52	11.13
Mules	0.06	0.04	0.05	0.08	0.08	0.09	0.13	0.17	0.19	0.22	0.18	0.14
Donkeys	1.30	1.10	1.10	1.10	1.00	1.00	1.02	0.96	0.97	0.88	0.65	0.44
Yaks	NC	NC	0.02	0.03	0.04	0.13	0.13	0.04	0.06	0.06	0.06	0.08
Total Livestock	**292.80**	**306.60**	**335.40**	**344.10**	**353.60**	**369.00**	**419.59**	**445.29**	**470.86**	**485.39**	**485.00**	**529.70**
Poultry	73.50	94.80	114.20	115.40	138.50	159.20	207.74	275.32	307.07	347.61	489.1	648.88
Dogs	NC	NC	NC	NC	NC	NC	18.54	17.95	21.77	25.48	29.03	19.09
Rabbits	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0.48	0.42

NC : Not Collected

Department of Animal Husbandry, Dairying & Fisheries.

18.2: All India Production of Milk, Eggs and Wool

Year	Milk (Million Tonnes)	Eggs (Billion Nos.)	Wool (Million Kgs.)
(1)	(2)	(3)	(4)
1985-86	44.0	16.1	39.1
1986-87	46.1	17.3	40.0
1987-88	46.7	17.8	40.1
1988-89	48.4	18.9	40.8
1989-90	51.4	20.2	41.7
1990-91	53.9	21.1	41.2
1991-92	55.7	21.9	41.6
1992-93	58.0	22.9	38.8
1993-94	60.6	24.2	39.9
1994-95	63.8	25.9	40.6
1995-96	66.2	27.2	42.4
1996-97	69.1	27.5	44.4
1997-98	72.1	28.7	45.6
1998-99	75.4	29.5	46.9
1999-00	78.3	30.4	47.9
2000-01	80.6	36.6	48.4
2001-02	84.4	38.7	49.5
2002-03	86.2	39.8	50.5
2003-04	88.1	40.4	48.5
2004-05	92.5	45.2	44.6
2005-06	97.1	46.2	44.9
2006-07	102.6	50.7	45.1
2007-08	107.9	53.6	43.9
2008-09	112.2	55.6	42.8
2009-10	116.4	60.3	43.1
2010-11	121.8	63.0	43.0
2012-12	127.9	66.5	44.7
2012-13	132.4	69.7	46.1

Source : Department of Animal Husbandry, Dairying & Fisheries.

18.3: State-wise production of Milk, Eggs, Meat and Wool

States/UTs	Milk (000Tonnes)				Eggs (Lakhs Nos.)			
	2009-10	2010-11	2011-12	2012-13	2009-10	2010-11	2011-12	2012-13
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Andhra Pradesh	10429	11203	12088	12762	193958	201277	212103	222974
Arunachal Pradesh	26	28	22	23	380	407	419	439
Assam	756	790	796	800	4671	4707	4705	4710
Bihar	6124	6517	6643	6845	11002	7446	7552	8372
Chhattisgarh	956	1029	1119	1164	10520	12454	12984	13704
Goa	59	60	60	61	148	149	149	458
Gujarat	8844	9321	9817	10315	12762	13269	14269	14558
Haryana	6006	6267	6661	7040	38453	39644	41142	42343
Himachal Pradesh	971	1102	1120	1139	1000	1021	1050	1069
Jammu & Kashmir	1592	1609	1614	1631	7242	7725	6520	6715
Jharkhand	1463	1555	1745	1679	3925	4153	4313	4239
Karnataka	4822	5114	5447	5718	29094	30674	34699	36773
Kerala	2509	2645	2716	2791	16330	16856	17049	22375
Madhya Pradesh	7167	7514	8149	8838	7075	7577	7972	8711
Maharashtra	7679	8044	8469	8734	38640	42245	43861	45661
Manipur	78	78	79	80	1119	1137	1149	1162
Meghalaya	78	79	80	81	999	1011	1021	1028
Mizoram	11	11	14	14	371	387	349	352
Nagaland	78	76	78	79	834	802	704	618
Odisha	1651	1671	1721	1724	23193	23571	23007	23230
Punjab	9389	9423	9551	9724	32828	35449	36030	37911
Rajasthan	12330	13234	13512	13946	6713	6697	9605	10335
Sikkim $	44	43	45	42	136	140	146	146
Tamil Nadu	6787	6831	6968	7005	108476	115137	118518	119334
Tripura	100	104	111	118	1442	1569	1650	1565
Uttar Pradesh	20203	21031	22556	23330	10596	10991	16075	17074
Uttarakhand	1377	1383	1417	1478	2536	2614	2712	3079
West Bengal	4300	4471	4672	4859	36978	39939	43433	47115
A & N Islands	24	25	26	21	657	672	780	741
Chandigarh	46	45	45	44	249	180	181	170
D & N Haveli $	10	11	11	11	71	70	73	73
Daman & Diu $	1	1	1	1	19	19	20	20
Delhi $	466	480	502	287	1	1	1	
Lakshadweep	2	2	2	2	138	138	140	140
Puducherry	46	47	45	47	113	114	116	113
All India	**116425**	**121848**	**127904**	**132431**	**602671**	**630244**	**664499**	**697307**

(Contd)

States/UTs	Meat (000 Tonnes)				Wool (000 Kgs)			
	2009-10	2010-11	2011-12	2012-13	2009-10	2010-11	2011-1	2012-13
(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Andhra Pradesh	679	747	824	906	4605	4832	4924	5031
Arunachal Pradesh	21	21	19	18	16	14	17	18
Assam	32	34	34	37	-	-	-	-
Bihar	218	223	228	228	260	260	266	267
Chhattisgarh	25	27	30	34	166	114	104	107
Goa	6	7	10	8	-	-	-	-
Gujarat	21	22	35	35	2919	2918	2819	2664
Haryana	241	319	337	348	1246	1287	1333	1370
Himachal Pradesh	4	3	4	4	1614	1642	1648	1649
Jammu & Kashmir	30	31	32	34	7282	7382	7530	7681
Jharkhand	47	44	46	45	136	149	202	159
Karnataka	119	124	140	166	7165	7179	7779	8020
Kerala	118	124	426	401	-	-	-	-
Madhya Pradesh	36	38	39	43	370	372	413	442
Maharashtra	545	563	585	591	1726	1448	1469	1503
Manipur	24	24	24	25	-	-	-	-
Meghalaya	37	38	38	39	-	-	-	-
Mizoram	10	10	13	12	-	-	-	-
Nagaland	66	65	78	71	-	-	-	-
Odisha	128	138	138	141	-	-	-	-
Punjab	147	175	181	212	485	506	532	558
Rajasthan	92	107	122	152	12529	12277	13192	14007
Sikkim $	3	3	3	3	1	1	1	1
Tamil Nadu	502	466	460	462	31	1	1	1
Tripura	21	23	25	32	-	-	-	-
Uttar Pradesh	800	845	956	1137	1523	1543	1420	1456
Uttarakhand	10	14	16	22	353	362	371	400
West Bengal	544	577	611	648	697	705	713	722
A & N Islands	0.4	0.4	0.4	0	-	-	-	-
Chandigarh	1	1	1	1	-	-	-	-
D & N Haveli $	0.1	0.1	0.1	0	-	-	-	-
Daman & Diu $	0.2	0.2	0.2	0	-	-	-	-
Delhi $	26	42	45	81	-	-	-	-
Lakshadweep	0.4	0.4	0.4	0	-	-	-	-
Puducherry	11	13	14	14	-	-	-	-
All India	**4566**	**4869**	**5514**	**5948**	**43124**	**42991**	**44734**	**46055**

Note: Meat production from commercial poultry form has been included from 2009-10 onwards.
(-): Not available
$: Provisional /Not received from the state. The figure of previous year has been used
Source;-Department of Animal Husbandry, Dairying & Fisheries.

19.1: Fish Production in India

('000 Tonnes)

Year	Marine	Inland	Total
(1)	(2)	(3)	(4)
1950-51	534	218	752
1955-56	596	243	839
1960-61	880	280	1160
1965-66	824	507	1331
1970-71	1086	670	1756
1973-74	1210	748	1958
1978-79	1490	816	2306
1979-80	1492	848	2340
1980-81	1555	887	2442
1981-82	1445	999	2444
1982-83	1427	940	2367
1983-84	1519	987	2506
1984-85	1698	1103	2801
1985-86	1716	1160	2876
1986-87	1713	1229	2942
1987-88	1658	1301	2959
1988-89	1817	1335	3152
1989-90	2275	1402	3677
1990-91	2300	1536	3836
1991-92	2447	1710	4157
1992-93	2576	1789	4365
1993-94	2649	1995	4644
1994-95	2692	2097	4789
1995-96	2707	2242	4949
1996-97	2967	2381	5348
1997-98	2950	2438	5388
1998-99	2696	2602	5298
1999-00	2852	2823	5675
2000-01	2811	2845	5656
2001-02	2830	3126	5956
2002-03	2990	3210	6200
2003-04	2941	3458	6399
2004-05	2779	3526	6305
2005-06	2816	3756	6572
2006-07	3024	3845	6869
2007-08	2920	4207	7127
2008-09	2978	4638	7616
2009-10	3104	4894	7998
2010-11	3250	4981	8231
2011-12	3372	5294	8666
2012-13(P)	3275	5744	9019

P = Provisional

Source: Department of Animal Husbandry Dairying & Fisheries

19.2: State- wise Production of Fish

(In tonnes)

Sr. No.	States/UTs	2010-11			2011-12			2012-13(P)		
		Marine	Inland	Total	Marine	Inland	Total	Marine	Inland	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Andhra Pradesh	288637	1079565	1368202	433278	1169890	1603168	414349	1393728	1808077
2	Arunachal Pradesh	0	3150	3150	0	3300	3300	0	3710	3710
3	Assam	0	227242	227242	0	228621	228621	0	254270	254270
4	Bihar	0	299910	299910	0	344470	344470	0	400140	400140
5	Goa	89962	3308	93270	86205	3751	89956	73713	4166	77879
6	Gujarat	688930	85972	774902	692488	91231	783719	6933500	92586	786086
7	Haryana	0	96195	96195	0	106000	106000	0	96704	96704
8	Himachal Pradesh	0	7381	7381	0	8045	8045	0	8561	8561
9	J & K	0	19700	19700	0	19850	19850	0	19950	19950
10	Karnataka	340570	186009	526579	347383	199053	546436	373167	202216	575383
11	Kerala	560398	121215	681613	553177	140031	693208	484392	149098	633490
12	Madhya Pradesh	0	56451	56451	0	75405	75405	0	85165	85165
13	Maharashtra	446703	148546	595249	433684	145110	578794	433684	145110	578794
14	Manipur	0	20200	20200	0	22219	22219	0	24502	24502
15	Meghalaya	0	4557	4557	0	4768	4768	0	5417	5417
16	Mizoram	0	2901	2901	0	2928	2928	0	5430	5430
17	Nagaland	0	6585	6585	0	6840	6840	0	7130	7130
18	Odisha	133479	252706	386185	114295	267533	381828	118311	291832	410143
19	Punjab	0	97040	97040	0	97620	97620	0	99130	99130
20	Rajasthan	0	28200	28200	0	47850	47850	0	55160	55160
21	Sikkim	0	180	180	0	280	280	0	490	490
22	Tamil Nadu	404612	210197	614809	426735	184753	611488	428441	191956	620397
23	Tripura	0	49231	49231	0	53335	53335	0	57460	57460
24	Uttar Pradesh	0	417479	417479	0	429718	429718	0	449750	449750
25	West Bengal	197108	1246151	1443259	182020	1290025	1472045	152352	1337664	1490016
26	A & N Islands	33735	186	33921	35072	192	35264	36426	194	36620
27	Chandigarh	0	242	242	0	96	96	0	46	46
28	D & N Haveli	0	50	50	0	50	50	0	50	50
29	Daman & Diu	16851	124	16975	17429	0	17429	18778	234	19012
30	Delhi	0	820	820	0	740	740	0	690	690
31	Lakshadweep	12372	0	12372	12372	0	12372	12372	0	12372
32	Puducherry	36100	5849	41949	37608	4795	42403	35606	5460	41066
33	Chhattisgarh	0	228207	228207	0	250695	250695	0	255611	255611
34	Uttarakhand	0	3818	3818	0	3834	3834	0	3847	3847
35	Jharkhand	0	71886	71886	0	91676	91676	0	96600	96600
	Total	**3249457**	**4981253**	**8230710**	**3371746**	**5294704**	**8666450**	**3275091**	**5744057**	**9019148**

(P) Provisional

Source: Department of Animal Husbandry Dairying & Fisheries

20.1: Rainfall in 2013 (January-September)

In 2013, the rainfall (January to September, 2013) over the country as a whole was 103% of Long Period Average (LPA). Out of 36 meteorological subdivisions, 31 received excess / normal rainfall and 05 received deficient rainfall. Season wise rainfall distribution over the country as a whole was as follows:

Winter (January to February 2013):	126% of LPA
Pre-monsoon (March to May 2013):	78% of LPA
Monsoon (June to September 2013):	106% of LPA

Season-wise Performance

Winter Season (January-February 2013)

During the winter season rainfall activity over the country as a whole was good with 126% of the LPA rainfall. At met sub-division level, 25 subdivisions received excess rainfall, 04 Subdivisions received normal rainfall, 02 received deficient and 05 received scanty rainfall out of 36 met sub-divisions.

Pre-Monsoon Season (March-May 2013)

Rainfall activity during the Pre-monsoon season over the country as a whole was recorded deficit 78% of LPA rainfall. Out of 36 meteorological subdivisions, 04 received excess rainfall, 12 received normal rainfalls, 13 received deficient rainfall and 07 met sub-divisions received scanty rainfall.

Monsoon Season (June-September 2013)

Monsoon season witnessed normal rainfall in over the country as a whole. During the season for the country as a whole, rainfall was 106% of its Long Period Average (LPA) value. Seasonal rainfall was 109% of LPA over Northwest India, 123% of its LPA over Central India, 115% of its LPA over south Peninsula and 72 % of its LPA over East and Northeast (NE) India. At met sub-division level, 14 subdivisions received excess rainfall, 16 subdivisions received normal rainfall and remaining 06 sub-divisions received deficient rainfall. Excess / normal rainfall sub-divisions covered 86.% of the geographical area of the country. Out of 622 districts for which rainfall data were available, 184 districts (30%) received excess rainfall, 264 districts (42%) normal rainfall, 156 districts (25%) deficient rainfall and 18 districts (3%) received scanty rainfall.

