

# **AGRICULTURAL SITUATION IN INDIA**

**MARCH, 2013**



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**PUBLICATION DIVISION  
DIRECTORATE OF ECONOMICS AND STATISTICS  
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# *Agricultural Situation in India*

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## CONTENTS

### PART I

	PAGES
<b>A. GENERAL SURVEY</b>	1
<b>B. ARTICLES</b>	
1. Assessment of Feed Resources and its impact on Livestock Output in India— <i>Dr. S. S. Raju</i>	5
2. A New Approach on the Estimation of Fair Value of Future Return from Present Income Vis-A-Vis Discounting Factor of Acquired Standing Trees— <i>B. B. Sharma and M. M. Gupta</i>	13
3. Crisis in Indian Agricultural Sector— <i>Jyoti and Dharam Pal</i>	19
<b>C. AGRO-ECONOMIC RESEARCH</b>	
Possibilities and Constraints in Increasing Pulses Production in Andhra Pradesh and the Impact of National Food Security Mission on Pulses— <i>A.E.R.C. for Andhra University, Visakhapatnam</i>	29
<b>D. COMMODITY REVIEWS</b>	
(i) Foodgrains	37
(ii) COMMERCIAL CROPS :	
Oilseeds and Edible Oils	39
Fruits and Vegetables	39
Potato	39
Onion	39
Condiments and Spices	39
Raw Cotton	39
Raw Jute	39

(i)

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#### NOTE TO CONTRIBUTORS

Articles on the State of Indian Agriculture and allied sectors are accepted for publication in the Directorate of Economics & Statistics, Department of Agriculture & Cooperation monthly Journal "Agricultural Situation in India". The Journal intends to provide a forum for scholarly work and also to promote technical competence for research in agricultural and allied subjects. The articles, not exceeding five thousand words, may be sent in duplicate, typed in double space on one side of fullscape paper in Times New Roman font size 12, addressed to the Economic & Statistical Adviser, Room No.145, Krishi Bhawan, New Delhi-11 0001, alongwith a declaration by the author(s) that the article has neither been published nor submitted for publication elsewhere. The author(s) should furnish their e-mail address, Phone No. and their permanent address only on the forwarding letter so as to maintain anonymity of the author while seeking comments of the referees on the suitability of the article for publication. Soft Copy is also required.

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## PART II

### STATISTICAL TABLES

	PAGES
<b>A. WAGES</b>	
1. Daily Agricultural Wages in Some States— Category-wise.	41
1.1. Daily Agricultural Wages in Some States— Operation-wise.	41
<b>B. PRICES</b>	
2. Wholesale Prices of Certain Important Agricultural Commodities and Animal Husbandry Products at Selected Centres in India.	43
3. Month end Wholesale Prices of some Important Agricultural Commodities in International Market during year 2013	45
<b>C. CROP PRODUCTION</b>	
4. Sowing and Harvesting Operations Normally in Progress during April, 2013.	47

#### Abbreviations used

N.A. —Not Available.

N.Q. —Not Quoted.

N.T. —No Transactions.

N.S. —No Supply/No Stock.

R. —Revised.

M.C. —Market Closed.

N.R. —Not Reported.

Neg. —Negligible.

Kg. —Kilogram.

Q. —Quintal.

(P) —Provisional.

Plus (+) indicates surplus or increase.

Minus (–) indicates deficit or decrease.

## A. General Survey

### (i) Trends in Foodgrain Prices:

During the month of February, 2013 the All India Index Number of Wholesale Price (2004-05=100) of Foodgrains increased by 0.60 per cent from 215.9 in January, 2013 to 217.2 in February 2013.

The Wholesale Price Index Number of Cereals showed an increase of 1.38 per cent from 209.5 to 212.4 whereas of Pulses showed a decline of 2.68 per cent from 246.4 to 239.8.

The Wholesale Price Index Number of Wheat increased by 0.73 per cent from 205.4 to 206.9 while that of Rice increased by 1.78 per cent from 202.0 to 205.6 during the same period.

### (ii) Weather. Rainfall and Reservoir situation during March, 2013.

- Cumulative Pre-Monsoon (March to May) Rainfall for the country as a whole during the period 01st March to 27th March, 2013 is 50% less than LPA. Rainfall in the four broad geographical divisions of the country during the above period was (-) 58% in North West India, (-)48% in Central India,

31 % in South Peninsula and (-) 57% in East & North East India.

- Out of a total of 36 meteorological sub-divisions, 09 sub-divisions constituting 20% of the total area of the country received excess/normal rainfall, 24 subdivisions constituting 73% of the total area of the country received deficient/scanty rainfall and 03 subdivisions constituting 7% of the total area of the country received no rainfall.
- Central Water Commission monitors 84 major reservoirs in the country which have a total live capacity of 154.42 BCM at Full Reservoir Level (FRL). Current live storage in these reservoirs as on 28th March, 2013 was 53.36 BCM as against 50.83 BCM on 28-03-2012(last year) and 45.31 BCM of normal storage (average storage of the last 10 years). Current year's storage is 105% of the last year's and 118% of the normal, storage.

A statement indicating comparative position of area coverage under major Rabi crops during 2012-13 (second Advance Estimate 2012-13) and the last year is given in the Annexure.

#### ALL INDIA CROP SITUATION - RABI (2012-13)

Crop Name	Normal Area	Area sown reported (In lakh hectares)			Difference
		2nd Adv. Est 2012-13	% of Normal	Final Est 2011- 12	
Wheat	282.62	294.34	104.1	298.65	-4.3
Rice	44.99	37.88	84.2	38.83	-1.0
Jowar	44.99	38.22	85.0	36.25	2.0
Maize	11.36	12.75	112.2	14.01	-1.3
Barley	6.57	7.55	115.0	6.43	1.1
Total Coarse Cereals	62.92	58.52	93.0	56.69	1.8
Total Cereals	390.53	390.74	100.1	394.17	-3.4
Gram	80.57	89.25	110.8	82.99	6.3
Urad	7.46	8.62	115.5	8.57	0.1
Moong	6.40	8.57	134.0	7.78	0.8
Total Pulses	127.46	142.20	111.6	132.72	9.5
Total Foodgrains	517.99	532.94	102.9	526.89	6.0
Rapeseed & Mustard	62.80	61.97	98.7	58.94	3.0

ALL INDIA CROP SITUATION - RABI (2012-13)—Contd.

Crop Name	Normal Area	Area sown reported (In lakh hectares)			
		2nd Adv. Est 2012-13	% of Normat	Final Est 2011- 12	Difference
Groundnut	8.87	10.43	117.6	9.48	1.0
Safflower	3.05	1.57	51.5	2.50	-0.9
Sunflower	10.26	5.56	54.2	4.72	0.8
Linseed	4.03	3.04	75.4	3.23	-0.2
Total Oilseed (Nine)	91.56	82.57	90.2	78.86	3.7
<b>All. Crops</b>	<b>609.55</b>	<b>615.51</b>	<b>101.0</b>	<b>605.75</b>	<b>9.8</b>

**Agriculture :—**

**All India production of foodgrains:** As per the 2nd advance estimates released by Ministry of Agriculture on 8-2-2013, production of food grains during 2012-13 is estimated at 250.14 million tonnes compared to 250.42 million tonnes (2nd advance estimates) in 2011-12.

**Procurement :** Procurement of rice as on 1st February, 2013 was 23.27 million tonnes of Rabi Marketing Season as against 21.80 million tonnes procured last year in the corresponding period respectively. This represents an increase of 6.74 per cent. Wheat procurement during Rabi Marketing Season 2012-13 is 38.15 million tonnes as compared to 28.15 million tonnes during the corresponding period last year.

TABLE 1—PROCUREMENT IN MILLION TONNES

	2009-10	2010-11	2011-12	2012-13
Rice	32.03	34.20	35.04*	26.09*
Wheat	25.38	22.51	28.34	38.15**
<b>Total</b>	<b>57.41</b>	<b>56.71</b>	<b>63.38</b>	<b>64.24</b>

\* Position as on 20-2-2013. \*\* Position as on 02-08-2012

**Off-take :** Off-take of rice during the month of January, 2013 was 26.46 lakh tonnes. This comprises 21.10 lakh tonnes under TPDS and 5.36 lakh tonnes under other schemes during January 2013. In respect of wheat, the total off take was 32.22 lakh tonnes comprising of 16.12 lakh tonnes under TPDS and 16.10 lakh tonnes under other schemes.

**Stocks:** Stocks of food-grains (rice and wheat) held by FCI as on March 1, 2013 were 62.87 million tonnes, which is higher by 15.5 per cent over the level of 54.44 million tonnes as on March 1, 2012.

TABLE 2—OFF-TAKE AND STOCKS OF FOODGRAINS (MILLION TONNES)

	Off-take			Stocks	
	2010-11	2011-12(P)	2012-13(P) (up to Jan. 2013)	Mar. 1, 2012	Mar. 1, 2013
Rice	29.93	32.12	26.67	33.18	35.77
Wheat	23.07	24.26	26.36	21.26	27.10
<b>Total</b>	<b>53.00</b>	<b>56.38</b>	<b>53.03</b>	<b>54.44</b>	<b>62.87</b>

P=Provisional.

**Growth of Economy :—**

As per the Advance Estimates of the Central Statistics Office (CSO), the growth in Gross Domestic Product (GDP) at factor cost at constant (2004-05 prices) is estimated at 5.0 per cent in 2012-13 with agriculture, industry and services registering growth rates of 1.8 per cent, 3.1 per cent and 6.6 per cent respectively. As per the First Revised

Estimates, the growth in GDP at factor cost at constant (2004-05) prices is estimated at 6.2 per cent in 2011-12. At disaggregated level, this (First Revised 2011-12) comprises growth of 3.6 per cent in agriculture and allied activities, 3.5 per cent in industry and 8.2 per cent in services. The growth in GDP is placed at 4.5 per cent in the third quarter of 2012-13.

TABLE 3—GROWTH OF GDP AT FACTOR COST BY ECONOMIC ACTIVITY

(at 2004-05 Prices)

Sector	Growth			Percentage Share in GDP		
	2010-11	2011-12 IR	2012-13 AE	2010-11	2011-12 IR	2012-13 AE
1. Agriculture, forestry and fishing	7.9	3.6	1.8	14.5	14.1	13.7
<b>2. Industry</b>	<b>9.2</b>	<b>3.5</b>	<b>3.1</b>	<b>28.2</b>	<b>27.5</b>	<b>27.0</b>
a. Mining and quarrying	4.9	-0.6	0.4	2.2	2.1	2.0
b. Manufacturing	9.7	2.7	1.9	16.2	15.7	15.2
c. Electricity, gas and water supply	5.2	6.5	4.9	1.9	1.9	1.9
d. Construction	10.2	5.6	5.9	7.9	7.9	7.9
<b>3. Services</b>	<b>9.8</b>	<b>8.2</b>	<b>6.6</b>	<b>57.3</b>	<b>58.4</b>	<b>59.3</b>
a. Trade, hotels, transport and communication	12.3	7.0	5.2	27.3	27.5	27.5
b. Financing, insurance, real-estate and business services	10.1	11.7	8.6	17.2	18.1	18.7
c. Community, social and personal services	4.3	6.0	6.8	12.8	12.8	13.0
<b>4. GDP at factor cost</b>	<b>9.3</b>	<b>6.2</b>	<b>5.0</b>	<b>100</b>	<b>100</b>	<b>100</b>

(IR): 1<sup>st</sup> Revised Estimates; AE: Advance Estimates

TABLE 4—QUARTERLY ESTIMATE OF GDP

(Year-on-year in per cent)