20.2: Performance of South West Monsoon during 1989 to 2013 (1 June -30 September)

Year	Number of Meteorological Sub-Divisions @		Percentage of Districts with	Actual Rainfall as % of Normal Rainfall (All India)
	Excess/ Normal Rainfall	Deficient/ Scanty Rainfall	Normal/ Excess Rainfall	
(1)	(2)	(3)	(4)	(5)
1989	29	6	72	101
1990	32	3	88	119
1991	27	8	68	91
1992	32	3	65	93
1993	31	4	78	100
1994	25	10	77	110
1995	33	2	79	100
1996	32	3	82	103
1997	32	3	81	102
1998	33	2	83	106
1999	28	7	67	96
2000	28	7	66	92
2001	30	5	68	92
2002	15	21	39	81
2003	33	3	77	102
2004	23	13	56	87
2005	32	4	72	99
2006	26	10	59	100
2007	31	5	72	106
2008	33	3	76	98
2009	14	22	41	78
2010	31	5	69	102
2011	33	3	76	101
2012	23	13	58	92
2013	30	6	72	106

@ Total number of Meteorological sub-divisions was 35 upto 2001. From 2002 onwards, the no. of meteorological sub-divisions is 36.

Excess : + 20% or more of Long Period Average Rainfall

Normal : Between + 19% and -19% of Long Period Average Rainfall

Deficient : Between -20% and -59% of Long Period Average Rainfall

Scanty : Between -60% and -99% of Long Period Average Rainfall

Source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation.

20.3: All India Rainfall Distribution from 1992-93 to 2013-14

(In Millimeters)

Year	Monsoon Season (June-September)			Post-Monsoon (October-December)			Winter Season (January-February)			Pre-monsoon Season (March-May)			Over all rainfall (June-May)		
	Actual	Normal	% Departure	Actual	Normal	% Departure	Actual	Normal	% Departure	Actual	Normal	% Departure	Actual	Normal	% Departure
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1992-93	830.7	899.2	-7.6	106.5	114.1	-6.7	37.9	41.0	-7.6	116.5	121.3	-4.0	1091.6	1175.6	-7.1
1993-94	902.1	908.9	-0.7	131.6	119.6	10.0	44.5	40.8	9.1	106.1	123.3	-13.9	1184.3	1192.6	-0.7
1994-95	999.2	906.8	10.2	121.5	119.6	1.6	53.1	41.1	29.2	123.5	123.2	0.2	1297.3	1190.7	9.0
1995-96	904.5	904.7	0.0	117.8	119.9	-1.8	37.4	40.8	-8.3	94.9	123.9	-23.4	1154.6	1189.3	-2.9
1996-97	927.6	905.7	2.4	128.0	120.8	6.0	21.0	40.6	-48.3	118.9	123.2	-3.5	1195.5	1190.3	0.4
1997-98	927.4	908.6	2.1	187.7	119.5	57.1	44.1	41.9	5.3	132.3	128.3	3.1	1291.5	1198.3	7.8
1998-99	945.2	903.6	4.6	178.8	121.8	46.8	28.4	42.8	-33.6	123.1	130.6	-5.7	1275.5	1198.8	6.4
1999-00	866.9	903.2	-4.0	144.7	121.8	18.8	43.1	42.5	1.4	128.8	129.5	-0.5	1183.5	1197.0	-1.1
2000-01	833.7	902.3	-7.6	64.1	121.7	-47.3	16.2	42.2	-61.6	129.7	129.3	0.3	1043.7	1195.5	-12.7
2001-02	826.0	901.1	-8.3	137.7	121.7	13.1	35.0	41.2	-15.0	121.5	132.0	-8.0	1120.2	1196.0	-6.3
2002-03	737.1	911.7	-19.2	83.4	123.7	-32.6	53.2	38.3	38.9	107.7	131.7	-18.2	981.4	1205.4	-18.6
2003-04	947.3	902.7	4.9	134.6	125.0	7.7	34.5	39.2	-12.0	161.6	129.6	24.7	1278.0	1196.5	6.8
2004-05	779.6	893.3	-12.7	111.8	125.7	-11.1	69.8	43.8	59.0	124.7	134.5	-7.3	1085.9	1197.3	-9.3
2005-06	879.3	892.5	-1.0	138.4	125.8	10.0	27.8	43.9	-37.0	139.9	134.6	3.9	1185.4	1196.8	-1.0
2006-07	886.6	892.2	-0.6	99.3	125.9	-21.1	34.3	43.8	-21.7	112.8	133.6	-15.6	1133.0	1195.5	-5.2
2007-08	936.9	892.2	5.0	85.4	125.9	-32.2	42.6	43.2	-1.4	115.3	133.5	-13.6	1180.2	1194.8	-1.2
2008-09	873.2	892.2	-2.1	87.2	125.9	-30.7	23.6	43.8	-46.1	91.0	134.5	-32.3	1075.0	1196.4	-10.1
2009-10	689.8	892.2	-22.7	135.5	125.9	7.6	24.6	43.8	-43.8	122.9	133.7	-8.1	972.8	1195.6	-18.6
2010-11	912.8	893.2	2.2	153.2	126.3	21.3	31.9	40.9	-22.0	114.4	131.3	-12.9	1212.3	1191.7	1.7
2011-12	899.9	887.5	1.4	65.7	127.2	-48.3	38.8	40.9	-5.1	90.3	131.3	-31.2	1094.7	1186.9	-7.8
2012-13	819.5	886.9	-7.6	100.6	127.2	-20.9	51.4	40.9	25.7	101.9	131.3	-22.4	1073.4	1186.3	-9.5
2013-14	936.7	886.9	5.6	139.0	102.5	35.6									

Note: * Post mansoon (October - December) 2012-13 till 20th November 2012.

Source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation.

20.4 :Broad region wise Monsoon (June-September) Rainfall distribution from 2005 to 2013

(In Millimeters)

Year	North-west India			Central India			South Peninsula			North-east India		
	Actual	Normal	% Departure	Actual	Normal	% Departure	Actual	Normal	% Departure	Actual	Normal	% Departure
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2005	552.1	611.6	-10	1094.9	993.2	10	808.9	722.6	12	1140.9	1430.7	-20
2006	573.7	611.6	-6	1152.2	993.9	16	684.6	722.6	-5	1177.6	1427.3	-17
2007	520.8	611.6	-15	1073.8	993.9	8	907.3	722.6	26	1485.9	1427.3	4
2008	651.7	611.6	7	956.9	993.9	-4	692.5	722.6	-4	1346.0	1427.3	-6
2009	392.1	611.6	-36	794.8	993.9	-20	693.0	722.6	-4	1037.7	1427.3	-27
2010	688.2	613.0	12	1027.9	991.5	4	853.6	722.9	18	1175.8	1436.2	-18
2011	654.8	615.0	7	1073.6	975.5	10	715.2	715.5	0	1233.6	1438.3	-14
2012	569.3	615.0	-7	934.6	974.2	-4	644.0	715.7	-10	1275.3	1437.8	-11
2013	671.8	615.0	9	1195.3	974.2	23	825.6	715.7	15	1037.9	1437.8	-28

Source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation.

20.5: Rainfall in 2013

S.N(	Meteorological Sub-Divisions	TOTAL RAINFALL IN WINTER-2013			TOTAL RAINFALL IN PRE-MONSOON-2013			TOTAL RAINFALL IN MONSOON-2013*			TOTAL RAINFALL IN POST-MONSOON-2013			TOTAL RAINFALL IN YEAR 2013(JAN. TO 17th July)		
		NORMAL (CMS)	ACTUAL (CMS)	DEVIATION (%)	NORMAL (CMS)	ACTUAL (CMS)	DEVIATION (%)	NORMAL (CMS)	ACTUAL (CMS)	DEVIATION (%)	NORMAL (CMS)	ACTUAL (CMS)	DEVIATION (%)	NORMAL (CMS)	ACTUAL (CMS)	DEVIATION (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	A & N Islands	8.3	10.5	26	46.5	59.9	29	168.3	215.2	28	47.8	63.0	32	270.9	348.6	29
2	Arunachal Pradesh	14.8	5.6	-62	75.0	61.8	-18	176.8	112.4	-36	21.5	20.8	-3	288.1	200.6	-30
3	Assam & Meghalaya	4.7	1.0	-79	59.0	50.1	-15	179.3	118.6	-34	17.5	12.1	-31	260.5	181.7	-30
4	Naga.,Mani.,Mizo.& Tripura	4.4	0.4	-91	49.4	39.4	-20	149.7	97.4	-35	22.0	12.6	-43	225.5	149.8	-34
5	Sub-Himalayan. WB & Sikkim	6.0	2.8	-53	45.7	43.3	-5	200.6	171.0	-15	17.1	21.7	27	269.4	238.8	-11
6	Gangetic West Bengal	3.4	1.3	-63	16.5	27.3	66	116.8	116.0	-1	14.8	35.8	142	151.5	180.4	19
7	Odisha	3.2	1.1	-65	13.5	11.4	-15	115.0	112.1	-3	13.7	39.1	187	145.3	163.7	13
8	Jharkhand	3.3	1.9	-43	7.9	8.1	2	109.2	84.4	-23	8.3	28.1	240	128.7	122.5	-5
9	Bihar	2.3	2.9	24	7.8	11.9	54	102.8	72.3	-30	7.1	19.8	179	119.9	106.9	-11
10	East U.P.	2.9	6.8	135	3.2	1.2	-61	89.8	86.5	-4	5.3	9.8	85	101.1	104.3	3
11	West U.P.	3.3	9.3	179	2.9	0.7	-75	76.9	75.9	-1	4.5	6.1	36	87.7	92.0	5
12	Uttaranchal	10.6	26.1	146	15.6	6.5	-58	122.9	137.4	12	6.5	3.2	-50	155.6	173.3	11
13	Harayana,Chd.,and Delhi	3.3	7.3	122	3.4	1.0	-71	46.6	36.3	-22	2.0	1.3	-36	55.3	45.9	-17
14	Punjab	5.0	5.9	20	5.4	1.9	-65	49.2	48.0	-2	2.5	2.2	-12	62.0	58.0	-6
15	Himachal Pradesh	19.6	25.0	28	24.5	13.0	-47	82.5	77.5	-6	5.3	3.6	-32	131.9	119.1	-10
16	Jammu & Kashmir	21.3	25.7	21	32.6	18.8	-42	53.5	65.1	22	5.8	6.7	16	113.1	116.3	3
17	West Rajasthan	0.7	3.0	303	1.9	0.9	-53	26.3	33.6	28	0.7	1.1	56	29.7	38.5	30
18	East Rajasthan	1.1	2.3	114	1.7	0.5	-69	61.6	77.8	26	2.1	3.1	45	66.5	83.7	26
19	West Madhya Pradesh	1.4	3.3	141	1.4	1.2	-13	87.6	127.8	46	4.0	6.4	59	94.4	138.6	47
20	East MP	3.5	4.6	30	2.5	2.4	-5	105.1	134.1	28	4.3	12.2	182	115.5	153.3	33
21	Gujarat Region	0.1	0.1	0	0.6	0.6	-13	90.1	118.4	31	2.9	6.0	105	93.8	125.0	33
22	Saurashtra, Kutch & Diu	0.1	0.2	257	0.4	1.0	149	47.4	77.7	64	2.6	3.5	32	50.4	82.4	63
23	Konkan & Goa	0.0	0.5	1467	3.7	2.2	-40	291.4	350.3	20	13.8	15.6	13	309.0	368.6	19

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
24	Madhya Maharashtra	0.2	0.5	179	3.8	1.3	-65	72.9	88.0	21	9.5	6.0	-37	86.4	95.9	11
25	Marathawada	0.7	1.1	59	3.0	1.7	-44	68.3	74.7	9	8.7	9.4	9	80.7	86.9	8
26	Vidarbha	1.7	2.0	14	3.1	0.7	-78	95.5	136.0	43	6.7	13.4	99	107.0	152.1	42
27	Chhattisgarh	2.1	2.2	5	4.5	5.3	17	114.7	116.0	1	6.8	17.5	158	128.2	141.0	10
28	Coastal Andhra Pradesh	1.9	4.0	111	9.7	6.3	-35	58.1	52.4	-10	27.6	40.7	48	97.2	103.3	6
29	Telangana	1.1	3.4	202	5.7	3.8	-34	75.5	95.0	26	11.0	23.5	114	93.3	125.6	35
30	Rayalseema	0.7	2.2	236	8.2	6.8	-17	39.8	42.0	6	18.0	15.9	-12	66.7	67.0	0
31	Tamil Nadu & Pondicherry	3.1	3.5	13	12.8	9.2	-28	31.7	32.2	1	31.0	22.1	-29	78.6	67.0	-15
32	Coastal Karnataka	0.1	1.9	2049	17.9	12.5	-30	308.4	362.1	17	23.6	26.4	11	350.0	402.8	15
33	North Interior Karnataka	0.4	0.7	82	8.5	7.7	-9	50.6	53.3	5	13.4	10.2	-24	72.9	71.9	-1
34	South Interior Karnataka	0.4	1.1	141	14.5	14.2	-2	66.0	82.7	25	18.6	11.7	-37	99.6	109.7	10
35	Kerala	2.4	4.4	81	38.0	21.9	-42	204.0	256.3	26	41.5	35.9	-13	285.9	318.5	11
36	Lakshadweep	3.6	6.1	71	23.2	13.1	-44	99.9	105.7	6	24.7	13.5	-45	151.3	138.4	-9
	All-India (Area Weighted)	**40.9**	**51.4**	**26**	**131.3**	**101.9**	**-22**	**886.9**	**936.7**	**6**	**10.3**	**13.9**	**36**	**1069.4**	**1103.9**	**3**

Winter - (January - February) Pre-Monsoon (March - May) Monsoon - (June - September) Post-Monsoon - (October - December)

*:- Monsoon, 2013 till 20th November, 2013.

Source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation.

20.6: Brief History of Most Intense Cyclones from 1970 -2012

S.No.	Name of Cyclone	Date and Year	Intensity (T-Number)	Observed/ Estimated Max. Wind	Damage
(1)	(2)	(3)	(4)	(5)	(6)
I. Over the Arabian Sea					
1	Severe Cyclonic Storm over the Arabian sea	October 19-24 1975	N/A	180 Knots 74 Kmph	85 peale died in the districts of Junagarh, Jamnagar and Rajkot of Gujarat state. This cyclone caused considerable damage estimated to be about ` 75 Crores.
2	Severe Cyclonic Storm over the Arabian sea	May 31 - June 5 1976	N/A	90 Knots 167 Kmph	This cyclone caused damage which was estimated to be about ` 3 Crores. 4 Burges each containing ` 5 lakh and 6 fishing boats were swept away. Mahasana, Bhavnagar, Kaira, Panchmahal, Rajkot and Bharoch districts of Gujarat state were most affected areas.
3	Severe Cyclonic Storm over the Arabian sea	November 13 - 23 1977	T 5.5 (As per US satellite)	90 Knots 167 Kmph	Kerala and Lakshadweep were most affected areas due to this storm. Peaple killed - 72, Houses damaged -8400 and 620 fishing vessels damaged in Kerala coast. Total loss was estimated to be about ` 10 crores.

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
4	Gujarat Cyclone	November 5 - 13 1978	N/A	278 Kmph	Demage to property reported.
5	Severe Cyclonic Storm over the Arabian sea	October 28 - November 3, 1981	T - 4.0 (as per US satellite)	65 Knots 120 Kmph	Junagarh, Rajkot and Jamnagar of Gujarat state were most affected areas, Total loss of damage to property was estimated to be about ` 52 Crores.
6	Severe Cyclonic Storm over the Arabian sea	November 4-9, 1982	N/A	N/A	Saurastra Coast of Gujarat about 45 km east of Veraval was affected very much by this storm. 507 people died and 1.5 lakh livestock perished.
7	Severe Cyclonic Storm over the Arabian sea	November 4-9, 1982	T- 4.0	50 Knots 93 Kmph	50 fishermen were reported missing in Gujarat Coast.
8	Severe Cyclonic Storm over the Arabian sea	June 17-20, 1996	T-3.5	60 Knots 111 Kmph	19 Districts of Gujarat State were affected. 33 people died. 27964 pucca houses were destroyed. Total estimated loss was ` 1803.52 lakh.
9	Severe Cyclonic Storm over the Arabian sea	October 23-28, 1996	T-4.0	60 Knots 111 Kmph	As the system did not cross the coast no significant damage was reported.
10	Very severe Cyclonic Storm over the Arabian sea	June 4-10, 1998	T-5.0	90 Knots 167 Kmph	Gujarat & Rajasthan states were affected. Porbander of Gujarat state was the most affected area. Loss incurred due to storm was estimated to be about ` 1855.38 Crores in Kandla. Number of lives lost 1173 and number of persons missing 1774 in Gujarat.

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
11	Very severe Cyclonic Storm over the Arabian sea	May 16-22, 1999	T- 5.5	55 Knots 102 Kmph	This system caused severe damage in Kutch and Jamnagar districts of Gujarat. 453 people died. Loss of property was estimated to be about ` 80 crores. In Rajasthan one person died and 5104 cattle heads perished. 5133 houses were partially damaged.
12	Severe Cyclonic Storm over Arabian sea	May 5-10, 2004	3.5	Weakened over sea	Widespread damage caused at Lakshadweep. Several houses damaged due to wind, sea wave, falling of trees and floods. 45 houses, 35 boats and small mechanized cargo ships lost in sea near land. 16 boats reported sunk and cargo boat damaged. Sea erosion reported over Kerala and 9 people dead and 17 people missing. Total loss worth ` 30 crores.
13	Severe Cyclonic" Storm MUKDA" over Arabian sea	September 21-24,2006	3.5	55 Knots 102 Kmph	No damage as dissipated over the Arabian Sea.
14	Super cyclone "GONU"	01-07 June 2007	T-6.5	127 knots	The system crossed Makaran coast and hence there was no damage in India
15	Cyclonic storm "YEMYIN"	25 - 26 June 2007	T - 2.5	35 knots	The cyclone crossed Pakistan coast and hence there was no damage in India

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
16	Cyclonic Storm **PHYAN** (Arabian sea)	9-12 Nov. 2009	3.0	45 Knots 83 Kmph	According to State Govt. and news agencies reports, it caused damage to lives, crops and properties in Goa and Konkan region especially in Ratnagiri, Sindhudurg, Raigarh and Thane districts. About 1000 houses damaged, seven persons died and about 44 fishermen missing.
17	Cyclonic Storm **WARD** (Arabian sea)	10-15 Dec.2009	3.0	45 Kts (83 Kmph)	No damage over India.
18	Cyclonic Storm **Bandu**	May 19 -23 2010	2.5	40 knots	
19	Cyclonic Storm **Phet**	May 31 - 07 June 2010	4.5	85 knots	
20	Cyclonic Storm **"KEILA"**	29th October to 4th November, 2011	T 2.5	35 kts (65 kmph)	No damages over India.

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
'II. Over the Bay of Bengal					
1	Bangladesh (Chittagong)	November 12-13, 1970	N/A	224 Kmph	30,00,000 people died
2	Balasore (Odisha)	October 26-31, 1971	N/A	185 Kmph	10,000 people died and 1 million people rendered homeless.
3	Andhra Cyclone	November 14-20, 1977	N/A	259 Kmph	8547 People died. Strom surge height 5 m.
4	Sri Harikota (A.P.)	November 9-14, 1984	T-6.0	213 Kmph	604 people died.
5	Indo-Bangladesh Border	November 24-30, 1988	T-6.0	213 Kmph	2000 people died. 6000 people missing in Bangladesh.
6	Kavali (A.P.)	November 1-9, 1989	T-6.5	235 Kmph	69 people died.
7	Machilipatnam (A.P.)	May 4-9, 1990	T-6.5	235 Kmph	967 people died.
8	Bangladesh (Chittagong)	April 25-30, 1991	T-6.5	235 Kmph	1,38,882 people died. 1,39,054 people injured.
9	Bangladesh (Teknaf)	April 24 - May 2, 1994	T-6.0	215 Kmph	184 people killed
10	Bangladesh (Teknaf)	May 15-19, 1997	T-6.0	230 Kmph As reported by Bangladesh Met. Office	155 people died. 9663 people injured.
11	Gopalpur Cyclone (Odisha)	October 15-19, 1999	T-5.0	170 Kmph	198 people died. 402 persons injured.
12	Super Cyclone (Odisha)	October 25-31, 1999	T-7.0	260 Kmph	9887 people died. 129.22 lakh people affected.

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
13	Very severe Cyclonic Storm over the bay of Bengal.	November 26-30 , 2000	T- 5.5	102 Knots 189 kmph	Two states viz., Tamil Nadu and Puducherry were mainly affected by this storm. The loss was mainly due to crop damage. Uprooting of big trees and partial damages to more than one thousand kuchha houses. 30,000, Plantain trees and 50,000 Plantain saplings got destroyed and 30,000 trees were uprooted in Tamil Nadu state. In Puducherry two persons lost their lives. Damage to paddy crops, plantains, coconut plantation were the major losses in Puducherry.
14	Very severe Cyclonic Storm over the bay of Bengal	December 23-28, 2000	T- 5.0	90 Knots 167 Kmph	Three districts of Tamil Nadu state were affected by this storm in the Ramnathanpuram district, 350 houses were damaged in Thirunelveli. Houses damaged - 318. In Tutocorin houses damaged-318, Fishing boats lost - 95, loss to crops - 281 hectares of paddy, 650 hectares of plantain and 80 hectares of betal destroyed.
15	Cyclonic Storm over Bay of Bengal	October 14-17, 2001	2.5	35 Knots 65 kmph	108 people dead, 21 people missing, damage to crops about 125000 Hectares and 55747 house damaged in Andhra Pradesh.
16	Severe Cyclonic Storm over Bay of Bengal	November 10-12, 2002	3.5	55 Knots 102 kmph	Two travelers damaged and 18 people died in Odisha and another two trawlers missing. In West Bengal 2 people died.

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
17	Severe Cyclonic Storm over Bay of Bengal	December 11-16, 2003	3.5	55 Knots 102 kmph	81 people dead in Andhra Pradesh, 1637 Building destroyed completely, 7453 Building partially damaged 61898.5 hectares of Agricultural land damaged. Loss of property to the tune of ` 23903.13 Lakh. No of villages electric failure are 2000 and telecommunication disruption are in 41 villages.
18	Cyclonic Storm "PYARR" over Bay of Bengal	September 17-21, 2005	T-2.5	35 Knots 65 kmph	Damages reported in Andhra Pradesh are as follows Number of Human deaths -1 , Number of livestock died - 291 , Buildings partly / completely destroyed - 12041, (estimated cost ` 177.28 lakhs) , Crop loss - 4,82,188 hectares (estimated cost ` 627.74 lakhs) ,Total loss estimated by Government - ` 5029.82 lakhs.
19	Cyclonic storm "BAAZ" over Bay of Bengal	November 28-December-02, 2005	T-3.0	45 Knots 83 Kmph	According to press reports, heavy rain caused floods in Nellore. Chittoor and Cuddapah districts of Andhra Pradesh. Number of deaths - 11 (Nellore7, Chittoor 3 Cuddapah 1), Number of tanks breached - 27 (Nellore district), Many villages were reported to be marooned in the above districts.

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
20	The Very Severe Cyclonic Storm "Mala"over the Bay of Bengal	May 25- 30, 2006	5.5	100 Knots 185 Kmph	It crossed the coast of Myanmar and hence there was no damage in India.
21	Cyclonic Storm "OGNI" over Bay of Bengal	October 29-30, 2006	2.5	35 Knots 65 Kmph	Andhra Pradesh Loss of life : 24 Livestock :3,61,553 Loss of crops:1,99,986 acres Villages submerged : 900 Damage to houses (fully) : 26,853 Damage to houses (partly): 73,218 Total loss : ` 21,601 lakhs.
22	Cyclonic storm "AKASH"	13 -15 May 2007	T- 6.0	115 knots	The system crossed Bangladesh coast and hence there was no damage in India
23	Very severe cyclonic storm "SIDR"	11 - 16 November 2007	T - 6.0	115 knots	The system crossed Bangladesh coast .However, one person died. 46 Villages and thousands of people were affected in west Bengal. Crops were damaged in thousands of hectares of land. There was disruption of electricity supply in the coastal belt of West Bangal due to breaking of dam over Bidyadhari river.Extensive ares were flooded near Gajikhali and Kheaghat.Some houses were partially/totally damaged in Mizoram.Shillong road was also affected at several places.

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
24	Nargis	27thApril to3rd May 2008	T - 5.0	Estimated 90 kts/167kmph (As per news paper 190 kmph)	As the system moved away form Indian coast there was no damage reported from India.
25	Rashmi	25th to 27th October 2008	T - 3.0	50 Knots 93 Kmph	Significant damage was reported over nirtheastern states. Numbers of human death wear 5 from Meghalaya and 8 from Arunachal Pradesh. The death was due to landslide caused by incessant rain along with strong wind.One person was washed away by surging water of the wahumkhrah river. Incessant rain and wind uprooted most of the electric posts in shillong. According to Assam electricity Board the uprooted trees sanpped trees snapped the power supply lines causing damage to power transmission. Due to severe thunder squall and continuous heavy rain, vast areas of Tawang and Bomdila of west Arunachal Pradesh were lashed in the night hours of 27-28th Oct. causing disruption of road and other communications. Several road bridges were broken down and a number of dwelling houses have been devastated besides injury to many persons.

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
26	Khaimuk	13th November to 16th November 2008	T 2.5	40 Knots 74 Kmph	Major erosion of coast seen at Uppadanear Kakinada. In many areas in East & West Godavari and krishna districts, paddy fields got inundated. Twenty one country boats washed off in the sea off konapapapeta in kothapalli mandal of East Godavari. A big ship was carried away by the waves along the Wakalapudi beach near lakinada of East Godavari district. Many boats and fishing nets wear swept off in the areas adjoining Wakadu, Alluru, Mypad,Gangapatnam in Nellore district.
27	Nisha	25th to 27th November, 2008	T - 3.0	45 Knots 83 Kmph	As per the Tamil Nadu Govt. Revenue site, loss of life wear 78 over the state during 24th to 28th November,2008 As per media reports 8 lakhs acres of paddy crops in Nagapattinam, Thanjavur and Tiruvarur (delta) districts and 55.250 hectares of paddy in cuddalore district were submerged due to heavy rain. Andhra Pradesh: Chittur, Nellore and Prakasam districts of south coastal Andhea Pradesh were affected by heavy rain/strong, 3.63 lakh hectares of crop were damaged. The heavy rain led to floods in south coastal Andhra Pradesh districts.

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
28	Cyclonic Storm **BIJLI** (Bay of Bengal)	14-17 April 2009	2.5	40 Knots 74 Kmph	No damage over India.
29	Severe Cyclonic Storm **AILA** (Bay of Bengal)	23-26 May 2009	3.5	60 Knots 112 Kmph	According to West Bengal state Government, number of people affected by storm was about 2.2 million. More than 61,000 houses were collapsed and more than 1,32,000 houses were partially damaged. About 100 people died in the state.In Odisha Numerous trees were uprooted and power lines were down . High waves produced by the storm inundated coastal villages, Forcing residents to evacuate to safer places. However there was no report of human death in the state. An estimated 1,000 acres of cropland were affected. In Meghalaya several houses were damaged, power supply was disrupted and many areas were flooded.
30	Cyclonic Storm "**Laila**" over Bay of Bengal	17 - 21 May, 2010	3.5	55 knots	
31	Cyclonic Storm "**Giri**" over Bay of Bengal	20 - 23 October, 2010	5.5	105 knots	
32	Cyclonic Storm "**Jal**" over Bay of Bengal	04 - 07 November, 2010	3.5	60 knots	

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
33	Very Severe Cyclonic Storm **"THANE"**	25th - 31st December, 2011	T 4.5	75 kts (139 kmph)	46 persons died in Tamil Nadu and Puducherry. 793 trees, electric posts were uprooted. Around 6000 persons in these areas were shifted to shelters. In Puducherry the storm has caused considerable loss to the Tourism Industry. About 73292 thatched houses were fully damaged and 94633 houses were partially damaged by wind and rain. Paddy crop in 58,200 hectares; sugarcane in 5,752; groundnut in 1,402; black gram in 945; coconut in 490 hectares were damaged in the entire cyclone affected areas. In horticultural sector, cashew in 23,500 hectares; banana plantation in 2,860; Jackfruit in 340; vegetables in 320; Mango trees in 317; Guava in 270; flowers in 250; betel nuts in 128; tuber in 73; amla in 12 hectares were damaged. In Cuddalore district alone 4500 electric poles, 4500 transformer, 27 electric towers were damaged. Electric wire in 10,500 Km length was damaged. The damages are worked out to be ` 1300 to 1500 crores.

logical Department, New Delhi.

34	Cyclone Storm MURJAN	23rd - 26th Oct-12	T2.5	40 Knots (75 kmph)	No damage over India
35	Cyclone Storm NILAM	28th October to 1st November 2013	T 3.0	45 Knots (85 kmph)	No damage over India

* Damage due to cyclone may be obtained from concerned states and National Disaster Management,
Source:-Ministry of Home Affairs, Government of India.