Sector	2011-12			2012-13		
	Q1	Q2	Q3	Q1	Q2	Q3
<b>1. Agriculture, forestry &amp; fishing</b>	5.4	3.2	4.1	2.9	1.2	1.1
<b>Industry</b>	5.7	3.8	2.6	3.6	2.7	3.3
2. Mining & quarrying	-0.4	-5.3	-2.6	0.1	1.9	-1.4
3. Manufacturing	7.4	3.1	0.7	0.2	0.8	2.5
4. Electricity, gas & water supply	6.6	8.4	7.7	6.3	3.4	4.5
5. Construction	3.8	6.5	6.9	10.9	6.7	5.8
<b>Services</b>	8.9	8.5	8.3	7.0	7.2	6.1
6. Trade, hotels, transport & communication	9.5	7.0	6.9	4.0	5.5	5.1
7. Financing, insurance, real estate & bus. Services	11.6	12.3	11.4	10.8	9.4	7.9
8. Community, social & personal services	3.5	6.5	6.8	7.9	7.5	5.4
<b>9. GDP at factor cost (total 1 to 8)</b>	<b>7.5</b>	<b>6.5</b>	<b>6.0</b>	<b>5.5</b>	<b>5.3</b>	<b>4.5</b>

Source: CSO

## **AGRICULTURAL PRICES IN INDIA**

**It is an old adage that Agricultural prices mirror the economy of a country. It is more true in the case of an agricultural country like India. Viewed from this angle, it is quite an important publication. It gives information on index numbers, farm (Harvest) prices, wholesale and retail prices of various agricultural commodities, etc.**

## B. Articles

### Assessment of Feed Resources and its impact on Livestock Output in India

DR. S. S. RAJU\*

#### Abstract

India has vast and diverse livestock and poultry population. India has 210 million cattle, 111 million buffaloes, 154 million goats and 74 million sheep and 800 million poultry birds (FAOSTAT, 2010). The contribution of the livestock to the gross value of output of the agricultural sector has been increasing continuously and faster than the crop sector. If the livestock production has to be increased to higher levels or even sustain current levels, it is imperative that greater attention has to be given in the deficit regions for the feed resources availability and also for efficient utilization of the existing resources. There is a considerable scope for further improvement in the overall livestock production and productivity in the country through suitable interventions. This would be possible through a multi-pronged approach and concerted efforts of the policy makers, planners, researchers and extension personnel.

Key words: Feed resources, Dry matter availability, ruminant livestock unit, Livestock output, India

India has vast and diverse livestock and poultry population. As per the Food and Agriculture Organization Statistics (FAOTAT), 2010 India has 210 million cattle, 111 million buffaloes, 154 million goats and 74 million sheep and 800 million poultry birds. The contribution of the livestock to the gross value of output of the agricultural sector has been increasing continuously and faster than the crop sector. In 1980-81, livestock accounted for about 14 per cent of the agricultural GDP. This has gradually increased to 27 per cent in 2010-11. Livestock sector provides large self-employment opportunities. According to National Sample Survey Organisation's latest quinquennial survey (NSS 66th round- July 2009 to June 2010), total number of workers engaged in farming of animals were 14.9 millions. Over the last 2 decades, although there has been considerable increase in milk production and productivity, the productivity per unit animal is much lower compared to that in many developed and developing countries. The productivity of small ruminants and pigs is also considerably low and has been stagnating. One of the important factor is feed - fodder scarcity has constrained the productivity growth. This need to be addressed through assessment of feed and animal resources in the country.

Feed being the major input factor in all livestock production systems the production/productivity of livestock is strongly linked to the feed resource availability.

Efficient management of feed resource is of paramount importance for optimizing livestock production. Information on the availability of feed resources is not readily available and this severely hampers the formulation of effective policies for livestock sector. Although in the past there has been limited efforts by the different researchers Sen and Ray (1941), Mudgal and Pradhan (1988), Hazra and Rekib (1991), Singh and Majumdar (1992) and Ramachandra *et. al.* (2007) there has been no systematic and concerted efforts in this direction. We have assessed the availability of feed resources vis- a- vis livestock resources based on the secondary data of crop production, land utilization pattern and livestock census.

#### Changing Scenario of Livestock Population

The structural changes in livestock population represented by the compositional changes in the type of livestock (Table 1) revealed that cattle and buffaloes followed by goat and sheep dominate the scene. Over a period of three decades ending 2007, this pattern is more or less same. In the early 1980's the proportion of cattle and buffaloes to total livestock was 62% where as in early 2000's it was 58%. In case of sheep and goat, the proportion was 34% in early 1980's as compared to 38% in early 2000's. The share of all other livestock (consisting of asses, horses, camels, mules and pigs) little bit increased in 2000's as compared to that in 1980's.

For the sake of brevity only the categories of livestock which are numerically important in terms of contribution to livestock output is discussed in this section. Accordingly the quinquennial changes/growth in numbers of cattle, buffalo, sheep and goat which account for bulk of livestock population in the country have been taken up for analysis.

#### Cattle :

Cattle population in the country has increased steadily from 192 million in the livestock census year 1982 to 199 million in 2007 - an increase of about 3.65% in two and half decades. The decadal increases have been steady at about 1.5 per cent.

#### Buffaloes :

Buffalo population, on the other hand has increased sharply from about 70 million in 1982 to 105 million in 2007 - an increase of over 50% in two and half decades. The decadal increase was around 20% between 1982-92 but the increase was slightly lower at 17% between 1997-2007.

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TABLE 1—LIVESTOCK POPULATION IN INDIA (million numbers)

Census Year	Total livestock population	Cattle	Buffaloes	Sheep	Goat	Asses	Horses	Camels	Mules	Pigs	Poultry
1982	420	192 (45.71)	70 (16.67)	49 (11.67)	95 (22.62)	1.02 (0.24)	0.90 (0.21)	1.08 (0.26)	0.13 (0.03)	10.07 (2.40)	208
1987	445	200 (44.94)	76 (17.08)	46 (10.34)	110 (24.72)	0.96 (0.22)	0.80 (0.18)	1.00 (0.22)	0.17 (0.04)	10.63 (2.39)	275
1992	471	205 (43.52)	84 (17.83)	51 (10.83)	115 (24.42)	0.97 (0.21)	0.82 (0.17)	1.03 (0.22)	0.19 (0.04)	12.79 (2.72)	307
1997	485	199 (41.03)	90 (18.56)	57 (11.75)	123 (25.36)	0.88 (0.18)	0.83 (0.17)	0.91 (0.19)	0.22 (0.05)	13.29 (2.74)	348
2003	485	185 (38.14)	98 (20.21)	61 (12.58)	124 (25.57)	0.65 (0.13)	0.75 (0.15)	0.63 (0.13)	0.18 (0.04)	13.52 (2.79)	489
2007	530	199 (37.55)	105 (19.81)	72 (13.58)	140 (26.42)	0.44 (0.08)	0.61 (0.12)	0.52 (0.10)	0.14 (0.03)	11.13 (2.10)	649

Note: Figures in brackets indicate percent to total livestock population

Source: Basic Animal Husbandry Statistics 2012, DAHDF, GoI.

**Sheep:**

The population of sheep increased from 49 million in 1982 to 72 million in 2007 - an increase of 47% over 25 years. Unlike cattle and buffalo, the decadal changes in sheep population were uneven. The sheep population increased by 4.1% between 1982—1992 and by 26% between 1997-2007.

**Goats:**

The population of goat increased from 95 million in 1982 to 140 million in 2007 - an increase of 47.37% over two and half decades. This growth in numbers has been achieved with a phenomenal growth of 29% between 1982 and 1997. However, between 1992-2007 there was a comparatively moderate increase of only 14%.

**Poultry:**

The number of poultry birds including ducks increased from 208 million in 1982 to 649 million by 2007 - a threefold increase over the 25 year period. The increase in the poultry birds in the last decade 1997-2007 is a phenomenal 86%. Poultry as an important component of livestock economy of the country has significant implications for feed resource allocation between poultry birds and other types of livestock like cattle and buffaloes.

During the inter-censal period from 2003 to 2007, The population of camels, horses and ponies, mules, asses and pigs decreased by 18.2%, 18.6%, 22.1%, 32.6% and 17.6% respectively.

The changes in livestock numbers and their growth reveals that all types of livestock have increased over the years but they are increasing at a slower rate in the last decade ending 2003 as compared to an earlier decade. This could probably be attributed to less depending on animal draft power and farmers giving more importance to retaining of productive animals and disposing off the non-productive animals.

**Present status of Animal Feed Resources :**

Availability of feed resources in terms of dry matter through crop residues, concentrates and greens for the period 1980-81 to 2011-12 is presented in Table 1. Contrary to the belief that there has been a decline in the availability of feed resources, the data clearly shows that the overall dry matter availability from different sources has increased over the years from 341 million tonnes to 574 million tonnes. The increased availability of feed resources was chiefly due to the increase in the crop residues and to a limited extent by increase in the concentrates. Availability of greens was more or less remained static over the years.

**Crop residues:**

These are generally defined as feedstuffs, which are bulky and contain more than 18% fibre. Crop residues

comprise straws and stovers obtained after harvesting the crops. Crop residues are the major feed resource for feeding of livestock across all states. The scenario is not expected to drastically change in near future. The total dry matter availability from crop residues in the country from 1980-81 to 2011-12 is presented in Table 1. The availability of dry matter through crop residues which was to the tune of 176.69 million tonnes in 1980-81 has increased to 355.93 million tonnes in 2011-12 registering an increase of 101% over a period of 30 years. At the national level, out of the total 574.3 million tones of dry matter available, 62.5 % is accounted by crop residues. Contrary to the belief that the availability of feed resources specially the crop residues has decreased over the years, the present study has clearly indicated that the situation has been entirely different. In spite of the fact that the Net Sown Area has been constant (142 million hectares) over the years the availability of crop residues has increased over the years. This could probably be attributed to the cultivation of crops of HYV's, irrigation and other package of practices. The increase in the availability of crop residues over the years has largely been due to increase in production of paddy and wheat crops. The starting of green revolution heralded the introduction of HYV's of wheat and paddy through out the country in general and in the states of Punjab, Haryana and Uttar Pradesh in particular resulting in higher grain production and consequently higher availability of straws from these crops.

The availability of dry matter through coarse straws has increased from 62.46 million tonnes in 1980-81 to 44.26 million tonnes in 2011-12 representing decrease of 29.1%. It becomes clear that the availability of Jowar, Bajra and Small millets straws has considerably decreased since 1995-96 whereas maize has shown an increasing trend during the same period. The states of Maharashtra, Andhra Pradesh and Karnataka, which were considered as traditional states cultivating the coarse cereals to a considerable extent have shown a declining trend over the years probably due to the change in the shifting cultivation from coarse cereal crops to rice cultivation. This has resulted in less availability of coarse straws for feeding of animals in these states.

**Concentrates:**

Concentrates as feed ingredients are less bulky, contain less than 18 % fibre and are rich in energy-yielding nutrients. Concentrates comprise of cereal grains and their by-products, oilseeds and their products and animal products. The availability of nutritionally rich concentrate ingredients for feeding of livestock has considerably increased over the years. The availability of concentrates (on DM basis) through oil cakes, bran, chuni and grains has increased from 16.82 million tonnes in 1980-81 to 49.71 million tonnes in 2011-12 (oil cakes 19.6, bran and chuni

16.38 and garins 13.73). The contribution of the grains, bran and chunis and the oil cakes and their increase over the years is presented in table 2.

The major increase was seen in the availability of oil cakes and brans due to greater emphasis on oil seeds production given under the technology mission on oil

seeds and higher production of paddy and wheat. The ruminants do not consume all the available concentrates and a sizeable portion is consumed by poultry industry, which has shown a steep growth in the recent past. Diversion of concentrates to poultry would not affect the overall dry matter availability in ruminants, as concentrates constitutes a mere 8.7% of the total dry matter available.