21 : Conversion Factors between Important Primary and Secondary Agricultural Commodities

Commodity	Conversion Factor
(1)	(2)
Rice (Cleaned) Production	2/3 of Paddy Production
Cotton	
Cotton Lint Production	1/3 of Kapas Production
Cotton Seed Production	2/3 of Kapas Production
	2 Times of Cotton Lint Production
Jute	
100 Yards of Hessian	54 lbs. of Raw Jute
4148 Yards of Hessian	1 Ton of Raw Jute
	5.55 Bales of Raw Jute (of 180 Kgs. Each)
1 Ton of Sacking	1.11 Tons of Raw Jute
	6.17 Bales of Raw Jute (of 180 Kgs. Each)
1 Ton of Hessian	1.05 Tons of Raw Jute
Sacking etc.	5.85 Bales of Raw Jute (of 180 Kgs. Each)
Groundnut	
Kernel to Nuts in Shell	70 Percent
Oil to Nuts in Shell	28 Percent
Oil to Kernels Crushed	40 Percent
Cake to Kernels Crushed	60 Percent
Sesamum	
Oil to Seeds Crushed	40 Percent
Cake to Seeds Crushed	60 Percent
Rapseed and Mustard	
Oil to Seeds Crushed	33 Percent
Cake to Seeds Crushed	67 Percent
Linseed	
Oil to seeds Crushed	33 Percent
Cake to Seeds Crushed	67 Percent
Castorseed	
Oil to Seeds Crushed	37 Percent
Cake to Seeds Crushed	63 Percent
Cotton Seed	
Oil to Seeds Crushed	14 to 18 Percent
Cake to Seeds Crushed	82 to 86 Percent

(Contd.)

Commodity	Conversion Factor
(1)	(2)
Coconut	
Copra to Nuts	One Ton of Copra = 6773 Nuts
Oil to Copra Crushed	62 Percent
Cake to Copra Crushed	38 Percent
Nigerseed	
Oil to Seeds Crushed	28 Percent
Cake to Seeds Crushed	72 Percent
Kardi Seed	
Oil to Seeds Crushed	40 Percent
Cake to Seeds Crushed	60 Percent
Mahua Seed	
Oil to Seeds Crushed	36 Percent
Cake to Seeds Crushed	64 Percent
Neem Seed	
Oil to Kernels Crushed	45 to 50 Percent
Cake to Kernels Crushed	50 to 55 Percent
Soyabean Seed	
Oil to Soyabean Seed Crushed	18 Percent
Meal to Soyabean Seed Crushed	73 Percent
Hull from Soyabean Seed Crushed	8 Percent
Wastage from Soyabean Seed Crushed	1 Percent
Sugar	
Gur from Cane Crushed	11.20 Percent to 11.50 Percent
Crystal Sugar from Gur Refined (Gur Refineries)	62.5 Percent
Crystal Sugar from Cane Crushed (Cane Factories)	10.20 Percent
Khandasari Sugar (Sulpher and Non-sulpher) from standard Gur Refined	46 Percent
Molasses from Cane Crushed	4.0 Percent to 4.5 Percent
Cane - Trash* from Cane Harvested	8.0 Percent to 12.0 Percent
Lac	
Seed Lac	66.0 Percent of Stick Lac
Shell Lac	57.4 Percent of Stick Lac
Cashewnut	
Cashew Kernel	25 Percent of Cashewnuts

* This consists of leaves and portion of the top of stalk which are removed from the canestalk, while harvesting and before sending the cane for milling.

22: List of Studies Conducted by Agro-Economic Research Centers

2008-09

1	Evaluation of Participatory Irrigation Management including water use Association in the States of A.P, Gujarat and Maharashtra –	CMA, Ahmadabad
2	Agricultural Machinery in India: Studies of Growth, Market Structure and Business Strategies.	CMA, Ahmadabad
3	Making Great Rann of Kutch Capable of Producing Food by Specially Designed Hydroponics System – Phase I.	CMA, Ahmadabad
4	Viable Entrepreneurial Trades of Women in Agriculture : Karnataka	ADRT, Bangalore
5	Cultivation of Medicinal & Aromatic Plants as a Means of Diversification in Agriculture. (Consolidated Report).	ADRT, Bangalore
6	Market Imperfection & Farmers Distress – Consolidated Report	ADRT, Bangalore
7	Public Policies and Sustainable Agricultural Development – A Case Study of Commercialised Agriculture.	IEG, Delhi
8	Factors Affecting Fertilizer Consumption in India with Special Reference to Tamil Nadu State.	Chennai
9	Cultivation of Medicinal Crops and Aromatics Crops as Means of Diversification in Agriculture.	Chennai
10	Estimation of Seed, Feed and Wastage Ratios for Major Foodgrains in Tamil Nadu.	Chennai
11	State Budgetary Resources and Agriculture Development in Uttrakhand.	Delhi
12	State Budgetary Resources and Agriculture Development in Haryana.	Delhi
13	Economies of Commercial Silk Weavers in Assam : A Study in Silk Village Sualkuchi in Kamrup District.	Jorhat
14	Participation of Plains Tribal Women in Non-Agricultural Development Activities.	Jorhat
15	Factors Affecting Fertilizers Consumption in India.	Ludhiana
16	Diversification of Agriculture – The Case of Horticulture in Maharashtra with Special Reference to Horticulture Development Programme linked with Employment Guarantee Scheme.	Pune
17	State Budgetary Resources and Agriculture Development in Maharashtra.	Pune
18	Diversification of Rural Livelihood Strategies : A Study of Economics, Gender & Natural Resources, Dimension of Horticulture in Himachal	Shimla
19	Food Insecurity Vulnerability and Coping Mechanisms – A Study of Agricultural Sector in Himachal Pradesh.	Shimla
20	Fish Production in Himachal Pradesh (Economic Analysis of Fish Ponds).	Shimla
21	State Budgetary Resources and Agriculture Development in Himachal Pradesh.	Shimla
22	Evaluation of Integrated Dairy Development Project (IDDP) in non-operation flood, hilly and backward areas : A Study in Sikkim.	Visva Bharati
23	Estimation of seed, feed and wastage ratio for major foodgrains in West Bengal.	Visva Bharati
24	Impact of Aquaculture on Agriculture Production, Rural Employment and Environment -A Study in Odisha.	Waltair

(Contd)

2009-10

1	Bt. Cotton – Consolidated Report.	CMA, Ahmadabad
2	Economic Policy Reforms and Indian Fertiliser Industry.	CMA, Ahmadabad
3	Management of Agri-Business Contracts and Organisations.	CMA, Ahmadabad
4	Fresh Food Retail Chains in India : Impact on Small Primary Vegetable Producers and Traditional F&V Retailers.	CMA, Ahmadabad
5	Mid-term Appraisal of DBT – Rural BIO Resource Complex Project.	ADRT, Bangalore
6	State Budgetary Resources and Agricultural Development in Karnataka.	ADRT, Bangalore
7	Sustainable Agriculture Development Through Organic Farming in Karnataka.	ADRT, Bangalore
8	Study in Tanks in Watershed Development Area in Karnataka.	ADRT, Bangalore
9	An Evaluation Study of Prime Minister's Rehabilitation Package for Farmers in Suicide Prone Districts of Karnataka	ADRT, Bangalore
10	Viable Entrepreneurial Trade for Women in Agriculture – Consolidated.	IEG, Delhi
11	The Problems and Prospects of Crop Diversification in Haryana and Punjab.	IEG, Delhi
12	Agricultural Diversification in India with Special Reference to Haryana.	IEG, Delhi
13	State Budgetary Resources and Agricultural Development.	Allahabad
14	Problems and Prospects of Fish Farming in Bihar and Jharkhand.	Bhagalpur
15	Impact Evaluation of Revised National Watershed Development Projects for Rainfed Areas (NWDPRA) during 10th Plan.	Bhagalpur
16	Understanding the Growth and Prospects of Agro-Processing Industries in Bihar.	Bhagalpur
17	State Budgetary Resources and Agricultural Development in Bihar.	Bhagalpur
18	An Evaluation Study of Prime Minister's Rehabilitation Package for Farmers in Suicide Prone Districts of Kerala	Chennai
19	The Impact of Macro Management Agriculture Scheme in Haryana.	Delhi
20	The Impact of Macro Management Agriculture Scheme in Uttarakhand.	Delhi
21	The Impact of Macro Management Agriculture Scheme in Uttarakhand.	Delhi
22	Impact Assessment Study of Agricultural Market Reforms in Uttarakhand and Haryana.	Delhi
23	An Economic Analysis of Chickpee and its Value Added Products in Agri-Export Zone for Pulses in M.P.	Jabalpur
24	State Budgetary Resources in Agricultural Development in M.P. and Chhattisgarh.	Jabalpur
25	Potentialities of Horticulture Crop and Market Accessibilities in Assam and Meghalaya.	Jorhat
26	Current Situation of Jhum Cultivation and to analyze Jhum Cycle in Mizoram and Meghalaya.	Jorhat

(Contd)

27	State Budgetary Resources in Agricultural Development – A Study in Assam.	Jorhat
28	Value Chain Analysis for High Value Crops (HVCs) in the Punjab State.	Ludhiana
29	Performance Evaluation of Bt. Cotton Cultivation in Punjab.	Ludhiana
30	State Budgetary Resources and Agricultural Development in Punjab.	Ludhiana
31	Understanding the Growth and Prospects of Agro-Economic Industries in Maharashtra.	Pune
32	Mid-Term Evaluation of Revised National Watershed Development Projects for Rainfed Areas (NWDPRA) during 10th Plan.	Pune
33	Evaluation of Five Decades of Livestock Development in Maharashtra and Threats and Opportunities in WTO Regime.	Pune
34	An Evaluation Study of Prime Minister's Rehabilitation Package for Farmers in Suicide Prone Districts of Maharashtra	Pune
35	The Impact of Macro Management of Agriculture Scheme in Maharashtra	Pune
36	Food in Security Vulnerability and Coping Mechanism : A Study of Agricultural Sector in H.P. *	Shimla
37	Determinants of Stagnation in Productivity, of Important Crops in HP	Shimla
38	The Impact of Macro Management of Agriculture Scheme. (Coordinator – ADRT, Bangalore)- Proposed by Macro Management	Shimla
39	State Budgetary Resources and Agricultural Development in Rajasthan.	Vallabh Vidyanagar
40	Mid-Term Evaluation of Revised National Watershed Development Projects for Rainfed Areas (NWDPRA) during 10th Plan in Rajasthan.	Vallabh Vidyanagar
41	State Budgetary Resources and Agricultural Development in Gujarat.	Vallabh Vidyanagar
42	Understanding the Growth and Prospect of Agro-Processing Industries in West Bengal.	Visva Bharati
43	State Budgetary Resources and Agricultural Development (West Bengal).	Visva Bharati
44	Market Access and Constraints in Marketing of Goats and Their Products in West Bengal.	Visva Bharati
45	Impact of Macro Management of Agricultural Scheme.	Visva Bharati
46	Environmental Degradation, Tank Irrigation and Agricultural Yields in North Coastal Andhra.	Waltair
47	State Budgetary Resources in Agricultural Development in Andhra Pradesh.	Waltair

2010-11

1.	Organic input Production & Marketing in India – Efficiency , Issues & Policies –	CMA, Ahmadabad
2.	Assessing Policy Interventions in Agri—business and Allied Sector Credit versus Credit Plus Approach for Livelihood Promotion Proposed / Cord.by- CMA , Coverage- Gujarat, AP Centers- V.V. Nagar, Waltair	CMA, Ahmadabad
3	Determinants of stagnation in Productivity of Important Crops in Karnataka	ADRT, Bangalore
4	Studies of Tanks in Watershed Development Area in Karnataka	ADRT, Bangalore

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5	Consolidated study-Evaluation of PM's Package for Rehabilitation of Farmers in Suicide Prone States Proposed By: Credit Division ,Coverage- AP, Karnataka, Kerala and Maharashtra	ADRT, Bangalore
6	Production, Market Structure and the Role of Govt. Policy : Foodgrains in the New Economy (Proposed by the IEG).	IEG, Delhi
7	Policy analysis for Increasing Rural Non –Farm Employment for farm households in India (FAO Study , not in work plan)	IEG, Delhi
8	Market Access and Constraints in Goat Marketing and Their Products in Uttar Pradesh	Allahabad
9	Management of Water Logged Areas in U.P. – Proposed by the Centre). – copy to be obtained.	Allahabad
10	The Impact of Macro Management of Agriculture Scheme.	Allahabad
11	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration, in Bihar .	Bhagalpur
12	Impact of emerging marketing channels in agricultural marketing--- benefit to producer-sellers and marketing costs and margins of major agricultural commodities in Bihar and Jharkhand	Bhagalpur
13	Possibilities and Constraints in Increasing Pulses Production in Bihar and the Impact of National Food Security Mission on Pulses"	Bhagalpur
14	The Impact of Macro Management of Agriculture Scheme.	Bhagalpur
15	The Impact of Macro Management of Agriculture Scheme. (Coordinator – ADRT, Bangalore)- Proposed by Macro Management Division of the Ministry.	Chennai
16	Irrigated Agriculture (Pattern and Scope for Diversification in Tamil Nadu (Proposed by the Centre).	Chennai
17	Evaluation of PM's Package for Rehabilitation of Farmers in Suicide Prone States- Kerla,Proposed by Credit Division , Cord -ISEC	Chennai
18	Market Access and Constraints in Marketing of Goats and Their Products (Coordinator-AERC, Allahabad).	Jabalpur
19	The Impact of Macro Management of Agriculture Scheme. (Coordinator – ADRT, Bangalore)- Proposed by Macro Management Division of the	Jabalpur
20	Impact of emerging marketing channels in Agricultural Marketing – Benefit to Producer – Seller & Marketing Costs and Margins of Agricultural Commodities.	Jabalpur
21	The Impact of Macro Management of Agriculture Scheme. (Coordinator – ADRT, Bangalore)- Proposed by Macro Management Division of the Ministry.	Jorhat
22	An Evaluation of Impact Macro Management of Agriculture in Punjab	Ludhiana
23	Estimating Infrastructural , institutional and organizational .requirements of promoting High Value Chain Analysis for Promoting High Value Crops (HVCs) in Punjab State	Ludhiana
24	Determinants/Trends in Productivity in important crops(Proposed by DAC)-Coordinator, ADRT, Bangalore).	Ludhiana
25	An Evaluation Study of Prime Minister's Rehabilitation Package for Farmers in Suicide Prone Districts of Kerala	Pune
26	Determinants of stagnation in Productivity of Important Crops in Maharashtra	Pune
27	Market Access and Constraints in Goat Marketing and Their Products in Maharashtra	Pune

(Contd)

28	Impact of emerging marketing channels in Agricultural Marketing – Benefit to producer – seller & Marketing Costs and Margins of Agricultural Commodities Coverage -	Pune
29	Possibilities and Constraints for increasing the Production of Pulses in India; and Impact of National Food Security Mission on Pulses	Pune
30	Economics of Contract Broiler Farming in Maharashtra. Coverage	Pune
31	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration, with all India coverage,	Pune
32	Production & Marketing Problems of Mushrooms in H.P.	Shimla
33	Impact of emerging marketing channels in Agricultural Marketing – Benefit to producer – seller & Marketing Costs and Margins of Apple & Tomato in H.P.	Shimla
34	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration, in H.P.	Shimla
35	Possibilities and Constraints for increasing the Production of Pulses in India and Impact of National Food Security Mission on Pulses	Vallabh Vidyanagar
36	Determinants of Stagnation in Productivity in Important Crops in W.B.(Consolidated by ADRT, Bangalore).	Visva Bharati
37	Mid-Term Evaluation Studies of National Development for Rainfed Areas for Tenth Plan in West Bengal.	Visva Bharati
38	Mid-Term Evaluation Studies of National Development for Rainfed Areas for Tenth Plan (Consolidated)	Visva Bharati
39	Understanding the Growth & Prospects of Agro-Processing Industries. Coordinated Report based on the study reports of AERC,Visva-Bharati, Bhagalpur and Pune.	Visva Bharati
40	Hulling and Milling Ratio in major Paddy growing states-for W.B.-	Visva Bharati
41	Trends in Productivity in Important Crops.	Visva Bharati
42	Impact of Aquaculture on Agriculture Production, Rural Employment and Environment -A Study in A.P. (for Odisha- Completed during	Waltair
43	Estimation of Total Production of Broiler Meat and its Costing in Andhra Pradesh - (Suggested by Deptt. of AH&D – Coordinated	Waltair
44	An Evaluation Study of Prime Minister's Rehabilitation Package for Farmers in Suicide Prone Districts of Andhra Pradesh-----	Waltair
45	for ADRT , Bangalore, Study on Determinants of stagnation in productivity of important crops. (Allotted during 2008-09). -	Waltair
46	Impact of emerging marketing channels in Agricultural Marketing – Benefit to producer – seller & Marketing Costs and Margins of Agricultural Commodities of A.P., Cord. By – IEG	Waltair

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1	Capacity Building for Improving Trade Competitiveness and Price Realization of Indian Agriculture.	CMA, Ahmadabad
2	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration of Karnataka	ADRT, Bangalore
3	Impact Study of the National Horticulture Mission (NHM) Scheme in Karnataka	ADRT, Bangalore
4	State Budgetary Resources and Agriculture Development (Consolidated Report).	ADRT, Bangalore
5	Impact of Macro Management of Agriculture Scheme. (Consolidated Report)	ADRT, Bangalore

(Contd)

6	Role of Climate Change & Agricultural Performance. Proposed by-IEG , Delhi	IEG, Delhi
7	Possibilities and Constraints increasing the production of pulses in India; and the Impact of National Food Security Mission on Pulses	IEG, Delhi
8	Impact of emerging marketing channels in Agricultural Marketing – Benefit to producer – seller & Marketing Costs and Margins of Agricultural Commodities.	IEG, Delhi
9	Market Access and Constraints in Marketing of Goats and Their Products (Consolidated)	Allahabad
10	Possibilities and Constraints for increasing the Production of Pulses in India and Impact of National Food Security Mission on Pulses in	Allahabad
11	Impact of emerging marketing channels in Agricultural Marketing – Benefit to producer – seller & Marketing Costs and Margins of Agricultural Commodities.	Allahabad
12	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration, at Kerala .	Chennai
13	Possibilities and Constraints for increasing the Production of Pulses in India and Impact of National Food Security Mission on Pulses in	Delhi
14	Impact Study of the National Horticulture Mission (NHM) Scheme.	Delhi
15	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration,	Delhi
16	Economics of fodder cultivation & its processing and marketing.	Jabalpur
17	Potential & prospects of Rabi cultivation in Assam.	Jorhat
18	Impact of emerging marketing channels in Agricultural Marketing – Benefit to producer – seller & Marketing Costs and Margins of Agricultural Commodities in Assam.	Jorhat
19	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration in Assam,	Jorhat
20	Economics of fodder cultivation & its processing and marketing in Punjab.	Ludhiana
21	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration of in Punjab.	Ludhiana
22	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration, with all India coverage in Rajasthan and Gujarat	Vallabh Vidyanagar
23	Impact Study of the National Horticulture Mission (NHM) Scheme in Rajasthan	Vallabh Vidyanagar
24	Mid-Term Evaluation Studies of National Watershed Development for Rain fed Areas during Tenth Plan	Vallabh Vidyanagar
25	Study report on Evaluation Studies of National Watershed Development for Rainfed Areas during Tenth Plan.	Vallabh Vidyanagar
26	Economics of production processing and marketing of fodder crops in Gujarat.	Vallabh Vidyanagar
27	Impact and Constraints Evaluation of Organic Farming at Household Level.	Visva Bharati
28	Impact Study of the National Horticulture Mission (NHM) Scheme in W.B.	Visva Bharati
29	Impact of emerging marketing channels in Agricultural Marketing – Benefit to producer – seller & Marketing Costs and Margins of Agricultural Commodities in W.B.	Visva Bharati
30	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration in W.B.	Visva Bharati

(Contd)

31	Possibilities and Constraints for increasing the Production of Pulses in India and Impact of National Food Security Mission on Pulses in	Waltair
32	The Impact of Macro Management of Agriculture Scheme in A.P.	Waltair

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1	Economics of fodder cultivation & its processing and marketing in Karnataka	ADRT Bangalore
2	Hulling and Milling Ratio in major Paddy growing states-for Karnataka	ADRT Bangalore
3	Market Integration of Major Agricultural Markets in Karnataka	ADRT Bangalore
4	Hulling and Milling Ratio in major Paddy growing states-All India (Consolidated)	ADRT Bangalore
5	Impact of NREGA on age Rates, Food Security and Rural Urban Migration with All-India Coverage'(Consolidated)	ADRT Bangalore
6	Prospects of Crop Diversification in the States of Punjab & Haryana - (Suggested by CACP).	IEG, Delhi
7	Producers companies in India: Ownership, management structure, performances and impact on small producers.	IEG, Delhi
8	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration in U.P.	Allahabad
9	End-term Evaluation Study/Appraisal in respect of the Implementation of the Bringing Green Revolution to Eastern India (BGREI) Program	Allahabad
10	Spread of new varieties of hybrid rice and their impact on the overall production and productivity in U.P.	Allahabad
11	Problems and Prospects of Katarni Paddy Production in Bihar.	Bhagalpur
12	Impact Study of the National Horticulture Mission (NHM) Scheme in Bihar	Bhagalpur
13	End-term Evaluation Study/Appraisal in respect of the Implementation of the Bringing Green Revolution to Eastern India (BGREI)Program	Bhagalpur
14	Impact Study of the National Horticulture Mission (NHM) Scheme in Tamil Nadu	Chennai
15	Impact of emerging marketing channels in Agricultural Marketing – Benefit to producer in Haryana	IEG, Delhi
16	End-term Evaluation Study/Appraisal in respect of the Implementation of the Bringing Green Revolution to Eastern India (BGREI)Program	Jabalpur
17	Possibilities and Constraints in increasing the production of pulses in India; and the Impact of National Food Security Mission on Pulses	Jabalpur
18	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration in M.P and Chhattisgarh	Jabalpur
19	Impact study of soil testing analysis in the states of Madhya Pradesh	Jabalpur
20	(1) Hulling and Milling Ratio in major Paddy M.P. (2) Hulling and Milling Ratio for Paddy in Chhattisgarh	Jabalpur
21	Spread of new varieties of hybrid rice and their impact on the overall production and productivity in M.P.	Jabalpur
22	End-term Evaluation Study/Appraisal in respect of the Implementation of the Bringing Green Revolution to Eastern India (BGREI) Program	Jorhat
23	Possibilities and Constraints in increasing the production of pulses in India; and the Impact of National Food Security Mission on Pulses.	Ludhiana
24	Hulling and Milling Ratio for Paddy in Punjab	Ludhiana

(Contd)

25	Impact of emerging marketing channels in Agricultural Marketing – Benefit to producer – seller & Marketing Costs and Margins of Agricultural Potato and Kinnow in Punjab	Ludhiana
26	Economics of fodder cultivation & its processing and marketing (Consolidated)	Ludhiana
27	Assessment of Pre and Post Harvest Losses in Wheat and Paddy Crops in Punjab	Ludhiana
28	Assessment of crop-wise marketable and marketed surplus of food grains and post harvest losses in Ludhiana	Ludhiana
29	marketed surplus of food grains and post harvest lossesin West Bengal.	Visva Bharati
30	End-term Evaluation Study/Appraisal in respect of the Implementation of the Bringing Green Revolution to Eastern India (BGREI)Program	Visva Bharati
31	Baseline Data on Area , Production and Production and Productivity of Horticulture Crops in Sikkim-Shantiniketan	Visva Bharati
32	Problem and Prospects of Oilseeds in West Bengal -Shantiniketan	Visva Bharati
33	Effect of Farm Mechanization on Agricultural Growth and Comparative Economics of Labour and Machinery	Visva Bharati
34	Spread of new Varieties of Hybrid Rice and their Impact on the Overall Production and Productivity in W.B.	Visva Bharati
35	Impact of NREGA on wage rates, cost of production, food Security and Rural Urban Migration in A.P.	Vishakhapatnam
36	Impact Study of the National Horticulture Mission (NHM) Scheme in A.P	Vishakhapatnam
37	End-term Evaluation Study/Appraisal in respect of the Implementation of the Bringing Green Revolution to Eastern India (BGREI) Program	Vishakhapatnam

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Appendix-I

Explanatory Note

Advance Estimates

The estimates of area, production and yield rates for 2012-13 are "advance estimates" as on 22-07-2013 and are based on deliberations held in weekly inter-disciplinary meetings of Crop Weather Watch Group, availability of water in important reservoirs in the country, availability/supply of important inputs including credit to farmers community, feed back received from states etc. These estimates are "advance" in the sense that these have been prepared in advance of availability of results of CCE (Crop Cutting Experiments) and are subject to revision as more precise information flows from states to DES.

Yield

Yield rate is defined as production per unit of area. However, yield rates of various crops given in this publication may not exactly tally with the ratio of production to the corresponding area because figures of area and production of various crops have been generally rounded off in ten thousands.

Principal Crops

Principal Crops as referred to in this publication include only those crops which are covered for preparation of index numbers. The details of these crops are given in Appendix II.

Estimation Procedure for Non-Availability of Data for 2012-13

The index numbers of area, production and yield rate for 2012-13 (from where growth rates have been derived) are based on advance estimates of principal crops as on 22-07-2013. However, there are a number of 'non-forecast' crops such as plantation crops, cardamom and spices for which no advance estimates for 2012-13 (or for that matter any year) are prepared. In such cases, the estimates of area and production for the previous years are repeated for the purpose of index numbers.

Nine Oilseeds

Wherever "Nine oilseeds" is mentioned in this publication, it includes Castor seed, Groundnut, Linseed, Nigerseed, Safflower, Sesamum, Soyabean, Sunflower and Rapeseed & Mustard.

Total Oilseeds

Total oilseeds include cottonseed and coconut besides nine oilseeds mentioned in the above paragraph.

Net Availability of Foodgrains

The Net availability of foodgrains is defined as, where

NAF = GP – SFW - e + i + s

NAF = Net availability of Foodgrains
GP = Gross Production of Foodgrains
SFW = Seed, feed and wastages of Foodgrains
e = Exports of Foodgrains
i = Imports of Foodgrains
s = Change in Stocks of Foodgrains

To work out per capita net availability of foodgrains in terms of kg. per year, NAF is divided by the estimated population for a particular year. When this is further divided by the number of days in a year i.e. 365 days, it gives net availability of foodgrains per day.

Appendix-II

Methodology of Index Numbers of Area, Production and Yield

Base Year

The Directorate of Economics and Statistics (DES) had adopted Triennium Ending (T.E.) 1981-82 as base year for the purpose of Index Numbers of Area, Production and Yield in Agriculture until 1999-2000. In 2000-2001, it was decided to adopt T.E. 1993-94 as a way of updating the base to a recent year and keep it in harmony with the other series of indices such as Index of Industrial Production, Wholesale Price Index and the series of National Accounts Statistics. Since area and production in agriculture can fluctuate a great deal from year to year, the average of area/ production over the TE 1993-94 was taken as the base year.

It was observed that the base year 1993-94 currently in use for construction of index numbers of Area, Production and Yield of crops has become outdated and stressed on the need for updating of the base year at regular intervals preferably in consonance with the base year revisions of other important indices.

As the period 2005-06 to 2007-08 remained normal from agriculture point of view and the price data available with CSO was for the year 2006-07 which could be used as mid period price for assessment of contribution in value terms for preparation of weighting diagram, it has been considered appropriate to take more recent base, i.e., (TE 2007-08 = 100) as the base for agricultural indices.

Weighting Diagram

The weight of a commodity for the production index is taken as the average production of the commodity in the TE 2007-08 and the national average price of the commodity during 2006-07 as obtained from the National Accounts Statistics. This has been done to fix the base production at its average level by eliminating the cyclical variation and to evaluate the production with the same price for all states in view of wide variations observed in the state prices.

Methodology

Let a_{ij} - the area under i^{th} crop in the j^{th} year.

a_{io} - the area under i^{th} crop in base year period.
p_{ij} - production of i^{th} crop in the j^{th} year.
p_{io} - production of i^{th} crop in base year period.
w_i - weight of i^{th} crop.