TABLE 2—DRY MATTER AVAILABILITY FROM DIFFERENT FEED RESOURCES IN INDIA (million tonnes)

Feed Resources	1980-81	1985-86	1990-91	1995-96	1999-00	2005-06	2011-12
<b>Crop Residues:</b>							
Fine Straw	95.43	117.03	136.54	145.95	172.70	205.56	252.16
Coarse Straw	62.46	56.38	71.25	62.57	67.28	62.63	44.26
Leguminous Straw	18.80	29.66	35.33	33.35	29.99	50.15	59.51
Total	176.69	203.07	243.12	241.87	269.97	318.34	355.93
<b>Concentrates:</b>							
Oil Cakes	6.54	7.61	12.71	15.54	14.36	24.41	19.60
Bran	6.47	7.98	9.32	10.01	11.88	12.89	15.86
Chuni	0.29	0.36	0.38	0.33	0.36	0.40	0.52
Grains	3.52	3.73	4.44	4.34	4.95	10.16	13.73
Total	16.82	19.68	26.85	30.22	31.95	47.86	49.71
<b>Greens:</b>							
Cultivated	86.32	89.23	92.87	93.74	92.67	96.66	96.10
Forests	25.30	25.15	25.43	25.81	26.07	26.13	26.27
Others	35.85	36.45	39.86	41.75	42.37	40.92	46.29
Total	147.46	150.83	158.16	161.29	161.11	163.71	168.66
<b>Grand total</b>	<b>340.97</b>	<b>373.58</b>	<b>428.13</b>	<b>433.38</b>	<b>463.03</b>	<b>529.91</b>	<b>574.3</b>

Source: Computed from Feed Base Compact Disc, NIANP, 2013.

### Green Fodder:

There has not been much improvement in the availability of green fodder over the years, which is a matter of concern. The dry matter availability through greens on all India basis, which was to the tune of 147.46 million tonnes in 1980-81 has increased to 168.66 million tonnes in 2011-12. Even though the area under the cultivated fodder crops has increased over the years due to the increase in gross cropped area the percentage of the area under fodder cultivation has almost remained stagnant at 4 per cent of the total cropped area in the country.

One striking feature is the increased availability of sugarcane tops over the last 30 years. Availability of dry matter through sugarcane tops has increased by almost

29 per cent from 1980-81 to 2011-12. Even though the potential availability of sugarcane tops has increased considerably in the states of Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu and Andhra Pradesh, concerted efforts have not gone for efficient utilization of this feed resource for animal feeding. In the sugarcane based farming system there is a need for efficient incorporation of sugarcane tops in the diet of livestock especially the large ruminants so as to make the livestock production systems in these areas more profitable.

### Feed availability per Ruminant Livestock Unit:

The data on dry matter availability of the available feed resources to the ruminant livestock species from 1980-81 to 2011-12 is presented in Table 3. It is amply

clear that there has been a considerably increase in dry matter availability over a period of time in spite of the

fact that Ruminant Livestock Units has also shown corresponding increase during this period. This resulted

TABLE 3—DM AVAILABILITY PER RLU FROM DIFFERENT FEED RESOURCES

Year	1980-81	1985-86	1990-91	1995-96	1999-00	2005-06	2011-12
RLU (million heads)	177.46	190.22	201.27	208.86	218.73	238.52	263.44
DM available (kg / RLU/ year)							
Crop residues	995.65	1067.58	1207.9	1158.03	1234.27	1334.67	1351.09
Concentrates	94.78	103.46	133.40	144.69	146.07	200.66	188.70
Greens	830.94	792.94	785.79	772.22	736.58	686.37	640.22
Total	1921.37	1963.98	2127.10	2074.94	2116.92	2221.69	2180.00

Source: Computed from Feed Base Compact Disc 2013, NIANP.

in increase in the availability of dry matter per RLU from 1921 kg in 1980-81 to 2180 kg per annum in 2011-12. The Table 3 clearly shows that there is a steady increase in the availability of total dry matter per RLU, dry matter through crop residues and concentrates except dry matter through greens over the years. Further there is a shift in the proportion of crop residues, concentrates and greens to total dry matter available per RLU from 52:5:43 in 1980-81 to 62:9:29 in 2011-12 suggesting that the share of crop residues is gradually increasing while the share of greens is declining over the years. A fact that emerges with clarity is that the available feed resources have been sufficient to meet quantitatively at least the dry matter requirement of the ruminant animals. It needs to be clarified here that we are not presently looking into whether the available feed resources are able to meet the nutrient requirement of these animals qualitatively in

terms of protein and energy requirement. This would be possible only when further data input in terms of the nutrient requirement for different categories of animals under different agro-climatic regions and the present feeding regimen being practices by the farmers round the year is forth coming

#### Feed Balance vis-a-vis milk and meat production:

The present study has clearly indicated that the availability of feed resources has increased over the years and this has been one of the major contributing factors for the increased milk and meat production from 1982 to 2011. (Table 4). The livestock sector achieved an average growth rate of 4.8 per cent during the Eleventh Five Year Plan (2007-2012). In 2010-11, the production of milk was at 121.85 million tonnes, eggs at 63.02 billion numbers, 42.99 million kg wool, and 6.14 million tonnes of meat.

TABLE 4—LIVESTOCK OUTPUT IN INDIA (million tonnes)

Items	1982	1987	1992	1997	2002	2007	2011
Cow milk	15.04	19.50	24.29	29.13	34.61	46.82	54.90
Buffalo milk	19.69	25.82	29.60	38.71	46.51	56.63	62.35
Goat milk	1.07	1.38	2.52	3.04	3.64	4.48	4.60
Total milk	35.80	46.70	56.41	70.88	84.76	107.93	121.85
Beef and veal	0.93	1.02	1.05	1.02	0.96	1.02	1.09
Buffalo meat	0.94	1.02	1.13	1.20	1.29	1.41	1.50
Mutton and lamb	0.19	0.17	0.19	0.21	0.23	0.27	0.30
Goat meat	0.32	0.42	0.44	0.47	0.47	0.54	0.60
Poultry meat	0.27	0.42	0.67	0.81	1.27	1.93	2.25
Pig meat	0.3	0.37	0.44	0.46	0.47	0.39	0.33
Total meat	2.95	3.42	3.92	4.17	4.69	5.56	6.14

Source: FAOSTAT-2012

Within the country there are regional differences with regard to the availability of feed resources. The states of Punjab, Haryana, Uttar Pradesh in the Northern India which are agriculturally advanced are either surplus or self sufficient in feed resources are contributing about 34% of the total milk production in India. The contribution from the states of Central, Southern and Western regions, which are moderately sufficient in the dry matter availability, are contributing is to an extent of 53% of milk production and the rest 13% contribution comes from the deficit states of Bihar, West Bengal, Orissa and North Eastern states.

#### **Conclusion :**

The conventional feed resources enhancement on Dry matter basis has to be achieved through giving weightage not only to grain yields but also to fodder quantity as well as quality. So emphasis in research could be to look for these qualities in the cultivars and promote their cultivation for enhanced supplies of crop residues. Although many non-conventional feed resources have been in use in many parts of the country, the extent of such use is not exactly documented. Their documentation is absolutely essential in order to precisely assess the availability position. Further, there is need to have a documentation of the nutritional status and antinutritional factors that inhibit their usage. In the cultivated fodder production segment the use of multi-cut varieties can have significant contribution to fodder availability. In the forest lands many tree leaves have nutritional value well above the commonly available grasses in forests and degraded grazing and pasture lands. But very much less is known about their availability lesser on nutritional values. Tree leaves constitute quite a significant portion of livestock diet in arid and semiarid areas. Further in many parts of the country while feeding straws/stover, chaffing is not done thus leading to wastage and also more energy expenditure in chewing the unchaffed straw/stover. Mechanism for chaffed feeding should go a long way in reducing the wastage and energy conservation and use for other physiological functions of animals (Ramachandra et al, 2005).

Considerable amount of nutrients are available and even supplied to animals in rural as well as in urban areas in the form of kitchen wastes, brewery waste, left overs etc. But no information is available on this aspect. There is need to collect these data at micro level to make an assessment of availability of nutrients from this vital source. The livestock statistics which becomes available through census in 5 yearly intervals in terms of numbers and age groups has to be supplemented with average body weights of each age group. This will help in assessing the

requirement of feeds and fodder more precisely. This is also required in order to have an assessment of regional variation due to various types of livestock species available in the country.

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# A New Approach on the Estimation of Fair Value of Future Return from Present Income Vis-A - Vis Discounting Factor of Acquired Standing Trees

B. B. SHARMA\* AND M.M. GUPTA\*\*

“How valuable is my acquired standing tree”? is a question that is asked by every grower. Estimation of fair value of standing trees requires consideration of variations in heterogeneity in soil, sigmoidal tree growth, sigmoidal yield response, tree size, varieties, planting site, seasonal environment, biomass and timber produced, useful life estimates, market demand, supply, bank rates and inflation etc. It is generally accepted that the rate of bole growth, accumulation of biomass and yield decline as trees age.

It has been frequently stated that there can be no rule or formula for the determination of fair value for tree assessment purposes. Each case be considered on its own merit and the value arrived should be “just and right in each case”. It is not a matter of formulas but there must be judgment with proper consideration of relevant facts.

A study on highlighting grossly inappropriate value of compensation paid by Haryana government on acquired standing trees was undertaken for the first time in 2011 (Gupta et al.2011).The Government agency invariably deduct 75 % amount from the assessed value, the reason being advanced is onetime payment on account of earned bank interest and zero maintenance expenditure.

This study is an attempt to analyze the desirability of using a discount factor of 1/4th by the tree valuation agency (Director of Horticulture, 2001, Haryana) on the

assessed value of an acquired tree vis-a-vis yield, yearly income and girth patterns in the bearing life of fruit trees, bank rates on fixed deposits and effect of inflation on accumulated amount. Although the study is conducted on acquired trees in the state of Haryana, yet the results are applicable wherever the practice of onetime discounted payment is followed.

### Methodology

This paper is based on records of owners of the productive plantations of mango trees (grafted, *Mangifera indica*), during 2005 - 2012 in the course of preparation of valuation reports in acquired trees in legal cases. The fruit trees were of class 1 under scientific management with very good conditions of growth and fruit production and good size and appearance of fruits. Data were based on the averages of ten trees randomly selected in mango (*Mangifera indica*) in a yield class based on a age group as available from a location and averages from whole lots (14 classes x 10 trees) were estimated to study the yield pattern. The selection of trees was based on girth sizes which differed only within a range of 0.15 m (6.6 %). The age of trees was estimated from the revenue records as far as possible and also from the records of the tree owners and fellow growers including the purchase receipts from nurseries.

TABLE 1—LOCATIONS OF MANGO TREE ORCHARDS OF THIS STUDY

State	Place	No. of sites	Ownership
Haryana	Shikhopur (Gurgaon), Bari Thali and Thana Kalan, Sonapat), Oonchagaon, Cbandanvali. Sihi, Ajronda, Jharsently, Shahpur	15	Jain Temple Trust and private
U.P.	Hastinapur (Meerut)	2	Jain Temple Trust and private
Delhi	Mandi, Gadaipur (Mehrauli) Pansali (Alipur) villages, Shalimar Bagh (Pitampura)	7	Private

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The yield response of a tree is given by

$$Y_t = Y_0 + (dy/dt) t$$

where  $Y_t$  = yield at time 't',  $Y_0$  = yield at time 'zero' i.e. when fruiting begins and  $dy/dt$  is the rate of increase of yield with time.

TABLE 2 EVALUATION OF A MANGO FRUIT TREE (DIRECTOR OF HORTICULTURE, 2001)

Basic value Non -recurring expenditure (Rs.)	Recurring expenditure per year (Rs.)	Age at which the tree comes In to bearing (year)	Average bearing life in (years)	Yearly Income from Class-I tree (Rs.)	Yearly discounted value of Class-I tree (Rs.)
50	260	5 <sup>th</sup>	50	2000	500

The formula used by Director of Horticulture, 2001 is:

Net Present value=

Basic value +( Remaining years × Annual Income ×  $\frac{1}{4}$ ) +  
Fuel or timber value.

In order to estimate the time value of money from the effect of bank interest on fixed deposit and the effect of rate of inflation on accumulated gains from bank rates, the information supplied by Central Bank of India and Economic Adviser, Government of India was utilized. The equation  $FV = PV (1 + r)^n$  gives the future value (FV) of an investment's present value (PV) accruing at a fixed interest rate (r) for n years.