For the the year j, individual crop indices are calculated as below :

(a) Index number of area $= \frac{a_{ij}}{a_{io}} \times 100 = IA_{ij}$

I. Index number of production $= \frac{p_{ij}}{P_{io}} \times 100 = IP_{ij}$

(c) Index number of yield $= \frac{IP_{ij}}{IA_{ij}} \times 100$

For any sub-group G of commodities, the indices for the year j are calculated as below:

a) Index number of area $= \frac{\sum_{i \in G} wi\ IA_{ij}}{\sum_{i \in G} wi}$

b) Index number of production $= \frac{\sum_{i \in G} wi\ IP_{ij}}{\sum_{i \in G} wi}$

c) Index number of yield $= \frac{\text{Index number of production} \times 100}{\text{Index number of area}}$

Appendix-III

Glossary of English, Botanical and Hindi Names of Important Crops

Crop/ Group of Crops	English	Botanical	Hindi
(1)	(2)	(3)	(4)
Cereals	Bara(Bulrush or spiked millet)	Pennisetum Typhoides	Bajra
	Barley	Hordeum vulgare	Jau
	Barnyard millet	Echinochloa frumentacea	Kutki
	Cholam(Great Millet)	Sorghum bicolor	Jowar
	Common Millet	Panicum milliaceum	Cheena
	Little Millet	Penicum milliare	Sawan
	Italian foxtail Millet	Setarisiaitalica	Kangani
	Kodo Millet	Paspalum scrobiculatum	Koden
	Maize or Indian corn	Zea mays	Makka
	Oat	Avena sativa	Jaie
	Ragi	Eleusine coracana	Mundua
	Paddy (Rice)	Oryza sativa	Dhan (Chawal)
	Wheat	Triticum acstivum	Gehun
Pulses and Beans	Black gram	Vignamungo	Urad
	Chickpea (Bengal gram)	Cicer arietinum	Chana
	Chicking vetch	Lathyrus sativus	Khesari
	Cluster Bean	Cyamopiss tetragonoloba	Guar
	Cowpea	Vigna unguiculate	Lobia
	Green Gram	Vigna radiata	Mung
	Horsegram	Dilichos biflorus	Kulthi
	Kidney bean	Vigna aconitifolia	Moth
	Lentil	Lens culimaris	Masur
	Peas	Pisum sativum vararvense	Matar
	Red gram (Pigion pea)	Cajanus cajan	Tur,Arhar
	Soyabean	Glucine max	Soyabean
Sugar	Sugarcane	Saccharum Officinarum	Ganna
Fruits	Apple	Malus sylvespris	Seb
	Apricot	Prunus armeniaca	Khoobani
	Cashewnut	Anaardium occidentale	Kaju
	Fig	Ficus carica	Anjeer
	Grape	Vitis vinifera	Angur
	Guvava	Psidium guajava	Amrood
	Jackfruit	Artocarpur heterophyllus	Katahal
	Lemon	Citrus Lemon	Nimbu
	Lime	Citrus Urantifolia	Bara Nimbu
	Litchi	Litchi chinensis	Litchi
	Mango	Magnifera indica	Aam
	Orange Mandar	Citrus reticulata	Santara, Narangi
	Papaya	Carica papaya	Papeeta
	Pear	Pyrus communis	Naspati
	Pineapple	Ananas comosus	Ananas
	Banana	Musa paradisiaca	Kela
	Pomegranate	Punica granatum	Anaar
	Sweet Orange	Citrus sincensis	Malta, Mosambi

Crop/ Group of Crops	English	Botanical	Hindi
(1)	(2)	(3)	(4)
Vegetables	Ash gourd	Benincasa hispida	Petha
	Beet	Beta vulgaris	Chukandar
	Bitter gourd	Momordica charantia	Karela
	Bottle gourd	Lagenaria siceraria	Lauki
	Brinjal	Lolanum melongena	Baingan
	Cabbage	Brassica oleracca var, Capitata	Band gobi
	Carrot	Daucus carota	Gajar
	Cauliflower	Brassica oleracca var Botrytis	Phul gobi
	Cowpea	Vigna unguiculate	Lobia
	Cucumber	Cucumis satius	Kheera
	French bean	Phaseolus vulgaris	Faras bean
	Indian flat bean or sem	Dolichos lablab	Sem
	Kaol Khol	Brassica oleracea var, Gongylodes	Ganth gobi
	Lady's finger	Abelmoschus esculentus	Bhindi
	Little gourd	Cuccinia cordifolia	Kundur
	Musk melon	Cucumis melo	Kharbooza
	Onion	Allium cepa	Piyaz
	Pointed gourd	Trichosanthes dioica	Parwal, Potal
	Potato	Solanum tuberosum	Aaloo
	Pumpkin	Curcurbita moschata	Sitaphal, Lal Kaddu, Kumbhra
	Radish	Raphanus satius	Muli
	Round gourd of India	Citrullus vulgaris var, fistulosus	Tinda
	Snap melon	Cucumis melovvar, momordica	Phoot
	Snake gourd	Trichosanthes anguina	Chachinda
	Tomato	Lycopersicon escen lentum	Tamatar
	Turnip	Brassica rapa	Shalgam
	Water melon	Cirtrullus vulgaris	Tarbooz
Drugs and Narcotics			
	Betal Leave		Paan
	Betalnut(arecanut)	Areca catechu	Supari
	Indian hemp	Cannabis sativa	Bhang
	Opium	Papaver somniferum	Afeem
	Tobacco	Nicotiana tabacum and Nicotiana rustica	Tambaku
Condiments and Spices			
	Black pepper	Piper nigrum	Kalimirch
	Cardamom, Cardamum (lesser)	Elettaria cardamomum	Chhoti Ilaichi
	Chillies	Capsicum annuum	Lalmirch

Appendix-IV

Crop Calendar of Major Crops

States/Uts	Period	Kharif Paddy	Rabi Paddy	Summer Paddy	Kharif Bajra	Summer Bajra	Rabi Wheat
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh	Sowing	May-June	Nov-Dec	March-April	Jun(B)-Jul(M)		
	Harvesting	Nov-Dec	May-June	July-Aug.	Aug(B)-Oct(B)		
Assam	Sowing	Feb-March	June-July	Nov-Dec			Nov(B)-Dec(M)
	Harvesting	June-July	Nov-Dec	May-June			Mar(B)-Apr(E)
Bihar	Sowing	Jun-Sept.	Oct-Nov	Feb.-March			Nov(M)-Dec(E)
	Harvesting		April-May	July-Aug.			Mar(M)-Apr(E)
Goa	Sowing						
	Harvesting						
Gujarat	Sowing	June-July			Jun(B)-Jul(E)	Feb(B)-Feb(E)	Oct(B)-Nov(E)
	Harvesting	Oct-Nov			Sep(B)-Nov(E)	May(B)-May(E)	Feb(B)-Mar(E)
Haryana	Sowing	June-July			Jun(M)-Jul(B)		Oct(E)-Dec(B)
	Harvesting	Sept-Oct.			Oct(M)-Nov(M)		Apr(M)-Apr(E)
Himachal Pradesh	Sowing	May-June					Oct(B)-Nov(E)
	Harvesting	October					Apr(M)-Jun(E)
Jammu & Kashmir	Sowing	April-May					Oct(B)-Dec(E)
	Harvesting	Sept-Oct.					May(B)-May(E)
Karnataka	Sowing	May-June	Sept-Oct.	Jan.-Feb.	Jul(B)-Sep(E)	Jan(B)-Feb(E)	Oct(B)-Dec(E)
	Harvesting	Sept-Oct.	Jan.-Feb	May-June	Oct(B)-Nov(E)	Apr(B)-May(E)	Jan(B)-Feb(E)
Kerala	Sowing	April-May	Sept-Oct.	Dec-Jan.			
	Harvesting	Sept-Oct.	Dec-Jan.	March-April			

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Madhya Pradesh	Sowing	June-July			Jun(M)-Jul(E)		Oct(M)-Dec(E)
	Harvesting	Oct-Nov			Sep(E)-Dec(M)		Feb(M)Apr(E)
Maharashtra	Sowing	June-July			Jun(B)-Jul(E)		Oct(B)-Dec(E)
	Harvesting	Oct-Nov			Sep(B)-Oct(E)		Feb(B)-Mar(E)
Odisha	Sowing	May-June	June-July	Dec-Jan.	Jun-Jul		Oct-Nov
	Harvesting	Sept-Oct.	Nov-Dec	April-May	Sep-Oct		Mar-Apr
Punjab	Sowing	May-Oct.					Oct(B)-Nov(E)
	Harvesting						Apr(B)-May(E)
Rajasthan	Sowing	June-July			Jun(B)-Jul(E)		Nov(B)-Dec(E)
	Harvesting	Oct-Nov			Sep(B)-Oct(E)		Mar(B)-May(E)
Uttar Pradesh	Sowing	June-July	Nov-Dec		Jun(B)-Jul(E)		Oct(B)-Jan(M)
	Harvesting	Oct-Nov	April-May		Oct(B)-Nov(M)		Apr(B)-Apr(M)
West Bengal	Sowing						Nov(B)-Dec(E)
	Harvesting						Mar(B)-Apr(E)
All India	Sowing	May-Aug	Dec-Jan.		Jun-Jul	Jan-Feb	Oct-Dec
	Harvesting	Sep-Jan	April-May		Sep-Nov	Apr-May	Feb-Jun

States	Period	Early kharif Arhar/Tur	Kharif Arhar/Tur
(1)	(2)	(3)	(4)
Andhra Pradesh	Sowing	June (B)-June (M)	Jun (M)- July (M)
	Harvesting	Nov(M).- Dec (E).	Dec (M)-Jan.(M)
Karnataka	Sowing	June (B)- June(M)	Jun (M)-July (M)
	Harvesting	Nov(B).- Dec (M).	Dec. (M) Jan. (M)
Maharashtra	Sowing	June (B)-June (M)	Jun (M)-July (M)
	Harvesting	Dec(M).-Jan (M).	Dec. (M)- Feb. (M)
Rajasthan	Sowing	June (B)-June (M)	Jun (M)-July (M)
	Harvesting	Nov (M).-Dec (M).	Jan.(M)-Feb. (M)
Uttar Pradesh	Sowing	June (B)-JuneM)	July (B)-July (E)
	Harvesting	Dec (M)- Dec. (E).	March (M)-April (E)
Tamil Nadu	Sowing	June (B)-JuneM)	Jun (M)-July (M)
	Harvesting	Nov (M). –Dec (M)	Jan (M).- Feb.. (M)
Gujarat	Sowing	June (B)-June (M)	Jun (M)- July (M)
	Harvesting	Nov (M).-Dec (M) .	Dec. (M)-. Jan.(M)
Bihar	Sowing	-	July (B)- July (E)
	Harvesting	-	March (M)- April (E)
Madhya Pradesh	Sowing	June (B)-June (M)	Jun (M)-July (M)
	Harvesting	June (B)-June (M)	Jan (M)- Feb. (M)
Uttaranchal	Sowing	June (B)-June (M)	-
	Harvesting	Nov.(M) –Dec (M).	-
Odisha	Sowing	June (B)-June (M)	Jun (M)- July (M)
	Harvesting	Nov (M). – Dec	Jan(M)-Feb (M)
Haryana	Sowing	June (B)-June (M)	-
	Harvesting	Nov (M).- Dec (M).	-
Punjab	Sowing	June (B)-June (M)	-
	Harvesting	Nov. (M)- Dec (M).	-
Jharkhand	Sowing	June (B)-June (M)	July (B)- July (E)
	Harvesting	Nov (M).- Dec (M).	March (M)- April (E)
Chattisgadh	Sowing	June (B)-June (M)	Jun (M)- July (M)
	Harvesting	Nov (M).-Dec (M).	Jan M)- Feb. (M)
Tripura	Sowing	June (B)-June (M)	Jun (M)-July(M)
	Harvesting	Nov (B).-Dec (M).	Dec (M)-Jan. (M)
Nagaland	Sowing	June (B)-June (M)	Jun (M)- July (M)
	Harvesting	Nov (M).- Dec (M).	Dec (M)-Jan. (M)
All India	Sowing	June (B)-June (M)	June (B)-July (E)
	Harvesting	Nov. (M)- Jan (M),	Dec (M).- April (E)

(Contd.)

States/Uts	Period	Kharif Mungbean/ Urdbean	Rabi Mungbean/ Urdbean	Spring/Summer Mungbean/ Urdbean	Horsegram Kharif	Chickpea rabi
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Andhra Pradesh	Sowing	Jun(M) –Jul(E)	Oct(B)-Nov(B)	Jan(B).-Feb(B)		
	Harvesting	Sept(M) –Oct(M)	Jan(B)-Feb(B)	Mar(B)-April(M)		
Assam	Sowing	July(B) – Aug(E)	Aug(B)-Sep(M).	Feb(E)-Mar(M)		Oct. (M) – Nov. (M)
	Harvesting	Sep(M)-Oct(E)	Nov(B) –Dec(M)	May(B)-May(M)		March (B) – March (E)
Bihar	Sowing	July(B) – Aug(E)		Feb(E)-April(B)	Aug (M)-Aug(E)	Oct. (M) – Nov. (M)
	Harvesting	Sep(M)-Oct(E)		May(B)-June(M)	Oct(E)-Nov(B)	March (B) – March (E)
Chattishgarh	Sowing	Jun-Jul				Oct. (B) – Oct. (E)
	Harvesting	Sep-Sep				Feb. (E) – March (E)
Gujarat	Sowing	July(B) – Aug(E)				Oct. (B) – Nov. (M)
	Harvesting	Sep(M)-Oct(E)				Feb. (M) – March (E)
Haryana	Sowing	July(B) – Aug(E)		Feb(E)-April(B)		Oct. (M) – Nov. (E)
	Harvesting	Sep(M)-Oct(E)		May(B)-June(M)		March (M) – April (B)
Jharkhand	Sowing	Jul(B)-Aug(E)		Feb(E)-April(B)		
	Harvesting	Sep(M)-Oct(E)		May(B)-June(M)		
Karnataka	Sowing	Jun(M) –Jul(E)	Oct(B)-Nov(B)	Jan(B).-Feb(B)	Aug (E)	Sept. (E) – Oct. (E)
	Harvesting	Sept(M) –Oct(M)	Jan(B)-Feb(B)	Mar(B)-April(M)	Oct(M)-Nov(B)	Jan. (M) – Feb. (E)
Kerala	Sowing	Jun(M) –Jul(E)		Jan(B).-Feb(B)		
	Harvesting	Sept(M) –Oct(M)		Mar(B)-April(M)		
Madhya Pradesh	Sowing	Jun(M) –Jul(E)			August (E)	Oct. (B) – Nov. (B)
	Harvesting	Sept(M) –Oct(M)			Oct (E)	Feb. (M) – March (E)
Maharashtra	Sowing	Jun(M) –Jul(E)			Jul(M)	Sept (E) – Oct. (E)
	Harvesting	Sept(M) –Oct(M)			Oct(M)	Feb. (M) – March (E)

(Contd.)

States/Uts	Period	Kharif Mungbean/ Urdbean	Rabi Mungbean/ Urdbean	Spring/Summer Mungbean/ Urdbean	Horsegram Kharif	Chickpea rabi
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Odisha	Sowing Harvesting	Jun(M) –Jul(E) Sept(M) –Oct(M)	Oct(B)-Nov(B) Jan(B)-Feb(B)	Jan(B).-Feb(B) Mar(B)-April(M)		
Punjab	Sowing Harvesting	July(B) – Aug(E) Sep(M)-Oct(E)		Feb(E)-Mar(M) May(B)-May(M)		Oct. (M) – Nov. (E) March (M) - April (E)
Rajasthan	Sowing Harvesting	July(B) – Aug(E) Sep(M)-Oct(E)			Jul (M) Oct (M)	
Tripura	Sowing Harvesting	July(B) – Aug(E) Sep(M)-Oct(E)		Feb(E)-April(B) May(B)-June(M)		
Tamilnadu	Sowing Harvesting	Jun(M) –Jul(E) Sept(M) –Oct(M)	Oct(B)-Nov(B) Jan(B)-Feb(B)	Feb(E)-April(B) May(B)-June(M)	Oct(E) Feb(B)	
Uttar Pradesh	Sowing Harvesting	July(B) – Aug(E) Sep(M)-Oct(E)		Feb(E)-April(B) May(B)-June(M)		Oct. (M) – Nov. (E) March (M) - April (E)
W.Bengal	Sowing Harvesting	July(B) – Aug(E) Sep(M)-Oct(E)		Feb(E)-April(B) May(B)-June(M)		Oct. (M) – Nov. (E) March (B) - March (E)
Himachal Pradesh	Sowing Harvesting	July(B) – Aug(E) Sep(M)-Oct(E) July(B) – Aug(E) Sep(M)-Oct(E)	-		Jun(M)-Jul(E) Sep(E)-Oct(M)	

(Contd.)