TABLE 3—AVERAGE BANK AND INFLATION RATES FROM 2003 TO 2012

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bank rates %	5	5.50	6.25	7	8.25	8.75	8.31	8.22	9.50	9.00
Inflation rates %	5.46	6.48	4.47	6.59	4.74	8.05	3.81	9.56	7.75	7.81

### Results and Discussion

In an acquired mango tree of class 1, the value of Rs 2000 is discounted by  $\frac{1}{4}$ <sup>th</sup>. Table 4 shows the growth of principal discounted amount of Rs 500 in a given year in future based earnings from bank rates and effect of inflation on earnings (from bank rates). The value of Rs 500 was reduced to Rs 497.7(2003), 495.1 (2004) and 493.3 (2010). Meager gains ranging from Rs 3.5 to Rs 22.5 were noticed

in 2005 to 2009. From 2003 to 2012, the principal amount of Rs 500 could gain an increased value by Rs 69.15 only. It is thus clear that onetime payment suffers from dynamic inconsistency as a result of fluctuations in rates of inflation and bank rates. It shows misprediction of future value of present discounted amount by assuming that growth of current value of money will remain at present levels highlighting arbitrariness in the payment of compensation to the farmer. The returns are too *volatile*.

TABLE 4—FUTURE VALUE OF CURRENT INVESTMENT (DISCOUNTED VALUE IS Rs. 500)

Future value of current investment Rs 500 In	Annual interest rate %	Annual inflation rate %	Effect of inflation on value of initial investment Rs	Total interest earned	Interest earned after inflation effect	Total future value of investment Rs
2003	5.00	5.46	27.30	25.00	-2.30	497.70
2004	5.50	6.48	32.40	27.5	-4.90	495.10
2005	6.25	4.47	22.35	31.25	8.90	508.90

TABLE 4—FUTURE VALUE OF CURRENT INVESTMENT (DISCOUNTED VALUE IS Rs. 500)—Contd.

Future value of current investment Rs 500 In	Annual interest rate %	Annual inflation rate %	Effect of inflation on value of initial investment Rs	Total interest earned	Interest earned after inflation effect	Total future value of investment Rs
2006	7.00	6.59	32.95	35.00	2.05	502.05
2007	8.25	4.74	23.70	41.25	17.55	517.55
2008	8.75	8.05	40.25	43.75	3.50	503.50
2009	8.31	3.81	19.05	41.55	22.50	522.50
2010	8.22	9.56	47.80	41.10	-6.70	493.30
2011	9.50	7.75	38.75	47.50	8.75	508.75
2012	9.00	7.81	39.05	45.00	5.95	505.95

Yield estimates on tree basis are essential not only from marketing point of view but also for precise planning for the producers as well as for tree acquiring agencies. When fruit yield is plotted against time, a simple sigmoid or “S”-shaped curve was obtained (Fig.1). The analysis of this curve shows three distinct regions, indicating a lag phase, a log phase and a slow down phase which results as limiting factors are encountered until a level

is approached a asymptotically. The middle region of the curve shows the grand period or exponential period of increase in yield up to 55 years after which yield starts declining. The trees exhibit maximum rate of increase in yield from 5<sup>th</sup> year to 35<sup>th</sup> year (6 kg/tree to 98 kg/tree). Similar simple sigmoid curves in fruit tree yields have been also reported in previous studies (Abutia, 1987-1990).

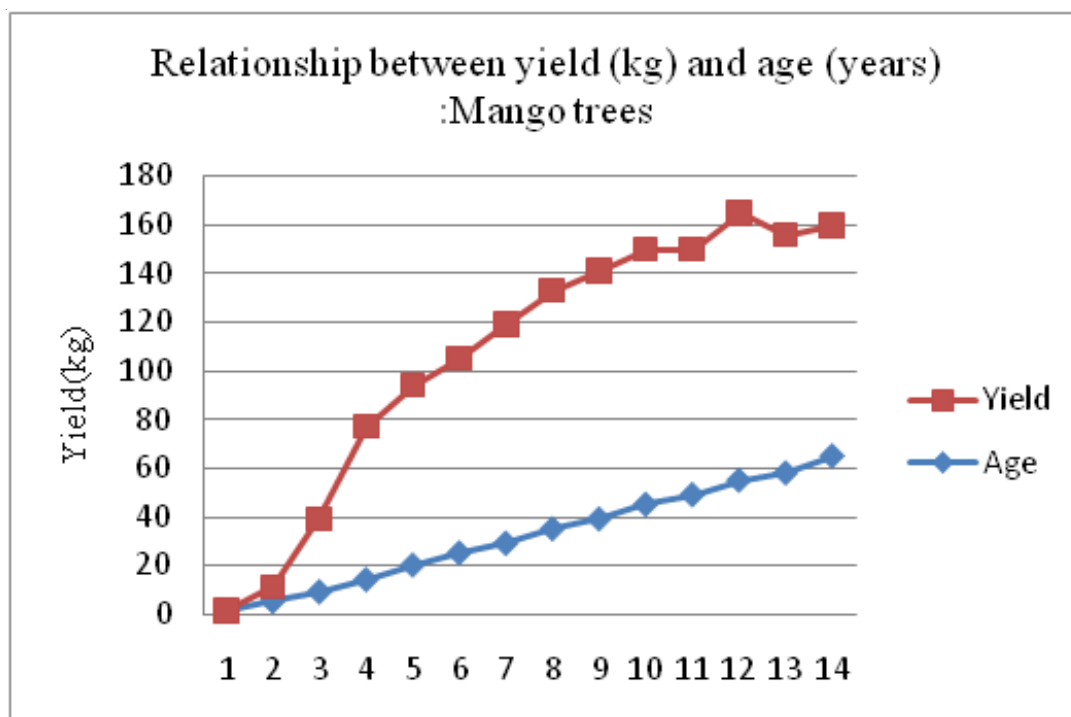


Fig. 1

In an analysis of estimating yearly income on acquired mango fruit trees as seen from sigmoid yield curve of this investigation, an anomalous situation is clearly seen in the methodology followed by Director of Horticulture, 2001. The trees yielding 6 kg to 101 kg are provided similar discounted values on yearly income i.e. Rs 500. When the yearly income is related with the age and yield of trees, the situation becomes further clear. As the tree advances in age, it is valued lower (Table 5). At the age of year 5, the

value of a kilogram of fruits is Rs 83.3 but when the tree reaches the age of 49, the rate per kilogram of fruits is reduced to Rs. 4.9. This is an inconsistency in the assessment of compensation in acquired trees as the compensation is determined based not on reason, or principle. This is a question of equity and is also a social issue which leads to social turmoil as has been witnessed in recent times.

TABLE 5—RELATIONSHIP BETWEEN AGE, YIELD AND YEARLY INCOME AND RATES FROM DISCOUNTED VALUE IN GRAFTED MANGO TREES

Serial No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Age (years)	1	5	9	14	20	25	29	35	39	45	49	55	58	65
Yield (kg)	0	6	30	63	74	80	90	98	102	105	101	110	98	95
Yearly Income (Rs.)	0	500	500	500	500	500	500	500	500	500	500	500	500	500
Rate per kg derived from discounted value (Rs.)	0	83.3	16.6	7.9	6.8	6.2	5.6	5.1	4.9	4.8	4.9	4.5	5.1	5.3

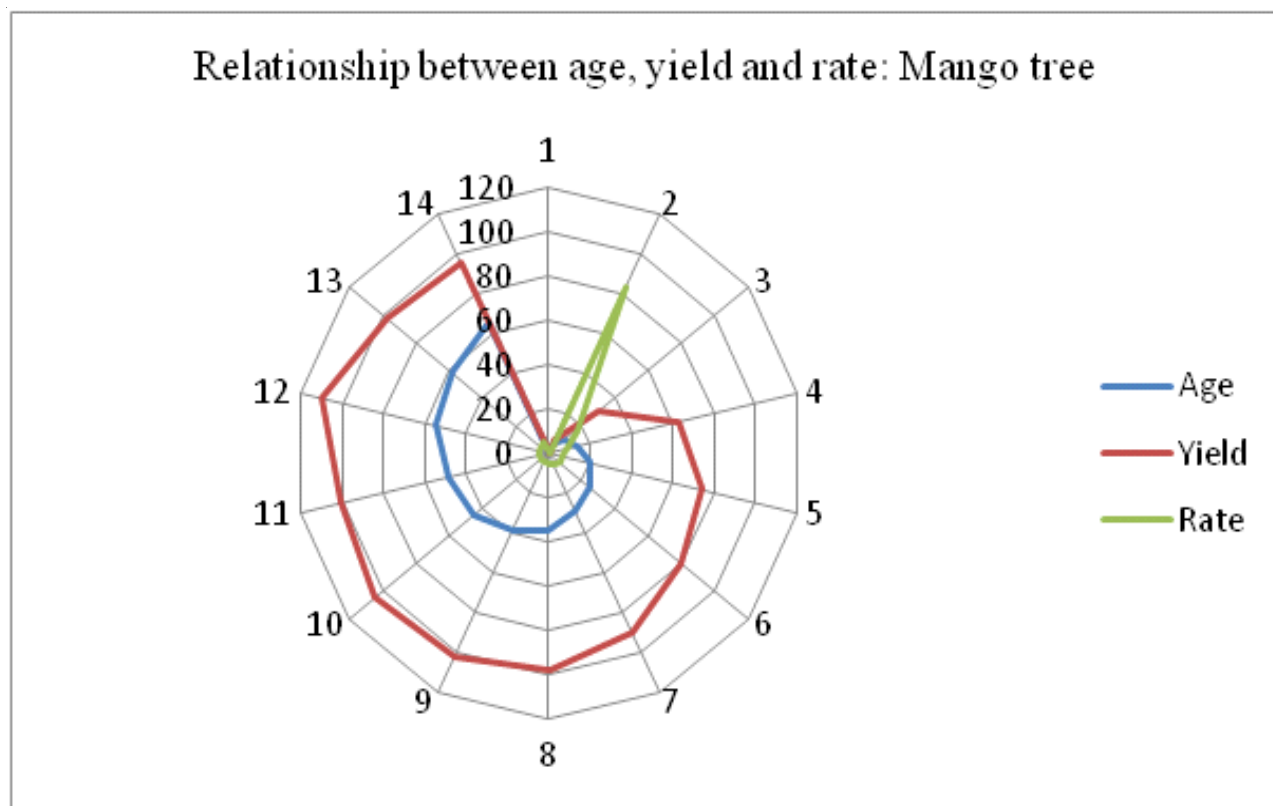


Fig. 2

It appears that there is an area that lacks transparency due to the absence of any explicit logic in the method adopted by Director of Horticulture, Haryana, 2001. Further, the income from fruits from standing trees has been kept constant irrespective of year of acquisition with no provision of escalation due to rise in market price of fruits as the same is calculated from the year of publication of official document i.e. 2001.

### Conclusions

Determination of fair value of acquired standing trees is the most pertinent question before the growers. It affects their income security. This paper presents a new logical approach in the determination of the fair value of fruits from standing trees as related with Haryana state. A discounting factor of  $1/4^{\text{th}}$  on assessed value of an acquired tree is used citing the argument of onetime payment. Our analysis shows this approach is not aligned to estimation of fair value of fruits from the standing mango trees. The value of Rs 500 was reduced to Rs 493.3 to Rs 497.7 in 2003, 2004 and 2010 as a result of effect of inflation on gains from bank rates on the principal amount of discounted value of Rs 500 in acquired mango trees. Further, yearly income from fruits from standing trees has been kept constant with no consideration of increase in wholesale price index, sigmoidal yield curve and age of a tree. The calculations are done from the year of publication of official document i.e. 2001.

One solution in providing fair value to standing trees for fruits may lie in eliminating association between both factors i.e. an increasing wholesale price index and the discounting of the future stream of income because both tend to move in opposite directions. But in certain situations their effects may be equalizing when the bank rates of interest on fixed deposits and the changes in the

wholesale price index may not differ much. It is expected that the determination of the fair value of fruits may be more realistic in the above situation. But ignoring both the factors i.e. discounting and bank rates becomes more important under wide and unpredictable fluctuations in bank deposit rates and in the wholesale price index. This implies that the farmer may be paid compensation equal to the aggregate value of the future stream of income from the produce at current market price without any discounting and without any provision for increase in the market price of fruits in future.

It is concluded that a possible solution to the problem may be to ignore both factors (discounting and inflation) and to consider the aggregate value of the future stream of income from the produce at current market prices over the remaining bearing life of a fruit tree as a fair value.