State	Period	Kharif-Soybean	Niger(Khaif)	Niger(Late Kharif)
(1)	(2)	(3)	(4)	(5)
Madhya Pradesh	Sowing	June(M)- July(M)	June(B) – July(E)	Aug(B)- Sept(B)
	Harvesting	Sept(E)- October(B)	Oct(B)- Nov(M)	Nov(B)-Dec(B)
Maharashtra	Sowing	June(M)- July(M)	June(B) – July(E)	Aug(B)- Sept(B)
	Harvesting	Sept(E)- Oct(B)	Oct(B)- Nov(M)	Nov(B)-Dec(B)
Rajasthan	Sowing	June(E)- July(M)		
	Harvesting	Sept(E)- October(B)		
Karnataka	Sowing	June(M) – July(B)	June(B) – July(E)	Aug(B)- Sept(B)
	Harvesting	Sept(E)- Oct(B)	Oct(B)- Nov(M)	Nov(B)-Dec(B)
Andhra Pradesh	Sowing	June(M)- July(M)	June(B) – July(E)	Aug(B)- Sept(B)
	Harvesting	Sept(E)- Oct(B)	Oct(B)- Nov(M)	Nov(B)-Dec(B)
Chhatisgarh	Sowing	June(M)- July(M)		
	Harvesting	Sept(E)- October(B)		
Uttar Pradesh	Sowing	June(E)- July(M)		
	Harvesting	Sept(E)- October(B)		
Manipur	Sowing	June- July		
	Harvesting	Sept(E)- October(B)		
Meghalaya	Sowing	June - July		
	Harvesting	Sept(E)- October(B)		
West Bengal	Sowing	June - July		
	Harvesting		Sept(E)- October(B)	
Odisha	Sowing		June(B) – July(E)	Aug(B)- Sept(B)
	Harvesting		Oct(B)- Nov(M)	Nov(B)-Dec(B)
Bihar/ Jharkhand	Sowing		June(B) – July(E)	Aug(B)- Sept(B)
	Harvesting		Oct(B)- Nov(M)	Nov(B)-Dec(B)
Gujarat	Sowing		June(B) – July(E)	Aug(B)- Sept(B)
	Harvesting		Oct(B)- Nov(M)	Nov(B)-Dec(B)

(Contd.)

States/Uts	Period	Rabi Gram	Rabi Masur	Kharif Pulses/Lentil	Rabi Pulses/Lentil	Rabi Pea
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Assam	Sowing				Oct(M) – Nov(M)	Oct(M) – Nov(M)
	Harvesting				Mar(M)-Apr(M)	Mar(M)-April(M)
Bihar	Sowing			Jun(M)-Ju;l(B)	Oct(M) – Nov(M)	Oct(M) – Nov(M)
	Harvesting			Nov(B)-Dec(E)	Mar(M)-Apr(M)	Mar(M)-April(M)
Chattisgarh					Oct(M) – Nov(M)	Oct(M) – Nov(M)
					Mar(M)-Apr(M)	Mar(M)-Apr(M)
Goa	Sowing			Aug(B)-Sep(E)	Dec(B)-Jan(E)	
	Harvesting			Nov(B)-Dec(E)	Mar(B)-Mayu(E)	
Jharkhand	Sowing				Oct(M) – Nov(M)	Oct(M) – Nov(M)
	Harvesting				Mar(M)-Apr(M)	Mar(M)-Apr(M)
Rajasthan	Sowing				Oct(E) – Nov(M)	Oct(E) – Nov(M)
	Harvesting				Mar(B)-Apr(M)	Mar(B)-Apr(M)
Tripura	Sowing				Oct(E) – Nov(M)	Oct(E) – Nov(M)
	Harvesting				Mar(B)-Apr(M)	Mar(B)-Apr(M)
Gujarat	Sowing	Oct(B)-Nov(E)			Oct(M) – Nov(M)	Oct(M) – Nov(M)
	Harvesting	Feb(B)-Mar(E)			Mar(M)-Apr(M)	Mar(M)-Apr(M)
Haryana	Sowing	Oct(B)-Oct(M)			Oct(M) – Nov(M)	Oct(M) – Nov(M)
	Harvesting	Mar(M)-Mar(E)			Mar(M)-Apr(M)	Mar(M)-Apr(M)
Karnataka	Sowing	Oct(B)-Nov(E)				
	Harvesting	Jan(B)-Mar(E)				
Madhya Pradesh	Sowing	Oct(B)-Dec(B)	Sep(M)-Nov(E)		Oct(E) – Nov(M)	Oct(E) – Nov(M)
	Harvesting	Feb(B)-Apr(B)	Feb(M)-Apr(B)		Mar(B)-Apr(M)	Mar(B)-Apr(M)

(Contd.)

States/Uts	Period	Rabi Gram	Rabi Masur	Kharif Pulses/Lentil	Rabi Pulses/Lentil	Rabi Pea
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Maharashtra	Sowing	Sep(B)-Oct)E)				
	Harvesting	Feb(B)-Mar(E)				
Manipur	Sowing	Sep-Oct				
	Harvesting	Mar-Apr				
Meghalaya	Sowing	Sep(B)-Oct(E)		Sep(B)-Oct(E)		
	Harvesting	Dec(B)-Jan(E)		Feb(B)-Mar(E)		
Punjab	Sowing			Jun(B)-Jul(E)	Oct. – Nov.	Oct. – Nov.
	Harvesting				March-April	March-April
Uttar Pradesh	Sowing	Oct(B)-Nov(E)	Oct(B)-Nov(E)		Oct(M) – Nov(M)	Oct(M) – Nov(M)
	Harvesting	Mar(B)-Apr(E)	Mar(B)-Mar(E)		Mar(M)-Apr(M)	Mar(M)-Apr(M)
West Bengal	Sowing	Nov(M)-Dec(B)		Nov(B)-Nov(E)	Oct(M) – Nov(M)	Oct(M) – Nov(M)
	Harvesting	Mar(B)-Mar(E)		Feb(B)-Mar(E)	Mar(M)-Apr(M)	Mar(M)-Apr(M)

(Contd.)

States	Period	Groundnut		
		Kharif	*Rabi*	Summer/ Spring
(1)	(2)	(3)	(4)	(5)
Andhra Pradesh	Sowing	Jun(B)-july(E)	Nov(M)-Jan(E)	
	Harvesting	Sep(M)-Nov(M)	Feb(E)-May(B)	
Assam	Sowing		JulyB)-Aug(E)	
	Harvesting		Nov(B)-Dec(E)	
Bihar	Sowing			
	Harvesting			
Chattisgarh	Sowing			
	Harvesting			
Gujarat	Sowing	Jun(B)-July(E)		Jan(B)-Feb(E)
	Harvesting	Sep(B)-Nov(E)		Apr(B)May(E)
Haryana	Sowing			
	Harvesting			
J&K	Sowing			
	Harvesting			
Jharakhand	Sowing			
	Harvesting			
Karnataka	Sowing	Jun(B)-jul(E)	Nov(M)-Jan(E)	Dec(B)-Jan(E)
	Harvesting	Sep(B) – Oct(E)	Feb(E)-May(B)	Mar(B)-Apr(E)
MadhyaPradesh	Sowing	Jun(M)-july(E)		
	Harvesting	Sep(M)-Oct(E)		
Maharashtra	Sowing	Jun(E)-Jul(E)		Jan(B)-Feb(E)
	Harvesting	Oct(B)-Nov(B)		Apr(B)May(E)
Odisha	Sowing			
	Harvesting			
Punjab	Sowing			
	Harvesting			
Rajastan	Sowing	Jun(B)-jul(E)		
	Harvesting	Oct(B)-Nov(E)		
Tamil Nadu	Sowing			
	Harvesting			
Uttar Pradesh	Sowing	Jul(B)-jul(E)		
	Harvesting	Oct(B)-Nov(B)		
West Bengal	Sowing	Jun(E)-jul(B)	Oct(E)-Nov(B)	Feb(B)-Mar(E)
	Harvesting	Sep(E)-Oct(B)	Jan(E)-March(B)	May(B)-Jun(E)

(Contd.)

States	Period	Rabi linseed
(1)	(2)	(3)
Assam	Sowing	Oct (B) - Nov (B)
	Harvesting	Mar (B) – Apr (E)
Andhra Pradesh	Sowing	Oct (B)- Oct (E)
	Harvesting	Feb (E)-Mar (E)
Bihar	Sowing	Oct (B)- Nov (B)
	Harvesting	Mar (B)- Apr (E)
M. P.	Sowing	Oct (B)- Nov (M)
	Harvesting	Mar (B)-Mar (E)
Chhatisgarh	Sowing	Oct (B)- Nov (M)
	Harvesting	Mar (B)-Mar (E)
Maharashtra	Sowing	Oct (B)-Oct (E)
	Harvesting	Mar (B)-Mar (E)
Uttar Pradesh	Sowing	Oct (B) - Nov (B)
	Harvesting	Mar (B) – Apr (E)
Orrisa	Sowing	Oct (B)-Oct (E)
	Harvesting	Mar (B)-Mar (E)
Jharkhand	Sowing	Oct (B) - Nov (B)
	Harvesting	Mar (B) – Apr (E)
Karnatka	Sowing	Oct (B)-Oct (E)
	Harvesting	Feb (B)-Mar M)
Nagaland	Sowing	Oct (B)- Nov (B)
	Harvesting	Mar (B) – Apr (E)
West Bengal	Sowing	Oct (B) - Nov (B)
	Harvesting	Mar (B) – Apr (M)
Rajasthan	Sowing	Oct (B)-Oct (E)
	Harvesting	Mar (B)-Mar(E)
Himachal Pradesh	Sowing	Oct (B)- Nov(B)
	Harvesting	Apr (E) –May (M)
J & K	Sowing	Oct (B)- Nov (B)
	Harvesting	Apr (E) – May (M)
Punjab	Sowing	Oct (M) –Nov (M)
	Harvesting	Mar (E) – Apr (E)

(Contd.)

States	Period	Sesame Kharif	Sesame Pre Rabi	Sesame Rabi	Sesame Summer
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	Sowing	June(B)-July(E)	Aug(B)- Sept(M)		Jan(M)- Feb(E)
	Harvesting	Oct(M)- Nov(M)	Dec(E)- Jan(M)		Apr(M)-May(E)
Karnataka	Sowing	June(B)-July(E)			
	Harvesting	Oct(M)- Nov(M)			
Kerala	Sowing	June(B)-July(E)			Jan(M)-Feb(E)
	Harvesting	Oct(M)- Nov(M)			Apr(M)-May(E)
Madhya Pradesh	Sowing	June(B)-July(E)	Aug(B)- Sept(M)		
	Harvesting	Oct(M)- Nov(M)	Dec(E)- Jan(M)		
Maharashtra	Sowing	June(B)-July(E)	Aug(B)- Sept(M)		Jan(M)- Feb(E)
	Harvesting	Oct(M)- Nov(M)	Dec(E)- Jan(M)		Apr(M)-May(E)
Odisha	Sowing	June(B)-July(E)		Oct(B)-Nov(M)	Jan(M)- Feb(E)
	Harvesting	Oct(M)- Nov(M)		Feb(M)- Mar(E)	May(M)- June(M)
Rajasthan	Sowing	June(B)-July(E)			
	Harvesting	Oct(M)- Nov(M)			
Uttar Pradesh	Sowing	June(B)-July(E)			Feb.- March
	Harvesting	Oct(M)- Nov(M)			May(M)-Jun(M)
West Bengal	Sowing				Feb(M)-Mar(M)
	Harvesting				May(M)- June(M)
Gujarat	Sowing	June-July			Feb.- March
	Harvesting	Oct- Nov			May -June
Tamil Nadu	Sowing	June-July	Aug(B)- Sept(M)	Oct(B)-Nov(M)	Jan.- Feb
	Harvesting	Oct- Nov	Dec(E)- Jan(M)	Feb(M)- Mar(E)	May(M)- June(M)
All India	Sowing	May-July	Aug(B)- Sept(M)	Oct(B)-Nov(M)	Jan.- March
	Harvesting	Sep-Nov	Dec(E)- Jan(M)	Feb(M)- Mar(E)	May -June

(Contd.)

States	Period	Sunflower Kharif	Sunflower Rabi	Summer/ Spring	Castor Kharif	Safflower Rabi
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Andhra Pradesh	Sowing	Jun(B)-Aug(E)	Oct		Jun(B)-Jul(E)	October
	Harvesting	Sep - Nov	Jan		Oct-Dec	Feb
Assam	Sowing					
	Harvesting					
Bihar	Sowing					
	Harvesting					
Chattisgarh	Sowing					
	Harvesting					
Gujarat	Sowing				Jul-Aug	
	Harvesting				Jan-Feb	
Haryana	Sowing					
	Harvesting					
J&K	Sowing					
	Harvesting					
Jharakhand	Sowing					
	Harvesting					
Karnataka	Sowing	Jun(B)-Aug(E)	Oct	Dec-Jan	Jul-Aug	October
	Harvesting	Sep - Nov	Jan	Mar-Apr	Nov-Dec	Feb
Madhya Pradesh	Sowing					
	Harvesting					

(Contd.)

States	Period	Sunflower Kharif	Sunflower Rabi	Summer/ Spring	Castor Kharif	Safflower Rabi
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Maharashtra	Sowing	Jul(B)-Aug(E)	Oct			Sep(M)-Oct(M)
	Harvesting	Oct - Nov	Jan			Feb-Mar
Odisha	Sowing					
	Harvesting					
Punjab	Sowing			Feb		
	Harvesting			Apr-May		
Rajastan	Sowing				Jul-Aug	
	Harvesting				Jan-Feb	
Tamil Nadu	Sowing	Jun(B)-Aug(E)	Oct			
	Harvesting	Sep - Nov	Jan			
Uttar Pradesh	Sowing					
	Harvesting					
West Bengal	Sowing			Feb		
	Harvesting			Apr-May		
All India	Sowing	Jun-Aug	Oct	Feb	Jul-Aug	October
	Harvesting	Sep-Nov	Jan	Apr-May	Jan-Feb	Feb

(Contd.)