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## Crisis in Indian Agricultural Sector

JYOTTI\* AND DHARAM PAL\*

### Abstract

As about 70 per cent of population is supported by agriculture, the growth of agriculture and allied sectors is very important. But the economic liberalisation has adversely affected Indian agriculture sector. The present paper attempts to examine the crisis in Indian agricultural sector. Based on secondary data, the paper brings out that during the period of liberalisation, the growth rate of agriculture and allied sectors remain relatively very low as compared to the overall GDP growth rate. Because of this, the gap in per worker productivity between agriculture and non-agricultural sector has increased significantly. Farming has become an unviable activity, particularly for the small and marginal farmers. There are main two reasons for the deceleration in the growth of agricultural sector. Firstly, stagnation or slow growth in agriculture production and secondly, slow growth in the area under cultivation. The growth of total food-grains production in the period from 1970-71 to 1990-91 was recorded nearly two times higher than the period from 1990-91 to 2010-11. The stagnation in the growth rate of agricultural production is due to the decline in the rate of gross capital formation in agriculture. Consequently there has been very small expansion in the area under irrigation and other infrastructure for agriculture. Because of the stagnation to slow growth in agricultural sector the farming community is under debt. A recent nation-wide survey of NSSO (59th round) also brings out the fact that almost 50 per cent of the farm households are indebted. But the proportion is much higher in states like Andhra Pradesh (82 per cent), Tamil Nadu (74.5 per cent), Punjab (65.4 per cent) and Kerala (64.4 per cent), which are relatively highly investing state. This survey also reveals that although there is more than four decades of bank nationalisation, yet the non-institutional sources are providing a significant share i.e. 42.3 per cent of the total loan to a farm household on an average basis at all India level and rest (57.7 per cent) from the institutional sources. The dominance or substantial dependence of farmers on non-institutional sources of credit make this credit burdensome, as interest rates charged are very high. The burden of indebtedness has been continuously compelling the farmers to commit suicides. In the period of fourteen years (1997 to 2010), as

many as 2,32,464 farmers committed suicide in India. It indicates the alarming fact that on an average more than 16,600 farmers committed suicide every year over the last one and half decade.

Agriculture sector is vital for the food and nutritional security of the nation. The sector remains the principal source of livelihood for more than 58% of the population though its contribution to the national GDP has declined to 14.2% due to high growth experienced in industries and services sectors. Compared to other countries, India faces a greater challenge, since with only 2.3% share in world's total land area, it has to ensure food security of its population which is about 17.5% of world population. This leads to excessive pressure on land and fragmentation of land holdings (Gol, 2010-11). During the last two decades, especially since the earlier 1990s as a part of the neo-liberal wave of globalization, there has been a general tendency of increase in the share of households and the area cultivated by the small (more than 2.5 acres and upto 5 acres) and marginal (upto 2.5 acres) farmers and the average size of land holdings is on the decline (Reddy, 2006). Small and marginal holdings taken together constituted 83.29 per cent of the total number of holdings in 2005-06 as against 81.80 in 2000-01 with operated area of 41.14 per cent in 2005-06 as against 38.86 per cent in 2000-01 (Gol, 2010-11).

It is true that the green revolution provided a breakthrough in agricultural production in India which has helped in transforming the subsistence agriculture into the commercial one. Since the modern technology is capital intensive, it has its immense impact on cost structure in Indian agriculture. The farm returns improved significantly till early eighties. After that, the interaction of escalating costs and stagnant productivity as well as non-remunerative prices of farm produce led to deteriorate the conditions of farm community (Verma et al. 2011).

The crisis in agriculture underwent in the late 1980s and the economic reforms beginning in the 1990s have only deepened it. In 1991, when India officially went along the structural adjustment path and introduced agriculture series of neo-liberal economic reforms, there was apparently not much explicit by way of reforms in

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agriculture. But very soon, at least by the mid-1990s when the WTO was in place, there did unfold many policy reforms directly addressed to agriculture. International trade has been liberalized. The average tariffs on agricultural products, which stood at over 100 per cent in 1990, were brought down to 30 per cent by 1997 and targeted to come down further (Reedy, 2008). All types of subsidy have been considerably reduced. Fertilizer subsidy, which amounted to 3.2 per cent of GDP and 6 per cent of the union revenue expenditure in 1990-91, was reduced to 2.5 per cent and 5 per cent, respectively by 1997-98 (Acharya, 2004). It was further reduced to 0.69 per cent of GDP by 2003-04 (Sen and Bhatia, 2004).

There has been steep increase in the costs of farming across the country, which is substantially due to the reforms. The fertilizer price index increased from 99 in 1990-91 to 228 in 1998-99 at a compound annual growth rate of 11 per cent. According to one estimate, fertilizers presently account for 29 per cent of farmers' input costs (Acharya, 2004). At the same time, farm business income (FBI), which was on the rise in the 1980s, started declining in the 1990s. The growth of FBI per hectare decelerated from 3.21 per cent in 1980s to 1.02 per cent in the 1990s. The growth of real FBI per cultivator declined from 1.78 per cent in 1980s to 0.03 in 1990s (Sen and Bhatia, 2004).

Since 1970, terms of trade turned against the agriculture sector. The farmers have to purchase the inputs from the market at higher prices and they have to sell their produce at relatively lower prices. The farmers' dependence on the borrowed funds has increased. Reports of distress among the farmers coming from the different parts of India are causing much concern. Extreme manifestation of such distress occurs in the form of suicides by the farmers. Distress of the farmers in India is closely linked to the new liberal policy regime implemented in the country in the recent past. Introduction of liberalization and globalization during the early 1990s further increased pressure on the agrarian economy. The new economic policy advocates withdrawal of the state from the economic sphere, leaving it to the logic of market forces. While it might be a good thing for the industry to be allowed to freely import the latest technology from abroad or have a competitive atmosphere, leaving the agriculture sector to the vagaries of free market could prove disastrous (Jodhka, 2006). Climate and weather patterns have not supported agricultural growth and weather induced instability continued to inflict misery on the farmers.

The above analysis highlights the fact that Indian agricultural sector is in severe crisis. In the present paper, an attempt has been made to analyse the crisis in Indian agricultural sector. For this purpose, the growth of agricultural production and its productivity on one hand

and on the other hand the burden of indebtedness and suicidal tendency among the farmers have been analysed.

The present paper is a macro level analysis of agricultural crisis in India. For the purpose of the study, the secondary data has been used. To examine the agricultural growth and productivity in India, the data has been collected from the various issues of Economic Surveys and from the Annual Report (2010-11) of the Ministry of Agriculture. While the information regarding the indebtedness and suicidal tendency among the farmers has been taken from NSSO's 59th round report and National Crime Records Bureau's (NCRB) reports respectively. To compute the results the data has been interpreted with the help of some mathematical tools i.e. average, percentage and annual growth rate. This paper is divided into three sections. Section I examines the growth of agricultural sector through its annual average growth rate, food-grains production and pattern of land utilisation in Indian agricultural sector. Section II deals with the burden of indebtedness and suicidal tendency among the farmers. Section III is devoted to conclusions and policy implications.

## Section I

As about 70 per cent of population is supported by agriculture, the growth of agriculture and allied sectors is very important. But the economic liberalisation has adversely affected Indian agricultural sector. The most prominent manifestation of this is in the drastic decline in the growth rate of food-grains. The rate of growth of agricultural output was gradually increasing during the period of 1950-1990, and it was more than the rate of growth of the population. Thus India became self-sufficient in food and started exporting wheat and rice. But during the period of liberalisation, the growth rate of agriculture and allied sectors remain relatively very low as compared to the overall GDP growth rate. Table 1 highlights that the agricultural and allied sectors experienced the maximum growth rate of 4.7 per cent during the 8th five year plan (1992-97) while the overall GDP growth rate in this plan recorded to be 6.7 per cent. The average annual growth rate of agriculture and allied sectors during the ninth and tenth plan period (1997- 98 to 2006-07) was 2.1 per cent and 2.6 per cent respectively, while the overall GDP growth rate during this period was 5.5 per cent and 7.8 per cent respectively. Because of this, the gap in per worker productivity between agriculture and non-agricultural sectors has increased significantly. Farming has become an unviable activity, particularly for the small and marginal farmers (Dev, 2008).

TABLE 1—ANNUAL AVERAGE GROWTH RATE FROM 7TH FIVE YEAR PLAN TO 11TH FIVE YEAR PLAN

(in per cent)

Five Year Plans	Overall GDP Growth Rate	Agriculture and Allied Sectors
7 <sup>th</sup> Plan (1985-90)	6.0	3.2
Annual Plan (1990-92)	3.4	1.3
8 <sup>th</sup> Plan( 1992-97)	6.7	4.7
9 <sup>th</sup> Plan (1997-2002)	5.5	2.1
10 <sup>th</sup> Plan (2002-07)	7.8	2.6
11 <sup>th</sup> Plan (2007-12)		
2007-08	9.8	5.8
2008-09	4.9	-0.1
2009-10	9.1	0.4
2010-11	8.6	5.4

NOTE: Growth Rates up to 2004-05 are at 1999-2000 prices and thereafter at 2004-05 prices.

Source: Economic Survey 2010-11, Ministry of Agriculture, 2010.

In the first year (2007-08) of the current five year plan (2007-2012), the agriculture and allied sectors had achieved an impressive growth of 5.8 per cent, even then this growth rate was much below the overall GDP growth rate (9.8 per cent) in same year. However, this high growth in agriculture and allied sectors could not be maintained in the following two years and agriculture sector growth fell into the negative zone of -0.1 per cent in 2008-09. The decline in growth of agricultural GDP was primarily due to the fall in the production of agricultural crops such as oil seeds, cotton, jute and mesta and sugarcane. In 2009-10, the growth marginally recovered to 0.4 per cent primarily due a good *rabi* crop. Things are looking bright in the current year with a relatively good monsoon and the agriculture sector is expected to grow at 5.4 per cent as per the 2010-11 advance estimates. As a whole the agricultural growth in the first four years of the current plan is estimated to be at 2.87 per cent. In order to achieve the plan target of average 4 per cent per year, the agriculture sector needs to grow at 8.5 per cent during 2011-12.

There are main two reasons for the deceleration in the growth of agricultural sector. Firstly, stagnation or slow growth in agriculture production and secondly, slow growth in the area under cultivation.

The analysis of decadal growth in food-grains production during 1960-61 to 2010-11 has been shown in Table 2. The table revealed that since 1960-61 the food-grains production registered a rising trend and touched a record level of 232.1 million tonnes in 2010-11. The growth of total foodgrains production during the period of 1970-71 to 1990-91 was recorded nearly two times higher at 62.7 per cent than the growth in the period from 1990-91 to 2010-11 which is recorded only at 31.6 per cent. The table also indicates the disturbing fact that only two crops-paddy and wheat-had experienced high growth during the period. While other crops experienced stagnation or marginal growth in the same period.

TABLE 2—FOODGRAINS PRODUCTION

(in Million Tonnes)

Crops	Year						Growth (in Per cent)	
	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11	1990-91 over 1970-71	2010-11 over 1990-91
Paddy	34.6	42.2	53.6	74.3	85.0	94.0	76.1	26.5
Wheat	11.0	23.8	36.3	55.1	69.7	81.5	131.5	47.9
Coarse Cereals	23.7	30.6	29.1	32.7	31.0	40.1	6.9	22.6
Pulses	12.7	11.8	10.6	14.3	11.0	16.5	21.2	15.5
<b>Total Foodgrains</b>	<b>82.0</b>	<b>108.4</b>	<b>129.6</b>	<b>176.4</b>	<b>196.7</b>	<b>232.1</b>	<b>62.7</b>	<b>31.6</b>

Source: Economic Survey, Various Issues.



The stagnation in the growth rate of agriculture production is due to the decline in the rate of gross capital formation in agriculture. The gross capital formation in agriculture as percentage of GDP used to be 3.1 per cent in 1970-71 and 3.8 per cent in 1980-81 at 1980-81 prices. This declined consistently from 1.9 per cent in 1990-91 to 1.6 per cent in 1995-96 and 1.4 per cent in 1999-2000 and continues to be low in the subsequent period. The share of public investment in gross capital formation in agriculture is declining since 1980-81 (Gill, 2009). Consequently there has been very small expansion in the area under irrigation and other infrastructure for agriculture.

Table 3 revealed that growth rate of net sown area has declined from 12.2 per cent to -0.4 per cent during

1960-61 to 2007-08. Similarly the growth rate of gross cropped area has declined from 15.8 per cent to 5.7 per cent. The net sown area has remained almost same since 1970's. It implies the fact that in India there is not any possibility to raise area under cultivation. The main reason behind it the growing pressure of population on land and another is increasing urbanisation and because of that the larger share of land is coming under residence day by day. The cropping intensity has increased from 111.1 to 139.0 during the period of 1950-51 to 2010-11. The growth rate of gross irrigated area and net irrigated area declined from 36.4 per cent to 14.6 per cent and 25.9 per cent to 13.1 per cent respectively during the period of 1970-71 to 2007-08.

TABLE 3—PATTERN OF LAND UTILISATION IN INDIAN AGRICULTURE

(Area Million Hectares Growth : Per cent)

Year	Gross Cropped Area		Net Sown Area		Cropping Intensity		Gross Irrigated Area		Net Irrigated Area	
	Area	Growth	Area	Growth	Area	Growth	Area	Growth	Area	Growth
1950-51	131.9	—	118.7	—	111.1	—	22.6	—	20.9	—
1960-61	152.8	15.8	133.2	12.2	114.7	3.2	28.0	23.9	24.7	18.2
1970-71	165.8	8.5	140.9	5.8	117.7	2.6	38.2	36.4	31.1	25.9
1980-81	172.6	4.1	140.3	-0.4	123.1	4.6	49.8	30.4	38.7	24.4
1990-91	185.7	7.6	143.0	1.9	129.9	5.5	63.2	26.9	48.0	24.0
2000-01	185.3	-0.2	141.4	-1.1	131.1	0.9	76.2	20.6	55.1	14.8
2007-08	195.8	5.7	140.9	-0.4	139.0	6.0	87.3	14.6	62.3	13.1

Source: Ministry of Agriculture, Government of India.

## Section-II

The fast increase in input prices and slow increase in output prices are causing decline in the profitability of agricultural sector leading to fall the farming community into indebtedness. Darling (1925) wrote, "the bulk of the cultivators of the Punjab are born in debt, live in debt and die in debt." Though this was written eight decades back, the problem of indebtedness not only remained true today but it has aggravated further in the recent years. A recent nation-wide survey of NSSO (59th round) also brings out the fact that almost 48.6 per cent of the farmer households are indebted (Table 4). But the proportion is much higher in states like Andhra Pradesh (82.0 per cent), Tamil Nadu (74.5 per cent), Punjab (65.4 per cent), Kerala (64.4 per cent), Karnataka (61.6 per cent), Maharashtra (54.8 per cent), Haryana (53.1 per cent), Rajasthan (52.4 per cent) and Gujarat (51.9 per cent) which are relatively high investing states of India. However, hilly states and

economically backward states have low proportion of farmers under debt.

As far as average debt per farm household in India is concerned, it is Rs. 12,585 on an aggregate level. The state-wise study of the average debt per farm household shows that per farmer debt is the highest in Punjab state (Rs. 41,576) followed by Kerala (Rs. 33,907), Andhra Pradesh (Rs. 23,965), Tamil Nadu (Rs. 23,963), Rajasthan (Rs. 18,372), Karnataka (Rs. 18,135), Maharashtra (Rs. 16,973), Gujarat (Rs. 15,526) and Madhya Pradesh (Rs. 14,218). These states have higher per farmer debt on an average basis than all India average. This shows that agriculturally developed states are reporting high percentage of farmers under debt and also high per farm household debt than agriculturally backward states. This reflects the need of higher credit requirements for modern and commercial agriculture.

TABLE 4—INDEBTEDNESS AMONG FARMER HOUSEHOLDS IN INDIA

State	Percentage of Indebted Farmer Household	Average Debt Per Farm Households (In Rs.)
Andhra Pradesh	82.0	23,965
Arunachal Pradesh	5.9	493
Assam	18.1	813
Bihar	33.0	4,476
Chhattisgarh	40.0	4,122
Gujarat	51.9	15,526
Haryana	53.1	26,007
Himachal Pradesh	33.4	9,618
Jammu Kashmir	31.8	1,903
Jharkhand	20.9	2,203
Karnataka	61.6	18,135
Kerala	64.6	33,907
Madhya Pradesh	50.8	14,218
Maharashtra	54.8	16,973
Manipur	24.8	2,269
Meghalaya	4.1	72
Mizoram	23.6	1,876
Nagaland	36.5	1,032
Orissa	47.5	5,871
Punjab	65.4	41,576
Rajasthan	52.4	18,372
Sikkim	38.4	2,053
Tamil Nadu	74.5	23,963
Tripura	49.2	2,977
Uttar Pradesh	40.3	7,425
Uttaranchal	7.2	1,108
West Bengal	50.1	5,237
Group of UTs	50.8	10,931
<b>All India</b>	<b>48.6</b>	<b>12,585</b>

Source: NSSO (2005), 59 Round.

Table 5 highlights that, although there is more than four decades of bank nationalisation, yet the non-institutional sources are providing 42.3 per cent of the total loan to a farm household on an average basis at all India level and rest (57.7 per cent) comes from the institutional sources. Among the institutional sources, the

majority of the lending comes from banks (35.6 per cent) followed by cooperative societies (19.6 per cent) and government (2.5 per cent). While among the non-institutional sources, the money lenders are lending more than one-fourth (25.7 per cent) to the farmers followed by others (11.5 per cent) and traders (5.2 per cent) respectively.

TABLE 5—SOURCES OF LANDING AMONG THE FARMERS IN INDIA

(in Percentage)

State	Institutional Sources			Non-Institutional Sources				Grand Total	
	Banks	Co-op. Societies	Govt.	Total	Money Lenders	Traders	Other		
Andhra Pradesh	20.0	10.4	1.0	31.4	53.4	4.8	10.4	68.6	100.0
Arunachal Pradesh	20.8	0.0	6.1	26.9	0.0	15.9	57.2	73.1	100.0
Assam	27.8	2.7	7.0	37.5	15.5	12.0	35.0	62.5	100.0
Bihar	37.0	2.5	2.2	41.7	32.8	1.1	24.4	58.3	100.0
Chhattisgarh	50.5	20.6	1.3	72.4	13.0	4.2	10.4	27.6	100.0
Gujarat	27.2	41.8	0.5	69.5	6.5	4.4	19.6	30.5	100.0
Haryana	42.6	23.9	1.1	67.6	24.1	3.1	5.2	32.4	100.0
Himachal Pradesh	47.6	11.6	6.1	65.3	7.2	5.5	22.0	34.7	100.0
Jammu Kashmir	54.3	0.2	13.1	67.6	1.1	15.5	15.8	32.4	100.0
Jharkhand	55.7	4.5	3.9	64.1	19.0	1.7	15.2	35.9	100.0
Karnataka	50.1	16.9	1.9	68.9	20.0	1.9	9.2	31.1	100.0
Kerala	49.1	28.3	4.9	82.3	7.4	1.7	8.6	17.7	100.0
Madhya Pradesh	38.1	16.9	1.9	56.9	22.6	9.0	11.5	43.1	100.0
Maharashtra	34.1	48.5	1.2	83.8	6.8	0.8	8.6	16.2	100.0
Manipur	16.7	0.0	1.5	18.2	32.9	4.0	44.9	81.8	100.0
Meghalaya	0.0	0.0	6.0	6.0	12.8	0.3	80.9	94.0	100.0
Mizoram	49.9	3.1	24.3	77.3	0.0	3.3	19.4	22.7	100.0
Nagaland	53.6	7.7	7.5	68.8	0.3	15.3	15.6	31.2	100.0
Orissa	43.7	18.1	13.0	74.8	14.8	0.8	9.6	25.2	100.0
Punjab	28.4	17.6	1.9	47.9	36.3	8.2	7.6	52.1	100.0
Rajasthan	27.0	5.9	1.3	34.2	36.5	19.2	10.1	65.8	100.0
Sikkim	23.0	0.0	34.8	57.8	7.3	22.1	12.8	42.2	100.0
Tamil Nadu	28.1	23.3	2.0	53.4	39.7	0.4	6.5	46.6	100.0
Tripura	60.5	2.8	16.4	79.7	2.0	3.9	14.4	20.3	100.0
Uttar Pradesh	51.2	6.7	2.4	60.3	19.1	2.9	17.7	39.7	100.0
Uttaranchal	39.8	4.8	31.5	76.1	5.9	1.7	16.3	23.9	100.0
West Bengal	28.5	19.2	10.3	58.0	13.0	10.7	18.3	42.0	100.0
<b>All India</b>	<b>35.6</b>	<b>19.6</b>	<b>2.5</b>	<b>57.7</b>	<b>25.7</b>	<b>5.2</b>	<b>11.4</b>	<b>42.3</b>	<b>100.0</b>

Source: NSSO (2005), 59 Round.

Among the states having high debt, the share of non-institutional sources is more in Andhra Pradesh (68.6 per cent), Rajasthan (65.8 per cent), Punjab (52.1 per cent) and Tamil Nadu (46.6 per cent) than the share of non-institutional sources of loan at India level (42.3

per cent). While other high debt states i.e. Haryana (32.4 per cent), Karnataka (31.1 per cent), Gujarat (30.5 per cent), Kerala (17.7 per cent) and Maharashtra (16.7 per cent) are having lesser share of non-institutional debt.

The dominance or substantial dependence of farmers on non-institutional sources of credit make this credit burdensome, as interest rates charged on it are very high (Gill, 2009). The non-institutional sources were mainly approached by the farmers due to lack of security assets with them, frequent needs, inadequate supply of institutional credit, undue delays, sophisticated procedure and malpractices adopted by institutional lending sources (Singh and Sekhon, 2005). Due to ill-effects of non-institutional credit, provision of institutional credit for agricultural purposes has assumed greater significance in recent years (Sankaraiah and Naidu, 1983).

The burden of indebtedness has been continuously compelling the farmers to commit suicides. By and large, the incidence of suicides has been higher among the small and marginal farmers, which have been moving from subsistence agriculture to the high value crops with a

strong motivation to improve their social and economic status (Rao and Gopalappa, 2004).

The table 6 shows that in the period of fourteen years (1997 to 2010), as many as 2,32,464 farmers committed suicide in India. It also indicates the alarming fact that on an average more than 16,600 farmers committed suicide every year since the last one and half decade. It means that every seventh suicide in the country is a farm suicide. The number has more or less remained steady at around 16000 to 18000 per year over the period. However, the years 1998, 2002, 2004 and 2009 have experienced a sharp increase in the number of suicides from the previous year. The average number of farm suicides per year in the seven years period from 2004 to 2010, is reported at 1,18,592 which is substantially higher than the average of 1,13,872 per year for the previous seven years period from 1997 to 2003. The suicide rate is somewhat constant due to increasing base of general population.

TABLE 6—NUMBER OF FARMERS' SUICIDE AND ALL SUICIDES IN INDIA, 1997-2010

Year	Farmers' Suicide		All Suicide	
	Number	As a Per Cent of All Suicides	Number	Suicide Rate (per 1,00,000 population)
1997	13,622 (100.0)	14.21	95,829 (100)	10.0
1998	16,015 (118)	15.29	104,713 (109)	10.8
1999	16,082 (118)	14.54	110,587 (115)	11.2
2000	16,603 (122)	15.29	108,593 (113)	10.6
2001	16,415 (121)	15.13	108,506 (113)	10.6
2002	17,971 (132)	16.28	110,417 (115)	10.5
2003	17,164 (126)	15.48	110,851 (116)	10.4
2004	18,241 (134)	16.04	113,697 (119)	10.5
2005	17,131 (126)	15.04	113,914 (119)	10.3
2006	17,060 (125)	14.44	118,112 (123)	10.5
2007	16,632 (122)	13.56	122,637 (128)	10.8
2008	16,196 (119)	12.96	125,017 (130)	10.8

TABLE 5 —NUMBER OF FARMERS' SUICIDE AND ALL SUICIDES IN INDIA, 1997-2010—Contd.