State	Rapeseed-Mustard	Sowing Time	Harvesting Time
(1)	(2)	(3)	(4)
Andhra Pradesh	Mustard/ Banarasi rai	Nov (L)- Dec (E)	Feb-March
Assam	Toria	Nov (L) - Dec (E)	Feb-March
Bihar	Mustard	Oct (L) - Nov (L)	Feb-March
	Toria	Sep (L)- Oct(E)	Jan-Feb
	Yellow Sarson	Oct (E)	Feb-March
Chhattisgarh	Mustard	Oct (E)- Nov(E)	March
	Toria	Sep (L)	Dec-Jan
Delhi	Mustard	Oct (L)- Nov(E)	Feb-March
	Toria	Sep (L)	Jan
	Taramira	Nov(E)	March
Gujarat	Mustard	Oct(L)	Feb-March
	Yellow Sarson	Oct (L)	Feb
Haryana	Mustard	Within Oct	Feb-March
	Toria	Sep (L)	Dec-Jan
	Taramira	Nov(E)	March
Himachal Pradesh	Mustard	Oct (L)- Nov (L)	March-April
	Brown Sarson	Within Oct	April
	Gobhi Sarson	Oct (L) - Nov (L)	April
J&K	Mustard	Oct(L)- Nov (E)	March-April
	Brown sarson	Within Oct	April-May
Jharkhand	Mustard	Oct (L)	March
	Toria	Oct (E)	Feb-March
	Yellow Sarson	Oct (E)	Feb-March
Karnataka	Mustard	Within Oct	Feb
Madhya Pradesh	Mustard	Within Oct	Feb-March
	Toria	Sep (L)	Dec-Jan
Manipur	Mustard	Within Nov	March
	Toria	Oct (E)	Feb-March
Maharashtra	Mustard	Oct (L)- Nov (E)	Feb-March
Odisha	Mustard	Oct (L) - Nov (L)	Feb-March
	Toria	Oct (E)	Feb
	Yellow Sarson	Oct (E)	Feb-March
Punjab	Mustard	Oct (L)- Nov (L)	March- April
	Toria	Sep (L)	Dec-Jan
	Taramira	Nov (E)	March
	Gobhi Sarson	Oct (L)- Nov (L)	March-April
	Karan rai	Oct (L)- Nov (L)	March-April
Rajasthan	Mustard	Sep (L) - Oct (L)	Feb-March
	Taramira	Oct (L)- Nov(E)	March
Uttaranchal	Mustard/ Karan rai	Oct (L)- Nov (L)	March
	Toria	Sep (L)	Dec-Jan
	Yellow Sarson	Oct (E)	March
Uttar Pradesh	Mustard	Within Oct	Feb-March
	Toria	Sep(L)	Dec-Jan
	Yellow Sarson	Within Oct	Feb-March
West Bengal	Mustard	Within Oct	Feb-March
	Toria	Oct (L)- Nov (E)	Feb
	Yellow Sarson	Oct (L)- Nov (E)	Feb-March

(Contd.)

States/Uts	Period	Kharif Cotton	Kharif Maize	Rabi Maize
(1)	(2)	(3)	(4)	(5)
Andhra Pradesh	Sowing	Jun(E)-Jul(E)	Jun(M)-Jul(M)	Oct(E)-Jan(M)
	Harvesting	Dec(E)-Mar(M)	Sep(M)-Oct(E)	Feb(E)-May(B)
Bihar	Sowing		Jun(M)-Jul(B)	Oct(M)-Nov(M)
	Harvesting		Nov(B)-Dec(E)	Feb(B)-Mar(B)
Gujarat	Sowing	May(B)-May(E)	Jun(B)-Jul(E)	
	Harvesting	Oct(B)-Apr(E)	Sep(B)-Nov(E)	
Haryana	Sowing	Apr(B)-Apr(M)	Jul(M)-Aug(B)	
	Harvesting	Oct(M)-Nov(M)	Oct(M)-OctE)	
Himachal Pradesh	Sowing		May(M)-Jun(E)	
	Harvesting		Sep(M)-Oct(M)	
Karnataka	Sowing		May(B)-Jun(E)	Sep(B)-Oct(E)
	Harvesting		Sep(B)-Oct(E)	Jan(B)-Mar(E)
Kerala	Sowing	Jun(B)-Octl(E)		
	Harvesting	Dec(B)-Mar(E)		
Madhya Pradesh	Sowing	Jun-Jul	Jun(M)-Jul(E)	
	Harvesting	Nov-Dec	Aug(M)-Dec(E)	
Maharashtra	Sowing	Jun-Jul	Jul(B)-Aug(E)	
	Harvesting	Nov-Dec	Oct(B)-Nov(E)	
Odisha	Sowing	Jun-Jul	Jun-Ju;	
	Harvesting	Nov-Dec	Sep-Oct	
Punjab	Sowing	Apr(B)-Mar(E)	MayB)-Jun(E)	
	Harvesting	Sep(B)-Oct(E)	Sep(B)-Oct(E)	
Rajasthan	Sowing	Apr(B)-May(E)	Jun(B)-Jul(E)	
	Harvesting	Nov(B)-Dec(E)	Oct(B)-Nov(E)	
Uttar Pradesh	Sowing	Apr(B)-Jun(E)	Jun(B)-Jul(E)	
	Harvesting	Sep(B)-Nov(E)	Sep(B)-Sep(E)	
West Bengal	Sowing	Oct(B)-Nov(E)	Mar(B)-May(E)	Nov(B)-Nov(E)
	Harvesting	Sep(B)-Sep(E)	Jun(B)-Aug(E)	Mar(B)-Mar(E)
All India	Sowing	Apr-Jul	Mar-Jul	Sep-Jan
	Harvesting	Sep-Dec	Sep-Dec	Jan-May

(Contd.)

States/Uts	Period	Kharif Sugarcane	Rabi Sugarcane	Kharif Jute
(1)	(2)	(3)	(4)	(5)
Andhra Pradesh	Sowing	Dec(E)-Jun(M)		
	Harvesting	Dec(E)_May(M)		
Assam	Sowing	Mar(B)-Apr(E)		
	Harvesting	Dec(B)-Jan(E)		
Haryana	Sowing	Feb(M)-Mar(M)		
	Harvesting	Dec(M)-March(E)		
Karnataka	Sowing	Dec(B)-Mar(E)*		
	Harvesting	Aug(B)-May(E)		
Kerala	Sowing			Jun(B)-Oct(E)
	Harvesting			Oct(B)-Jan(E)
Madhya Pradesh	Sowing	Oct(B)-Apr(E)		
	Harvesting	Oct(E)-Mar(E)		
Maharashtra	Sowing	Jul(B)-Aug(E)		
	Harvesting	Oct(B)-Nov(E)		
Manipur	Sowing			Feb-Mar
	Harvesting			Aug-Sep
Odisha	Sowing	Feb-May		May-Jun
	Harvesting	Nov-Feb		Aug-Sep
Punjab	Sowing	Feb(B)-Mar(E)		
	Harvesting	Nov(B)-Feb(E)		
Rajasthan	Sowing	Mar(B)-Apr(E)		
	Harvesting	Dec(B)-Mar(E)		
Tamil Nadu	Sowing	Dec(B)-Jan(E)***		
	Harvesting	Dec(B)-Jan(E)		
Tripura	Sowing	Feb-May		Mar-May
	Harvesting	Dec-Mar		Aug-Sep
West Bengal	Sowing			Mar(B)-May(E)
	Harvesting			Jul(B)-Aug(E)
All India	Sowing	Feb(B)-Aug(E)	Jun(B)-Oct(E	Feb-Jun
	Harvesting	Aug(B)-nov(E)	Oct(B)-Jan(E	Aug-Oct

*=Annual; **Early Kharif; ***Early sugarcane

Source : Indian Council of Agricultural Research (Crop Science Division)

Appendix-v

Harvesting Season of Major Fruits

State /Uts	Mango	Apple	Banana	Lime/Lemon	Grapes
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	March - June		round the year	Aug - Jan.	Feb. - April & Nov. - Dec.
Arunanchal Pradesh	July - Sept.	Aug.- oct.	*	Nov.-Jan	
Assam	May - July		round the year	round the year	Nov.-Jan
Bihar	May - July		Aug. - Dec.	*	
Chhatisgarh	March - June		Feb. - Apr.	Nov.-Feb.	Dec. - Jan.
Delhi	Jun. - Aug.				May - July
Goa	Jan. -June.		round the year		
Gujarat	April - July		Aug. - March	Aug. - Nov.	
Haryana	Jun. - Aug.			Nov.-Feb.	May - July
Himanchal Pradesh	Jun. - Aug.	July - Oct.		Nov.-Jan.	Jan. - Feb.
Jammu & Kashmir	July - Aug.	Aug. - Nov.		Oct. - Nov.	June - July & Nov-Dec
Jharkhand	May - July		Aug. -Dec.	*	
Karnataka	March-July		round the year	*	Jan. - May
Kerala	*		*		
Madhya Pradesh	March-June		Feb. - Apr.	Nov. - Feb.	Dec. - May
Maharashtra	March-June		round the year	Jan. - July	Feb. - May
Manipur	April - Sept.	Sep. - Nov.	round the year	Oct. - Dec.	Nov. - Dec.
Meghalaya			June - Aug.		Jan. - Feb.
Mizoram	May - July		June - Dec.	Jun - Nov.	Dec.& Feb.
Nagaland	Jun. - Aug.		Aug. - Oct.		
Odisha	April - June		round the year	*	
Punjab	Jun. - Aug.			Nov. - March	May. -Aug.
Rajasthan	May - July		round the year	May - Sept.	March.&May- Aug.
Sikkim					Nov.& Jan.
Tamil Nadu	April - July		round the year	May - Sept.	March & May.-July & Sep.- Nov.
Tripura	May - July		round the year	April - Oct.	Nov.
Uttar Pradesh	April - Sept.		Sept. -Nov.		July - Sep.
Uttarakhand	May - Sept.	June - Oct.	June - Sept.	Sept. - Nov.	Dec. & Feb.
West Bengal	May - Aug.		July - Oct.		Jan. - Feb.
Andaman & Nicobar	April - July		round the year		
Chandigarh					Jan. - April
D & N Haveli					
Daman & Diu	May - July		round the year		
Lakshadweep			round the year		
Puducherry	April - Aug.		June - Sept.	Nov.-Feb.	

* Information not available.

Source : National Horticulture Board

Appendix-VI

Harvesting Season of Major Vegetables

State/UT	Potato	Onion	Tomato	Cabbage	Cauliflower
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	Mar. - Dec.	Mar. - June & Aug. - Dec.		Nov. - Feb.	
Arunanchal Pradesh	-	-	*	*	*
Assam	Apr.- sep.	Dec.. - Mar.	Nov. - Mar.	Nov. -Mar.	Nov. - Mar.
Bihar	Mar.- Oct.	Feb. -April	Oct. - apr.	Nov. - Apr.	Oct. - apr.
Chhatisgarh	Dec.. - Mar.	April - June	Dec. - Mar.	Dec. - Mar.	Dec. - Mar.
Delhi	July - Oct.	April - June	Oct. - Mar.	Dec. - Mar.	Oct. - Mar.
Goa	-	-	-	-	-
Gujarat	round the year	Jan. - Mar.	*	Oct. - Mar.	*
Haryana	Mar. -May	Mar. - May.	Oct. - Mar.	*	Oct. - Mar.
Himanchal Pradesh	-	-	*	*	*
Jammu & Kashmir	-	-	*	*	*
Jharkhand	Mar. -Oct.	Feb. - Apr.	Oct. - apr.	Nov. - Apr.	Oct. - apr.
Karnataka	June - Sep.	Aug. - Jan.	Dec. - Mar.	Jan. - Mar.& Aug. - Oct.	Dec. - Mar.
Kerala	*	-	-	-	-
Madhya Pradesh	Dec.. - Mar.	Apr. - July	Dec. - Mar.	Dec. - Mar.	Dec. - Mar.
Maharashtra	Jan. -July	Mar. - May.& Oct. - Dec.	*	Dec. - Mar.	*
Manipur	Apr. - Aug.	-	Aug. - Dec.	Oct. - Feb.	Aug. - Dec.
Meghalaya	-	Mar. - May.	Oct. - Mar.	Aug. - Mar.	Oct. - Mar.
Mizoram	June - Oct.	-	Dec. - Feb.	Dec. - Feb.	Dec. - Feb.
Nagaland	-	Jan. - Apr.	June - Oct.	June. - Oct.	June - Oct.
Odisha	round the year	Feb. -May	Sep. - Jan.	Dec. - Mar.	Sep. - Jan.
Punjab	Apr. - June	Mar. -May	Oct. -Feb.	-	Oct. -Feb.
Rajasthan	Apr. -Nov.	Mar. -May	Sep. - Dec.	Sep. - Dec.	Sep. - Dec.
Sikkim	-	-	Oct. -Feb.	Oct. - Apr.	Oct. -Feb.
Tamil Nadu	June -Aug.	Oct. - Dec.	-	Nov. - Jan.& Apr. - June	-
Tripura	-	-	-	-	-
Uttar Pradesh	Mar. - Nov.	Feb. - Apr.	Sep. - Feb.	Dec. - Apr.	Sep. - Feb.
Uttarakhand	June - Sep.	Mar. -May	July. - Mar.	July. - Mar.	July. - Mar.
West Bengal	round the year	Mar. -May	Nov. - Mar.	Sep. - Apr.	Nov. - Mar.
Andaman & Nicobar	-	-	Jan. - Mar.	Jan. - Mar.	Jan. - Mar.
Chandigarh	-	-	-	-	-
D & N Haveli	-	-	-	-	-
Daman & Diu	-	-	-	-	-
Lakshadweep	-	-	-	-	-
Puducherry	Mar. - Aug.	Mar. -May & Oct. - Dec.	-	-	-
			-	-	-

* Information not available.

Source : National Horticulture Board

Appendix-VII

General Seed Rate of Sowing for Important Field Crops*

(Kg/ha).

Crop	Variety	Hybrid
(1)	(2)	(3)
Cereal Crops		
Rice	75-100	-
Direct sowing	50-75	15
Transplanting	100-125	-
Wheat	20	15
Maize	100	-
Barley	12-15	75
Jowar	5	5
Bajra	5	-
Ragi	8-10	8-10
Sorgum	-	-
Pulses		
Tur(Arhar)	10	10
Green Gram (Kharif) 15-20 (Ravi) 25-30 & Summer)	30-35	-
Black Gram (Kharif) 15-20 (Ravi) 25-30 & Summer)	30-35	-
Lentil	50-60	-
Peas	80-100	-
Chickpea (Desi)	65-75	-
Chickpea (Kabuli)	100-120	-
Pigeonpea	15-20	-
Rajmash	75-100	-
Moth	15-18	-
Kulthi	22-30	-
Oilseed		
Groundnut	90-110	-
Rape/Mustard	5	35
Soyabean	75-85	-
Til (Sesamum)	5	-
Castor	6	5
Sunflower	6	5
Safflower	10-12	8-10
Linseed 25-30 & Linseed(DP)	40-45	-
Niger	5-8	-
Cotton	7.5	2.5
Jute	8-10	-
Mesta	12-5	-
Sunhemp	25	-
Foder Crops		
Jowar	20-25	12
Barseem	20-25	-
Lucern	7.5	-
Oats	62.5	-
Maize	25	-
Others		
Sugarcane	5500-6000 (35000 -40000) setts with 3-buds	-

* The quantity of seed may vary according to variety (duration),seed size, recommended spacing, method of sowing , agro - climatic conditions and cropping system.