Year	Farmers' Suicide		All Suicide	
	Number	As a Per Cent of All Suicides	Number	Suicide Rate (per 1,00,000 population)
2009	17,368 (127)	13.66	127,151 (133)	10.9
2010	15,964 (117)	11.86	134,599 (140)	11.4
<b>Total Number of Suicide in 2,32,464 the Period of 1997-2010</b>		<b>14.49</b>	<b>1,604,623</b>	—

### Section-III

As about 70 per cent of population is supported by agriculture, the growth of agriculture and allied sectors is very important. But the economic liberalisation has adversely affected Indian agriculture sector. The most prominent manifestation of this is in the drastic decline in the growth rate of food grains. The rate of growth of agricultural output was gradually increasing in 1950-1990, and it was more than the rate of growth of the population. Thus India became self-sufficient in food and started exporting wheat and rice. But during the period of liberalisation, the growth rate of agriculture and allied sectors remain relatively very low as compared to the overall GDP growth rate. The average annual growth rate of agriculture and allied sectors since the ninth plan period (1997-98) remained nearly at 2 to 2.5 per cent, while the overall GDP growth rate during this period was more than 8 per cent. The gap in per worker productivity between agriculture and non-agricultural sector has increased significantly. Farming has become an unviable activity, particularly for the small and marginal farmers. There are main two reasons for the deceleration in the growth of agricultural sector. Firstly, stagnation or slow growth in agricultural production and secondly, slow growth rate in the area under cultivation.

The growth of total food-grains production in the period from 1970-71 to 1990-91 was recorded nearly two times higher than the period from 1990-91 to 2010-11. The stagnation in the growth rate of agricultural production is due to the decline in the rate of gross capital formation in agriculture. Consequently there has been very small expansion in the area under irrigation and other infrastructure for agriculture. Growth rate of net sown area has declined from 12.2 per cent to -0.4 per cent during 1960-61 to 2007-08. The growth rate of gross irrigated area and net irrigated area declined from 36.4 per cent to 14.6 per cent and 25.9 per cent to 13.1 per cent respectively during the period of 1970-71 to 2007-08.

Because of the stagnation or slow growth in agricultural sector the farming community is under debt. A recent nation-wide survey of NSSO (59th round) also brings out the fact that almost 50 per cent of the farm households are indebted. But the proportion is much higher in states like Andhra Pradesh (82 per cent), Tamil Nadu (74.5 per cent), Punjab (65.4 per cent) and Kerala (64.4 per cent), which are also states with relatively higher investment. This survey also reveals that although there is more than four decades of bank nationalisation, yet the non-institutional sources are providing 42.3 per cent of the total loan to an average farmer at all nation level. The dominance or substantial dependence of farmers on non-institutional sources of credit make this credit burdensome, as interest rates charged are very high. The burden of indebtedness has been continuously compelling the farmers to commit suicides. In the period of fourteen years (1997 to 2010), as many as 2,32,464 farmers committed suicide in India. It indicates the alarming fact that on an average more than 16,600 farmers committed suicide every year over the last one and half decade.

### Policy Implications

The above analysis indicates that because of the stagnation in Indian agricultural sector, farming community is under high burden of indebtedness which is compelling them to commit suicide. To improve the economic condition and overcome the problem of debt among the farmers, effective measures should be taken by the government, social organisations and farming community. To unshackle the obstacles of stagnation in agricultural sector, there is need of second green revolution especially in pulses and other commercial crops very shortly. Government should determine minimum support prices taking into account the cost of production and consumer price indices before the sown period of these crops and should provide crop insurance. To reboot the growth of agricultural sector, the government should spend more on R&D. To overcome the problem of non-availability of required amount of credit at proper time and reasonable rate of interest, the

government must exercise a strong check on the activities of non-institutional credit agencies and should provide institutional credit facilities to the farmers at low rate of interest with easy repayment facilities. To raise the income level of the farmers, agro-based or small-scale industries should be established in the rural areas on priority basis. There is an urgent need to educate the farmers about the subsidiary occupations and to provide loans at very low rate of interest for establishment of various income generating ventures. Quality education should be provided to the children of the farmers so that they may get jobs in the non-agricultural sectors and may help their parents and other family members in reducing their debt. Despite of committing suicide due to indebtedness the farmers should find out the ways to repay the debt. They should understand that suicide is not the only solution of the problem rather it put the other families members in more troubles and pains.

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“कृषि समस्याओं का  
विशेषज्ञों द्वारा  
समाधान”



नम्बर  
**1551**  
किसान काल सेन्टर  
मुफ्त  
फोन सेवा



कृषि मंत्रालय, भारत सरकार, नई दिल्ली

## C. Agro-Economic Research

### Impact of Emerging Marketing Channels in Agricultural Marketing-Benefits to Producer-Seller and Marketing Costs and Margins of Agricultural Commodities\*

#### Introduction :

The main activity of the farmer which mentioned in the draft report to first Five Year Plan is "The Purchase of the Agriculturists requirements and the sale of his produce are key activities in the business farming due to his inability to secure a fair deal of these two stages, the average agriculturist is denied the full fruits of his industry". So, dispose of the produce is the most important activity of a farmer, especially for small farmers, because they have small surpluses for marketing and weak bargaining capacity.

During the pre-green Revolution period, marketing of agricultural products was not a problem in India as the economy was at subsistence level and the farmer carried on agriculture mainly to satisfy his family consumption requirements. The advent of green revolution has increased sharply the total production of food grains owing to intensive and extensive cultivation. Even the small size of holdings are in a position to have surplus produces on their farms because of the adoption of modern agricultural practices on their farms. In case of large size of holdings, they have not only sufficient stocks of marketed surpluses but also keep some part of their marketable surplus as stocks for future sales in anticipation of further increase in prices. Thus the surpluses that have been generated in the agriculture and they have to be flow through various marketing channels involving numerous agencies such as producers, commission agents, wholesalers, retailers etc., until the produce passes on its way to the ultimate consumers. Thus, the importance of marketing for these agriculture produce has increased.

After liberalized policies came into existence, there has been a sea change in agricultural marketing arena. New channels in markets have taken place, ego Corporate Sector entered into agricultural marketing (Reliance etc.) These in return influenced the style of working of the agricultural departments across states in India. Therefore, after a two decades span, there is a lot of conceptual institutional changes taken place in agro marketing. . New marketing channels are competing with traditional ones. And the Indian Farmer has been influenced at large in several aspects.

#### The Problem :

Though the above traditional and modern marketing channels are helping the farmers to dispose of their surplus produce and getting remunerative prices, they suffer from one or other kind of market imperfections. That means, all are not complete full proof. Some of the defects envisaged in the marketing systems are un-official collection of produce from each lot in the name of samples, collection of staff of the market committees with buyers, commission agents, etc. So, the available market infrastructure is quite inadequate. In this context, a study is necessary to expedite the issues relating to agricultural marketing and to examine the efficacy of the emerging marketing channels vis-a-vis regular marketing channels, to find out the benefit to producer-seller and marketing costs and margins of agricultural commodities. So, the Ministry of Agriculture, Government of India entrusted this study to various Agro-Economic Research Centres under its fold. The Agro-Economic Research Centre, Visakhapatnam has taken up this study in the State of Andhra Pradesh, with the following objectives.

#### Objectives of the Study:

- (i) To examine the share of the farmer in the consumer rupee in emerging marketing models vis-a-vis, the traditional marketing channels.
- (ii) To examine the degree of market efficiency and incidence of post-harvest losses in emerging marketing channels vis-a-vis traditional marketing channels.
- (iii) To study the superior market practices and services provided by different agencies in the emerging marketing channels vis-a-vis traditional marketing channels and
- (iv) To study the constraints faced by the farmers and different market functionaries in the emerging marketing channels vis-a-vis traditional marketing channels.

#### Methodology and Sample Design :

The study is based on the primary and secondary data. The secondary data relating to the State marketing Act, bye-laws, regulations of Mandi committees' and documents

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of different marketing channels both for traditional and modern collected from respective market channels and from National Informative Centre for the chosen districts/ from where primary data is being collected. The rest of the study

is based on the primary data and collects from the different categories of respondent's viz., farmers, commission agents, retailers and consumers. The sample size is presented in the following table.

S.No.	Category of Respondents	Traditional Channels	Emerging Channels
1	Farmers	15	25
2	Commission Agents	5	--
3	Retailers	5	--
4	Consumers	5	5
<b>Total</b>		<b>30</b>	<b>30</b>

Two crops are taken one from Vegetables group i.e. Brinjal and one from Fruits Group i.e. Banana. From each crop, the sample is 30 respondents of the above categories.

Regarding the new emerging marketing channels for the study, one emerging marketing channel should be studied and the contrast/control would be a regular/traditional marketing channel wherein the produce is sold in a regulated market. The same crop/. product should be studied in the emerging marketing and contrasted with the traditional marketing channel. The chosen emerging marketing channels is Rythu Bazar (Farmers' Market) in Visakhapatnam district. The Traditional Market Channel (poorna Market) is taken from the city of Visakhapatnam. The reference period for the study is 2009-10.

#### **Limitations of the Study :**

The important limitations of this study is that it relates to the data collected during the agricultural year 2009-10. In this data, the prices relating to wholesale, retail and Consumer for the chosen crops are included. These prices are going to change everyday and it is very difficult to standardize them. Further, the data collected depends upon the response to different quarries based on recall memory of the beneficiaries which is very difficult for them to memorize the everyday prices of the sample crops. Any how, the findings of the present study are expected to be true as such the precautions are taken and further the element has been minimized in collecting the required information at different levels and stages.

#### **Chapter Plan and Organization of the Report :**

The report is organized into five chapters. Chapter - I is the introduction, discusses the research problem, review of literature, objectives of the study, methodology, limitations of the study and chapter scheme. Chapter - II presents the background on agricultural market reforms, traditional and emerging marketing methods, reference to APMC Act revision etc., Chapter - III deals with the sampling, methodology and socio-economic profiles,

description of the study district/s including Agricultural profile, infrastructure, . income GSDP and MPCE, Chapter - IV gives the comparison of the benefits and constraints for the agents trading in the TMC and EMC and Chapter - V presents the Summary and Conclusions and Policy implications of the study.

## **II**

#### **Marketing Acts in A.P :**

Andhra Pradesh (A.P.) formed in 1956, for Andhra area, which followed 1933 Act of Madras composite state and for Telangana area, which followed 1339 Fasli. During the year 1957, an expert Committee was appointed in Madras for renewing the working of the marketing legislation, made following observations. According to them, still the middlemen play an important role in marketing of the Agricultural produce and their nature of exploitation depends upon the type of the crop and the status of the cultivator.

The above act did not reduce the influence of commission agent or middlemen and also had several defects in respect of commercial crops. But there were variations in the success and implementation of this act between the marketing areas of Andhra and Telangana.

#### **Integrated Andhra Pradesh Act :**

To bring efficiency in the marketing system, Andhra Pradesh Government enacted a legislation called the Andhra Pradesh (Agricultural produce and livestock) Markets Act, 1966 and brought together the laws that were in force from time to time in Andhra and Telangana areas.

**Composition of the Market Committee :** This part is dealt in section 5 of the Act. The market committee consists of 14 members and appointed by the government in consultation with the Director of Marketing and members are drawn from the categories of growers of agricultural produce, owners of livestock and products of livestock in the notified area. Among the fourteen members, eight

members are chosen from the categories of small farmers, other than small farmers and growers of livestock and livestock products. Regarding small farmers, there must be at least two members from this category and three members from among persons belonging to scheduled castes, scheduled tribes, backward' classes, minorities and women and two members from among the licensed traders in the notified area of the marketing committee. One member is appointed by the government from among the presidents or personal-in-charge of primary agricultural co-operative societies or co-operative marketing societies.

The other members in the marketing committee are the Assistant Director of marketing on whose jurisdiction the notified marketed area is located, and the Assistant Director of Agriculture or Assistant Director of Horticulture or Assistant Director of Animal Husbandry or Assistant Director of Fisheries on whose Jurisdiction the market committee is located is nominated to this by the concerned Head of the Department and Chair person of the Municipality and the Sarpanch of the Gram Panchayat is also member of the Marketing Committee.

#### **Sale procedure in Market Yards :**

There are two types of sale procedures of the agricultural commodities adopted in the regulated market yards viz., secret tender system and open action system. But the secret tender system is prevailing in most of the market yards through commission agents. In both the cases, the sale is made to the highest bidder as soon as the seller agrees for the price offered by the buyer. In the case of secret tender system there are three types of forms to be filled by the commission agents. Form I is prepared by the commission agents regarding the sale of agricultural products, Form II, relates to the prices offered by the buyers to the commodities and these forms put in the tender boxes which are brought to the market committee for verification. The tender forms are sorted out Commission Agent wise and produce will be knocked out in favour of highest bidder and Form III is prepared accordingly and handover to the Commission agents. If the farmer does not agree to the price offered to his produce, then the Commission Agent intimates same to the Market Committee in Form IV for cancellation of the bid.

#### **Co-operative Marketing :**

Co-operative Marketing society is another organization which collects the produce of all the members of the village, sells the produce, often processes it and then disposes it of in the mandi. Before 1954, separate co-operative marketing societies were established but later they have been changed into multipurpose societies and advance not only credit to the farmers but also marketing their surplus produce.

#### **Futures Trading in Agricultural Commodities :**

Due to globalization of trade in agricultural products, Indian farmer is exposed to above situation. Hence, as a part of agricultural marketing reforms, the Government of India permitted for resumption of futures trading in 1998 in the Agriculture, which was suspended in 1966.

The National Commodity and Derivative Exchange, Mumbai, has launched several projects in the states of Gujarat, Madhya Pradesh and Andhra Pradesh for enlightening the farmers with the concepts and benefits of futures trading and price risks on trading prior to harvesting. The main drawback of future trading which is extended to all agricultural commodities and products is exposing the Indian farmer to the vulnerable situation of globalized trade without taking into account of national interests and the interests of the producers, especially the small and marginal farmers. So, there should be adequate checks and protective methods for safeguarding the interest of the producers and consumers from unbridled exploitation by domestic and global market forces.

#### **Private Marketing :**

The Government of India, after careful studying of various problems and issues involved in the act and came to the conclusion that there is need to amend sections to the existing Andhra Pradesh (Agricultural Produce and Livestock) Market Act, 1966. And as such, the Governor of Andhra Pradesh has promulgated the Andhra Pradesh (Agricultural Produce and Livestock) Markets (Amendment) ordinance (A.P. Ordinance No.4 2005) 2005 and A.P. Ordinance No. 11 of 2005 suitably amending the provisions of the said markets Act, 1966 and the same have been published in Part IV-B, Extraordinary the Andhra Pradesh Gazette on 10th May, 2005 and 10-06.2005. Even for Markets Rules, 1969 (AP, Agricultural Produce and Livestock) which was issued under GO. Ms. No.1900 F&A Department, dt. 17-10.1969, there was proposals for amendments, so as to make provisions to start private marketing and Contract farming.

#### **Comparison between Ordinance No.4 of A.P. and Model Act (All India) :**

There are some similarities and dissimilarities between Ordinance No.4 of A.P. Act and AMC Model Act (All India). The ordinance No.4 of the A.P. enables any person to start a private market in a notified area within the state, while Model Act entitles to legal persons, growers and local authorities but it provides opening number of private markets. In A.P. ordinance No.4 has permitted the department to collect Rs. 50,000 to open a private market, whereas it is not specified in Model Act. There are clear details in A.P. ordinance regarding project proposal, budget aimed amenities and other aspects of a private market. The Model Act has clearly identified major features to be

implemented in the private market as: 1) transparency in pricing system and in transactions made 2) provision of extension services to farmers 3) ensuring payment for agricultural produce sold by farmers on same day 4) keeping data for public regarding arrivals of produce and the rates fixed to that produce and 5) a provision for Chief Executive Officer. In the Ordinance No.4 of A.P. Act it is referred clearly about the control of department of Agricultural Marketing and other provisions to establish and run an efficient and transparent market across A.P.

In the ordinance of A.P. Contract Farming (CF) is also proposed as well as in Model Act. Both have referred to delink of notified markets for transacting the agricultural produce from the farmers. It is laid down from the governing rules for C.F. in the A.P. Act. Before the sowing of crops, the agreement is to be taken between two parties, but for horticultural crops during flowering seasons. The C.F. is to pay market fee to marketing committee. The transactions with farmers should be recorded in a permanent register which may be inspected by marketing authorities. In the Model Act there are some model specifications of C.F. agreements which stand as the guiding tools.

#### **Contract Farming :**

Contract farming is being practiced in many states of India and there are many success stories for the crops such as Potato, tomato, ground nut and chillies in Punjab, Safflower in Madhya Pradesh, Oil palm in Andhra Pradesh, seed production contracts for hybrid seed companies in Karnataka, Cotton in Tamilnadu and Maharashtra. Another example of Contract farmers which is essential for the crops like Aloevara, where the leavers are to be processed within 2-3 hours after harvesting, has been taken up by M/s. Pujitha Biopharma in Chittoor district of Andhra Pradesh.

Therefore, the Department of Horticulture, Government of Andhra Pradesh, giving support to the contract growers on priority basis and providing the following incentives to them.

#### **Rythu Bazars :**

The Rythu Bazar/Farmers' Market system has come into existence in the Country. It is unique experiment in the agricultural marketing organizations by way of eliminating the middlemen and allows the farmers to sell their produce directly to the consumers at reasonable rates fixed everyday, thereby both the farmers and the consumers are benefited. It is one of the emerging marketing channel which has been selected for the study of impact of emerging marketing channels in agricultural marketing on the ground that it reduces the transaction costs and ensure high margins to the farmers by way of eliminating the intermediaries or middlemen which are previously taken by them in the regular marketing channels such as regulated markets or other non-formal channels.

### **III**

#### **Profile of Andhra Pradesh (A.P.) and Visakhapatnam District :**

##### **Location, Population and Occupation :**

A.P. formed in 1956 as 4th largest state and had 7.6 crores population in 2001. Visakhapatnam possess two more names 1. Vizag and 2. Waltair and located as second extreme Coastal district of A.P. with population of 38.17 lakhs in 2001. The density of Vizag was higher than A.P. in 2001. The literacy rates were low in Visakhapatnam district compared to A.P. The scheduled Tribe population was higher than states average tribal population vice-versa for scheduled castes population. The work participation was 45.80 per cent for A.P. and 41.90 per cent for Vizag district. The primary sector contributed 62.16 per cent for A.P. and 53.37 per cent in Vizag district. This is because of the industrial effect in Visakhapatnam, the agricultural sectors contribution took place at lower level.

##### **Agricultural Conditions in A.P. & Vizag :**

It is interesting to note that the forest area is very high for Visakhapatnam (39.5 per cent) than for A.P. (22.60 per cent), but the Net Sown Area (NSA) and Gross Cropped Area (GSA) are very low in Vizag district as 27.60 per cent and 34.00 per cent compared to 39.80 per cent and 50.60 per cent of A.P. The average size of land holding is 0.90 ha in study district and 1.20 ha. in A.P. while the small and marginal holdings share is 89.49 per cent in Visakhapatnam district and 83.50 per cent in A.P. The Net Irrigated Area (NIA) is 48 lakhs ha. in A.P. and one lakh ha. in Vizag district and it occupies 43.99 per cent and 34.86 per cent in NSA by A.P. and Vizag respectively. The intensity of irrigation is less in visakhapatnam district than in A.P. Paddy is the major crop both in A.P. (32 per cent) and in Vizag (27 per cent) followed by cereals and Millets. Among commercial crop, Sugarcane is the important commercial crops by 0.26 per cent of GCA in sample district. A.P. is occupying 3rd place for yield rate of Rice but the yield rate of Vizag district is nearly 50 per cent low to State's yield rate. The cropping intensity also shows lower in study district 123 per cent than for A.P. 126 per cent. As a whole Visakhapatnam district has less developed compared with State level i.e. A.P.

##### **Infrastructure :**

The density of National Highways is 6 kms for A.P., where as in Vizag district, the total length of all roads is 7477 kms (including National High ways, Roads & Building Roads and Panchayat Raj Roads. Electricity is the important source for economic development. Its generation capacity was 12 thousand Mega Watt (MW) in 2009 and per capita consumption 746 Kilo Watts (KWs) which is less than sample districts consumption 659 kws. It is because of industrial use or development in the Visakhapatnam district.

## **Gross State Domestic Product (GSDP) and per Capita Income :**

A.P. had. 3.7 lakh crore GSDP in 2008-09 at current prices. The share of Vizag district in GSDP is 7.82 per cent. The per capita income of the State at current prices for the year 2007-08 is 30 thousand and for sample district stands Rs. 40 thousand. . This paradox has arisen due to Steel Plant and other industrial units production in the district, though the district is relatively less developed agriculturally as studied in earlier pages.

## **Sampling of the Study :**

Two Agricultural Marketing Channels 1) Emerging Marketing Channel (EMC) 2) Traditional Marketing Channel (TMC) are selected. From the same markets, primary data collection relating to socio-economic profiles of the sample farmers is taken. It is selected two crops one from fruit category i.e. Banana and another one from vegetable category i.e. Brinjal. The selected sample district is Visakhapatnam which is suitable for the selected crops cultivation.

## **Selected Markets and Design :**

The district remains as hinterland to the city market in getting supplies of different staple commodities, vegetables and fruits. As such, under Emerging Marketing Channel, Rythu Bazar or Farmers Market i.e. M.V.P. Rythu Bazar is selected and for Traditional Marketing Channel, Poorna Market, hub of the city and age old regular market has been taken.

In the Rythu Bazar, farmer is seller, wholesaler, retailers, buyer and commission agent. This means that there are no layers in Farmer Market except Farmer-cum-seller, and consumer. Therefore, the sample is taken as 25 farmers and 5 consumers, whereas in Regular Market/EMC, it is taken 15 farmers for each crop Viz., Banana and Brinjal. And thus, 5 wholesalers, 5 retailers and 5 consumers are selected for each crop. And thus total sample comes out as 30 for Banana crop and 30 for Brinjal Crop.

## **Rythu Bazar in A.P. :**

Rythu Bazar/EMC was started by Government of A.P in 1999 as a humble beginning and the number gradually has risen to 105 by 2010.

With certain aims and objectives like to avoid malpractices in weighing, remunerative prices to farmers, proper cash transactions, these markets are started. The joint collector of the district will organize maintain and allot stalls to farmers under different socio-economic groups like Self-Help Groups (SHGs), Scheduled Tribes (STs), Scheduled Castes (SCs), Other Backward Classes (OBCs) and Other Castes (OEs). The locations are arranged by the mandal level committee and the vicinity and stalls will be kept under the supervision of Estate Officer who

looks after the regulations, day to day affairs of the market and streamlines the farmers-cum-sellers in the market. These markets will not come under Agricultural Market Committee. These Farmers' Markets are classified as A,B,C, and D based on the arrivals of vegetables to these markets.

## **Procedure for Establishment of Rythu Bazars :**

Primarily, Rythu Bazars are to be located on the Government lands and easily accessible to the transport facilities by road, train etc., so that maximum number of consumers could visit this Bazar and consequently it becomes public market.

The team consisting of MRO (Tahsildar), Horticulture Officers/Consultants' and agricultural officer in the village, visits the villages and identify the genuine farmers who are willing to have marketing links to Rythu Bazars from a cluster of 10-15 predominantly vegetable growing villages and issue photo identify cards which contain the name of the farmer, Address, extent of land, variety of vegetables grown, photographs of farmer/farmer with his family members/and/or farm servant.

Regarding the allotment of stalls, to the farmers, they are allotted only on first come first. serve basis daily. The Estate Officers who are appointed by the Joint Collector are responsible for day today maintenance of Rythu Bazars. They report everything to the Joint Collector/Director of marketing every week.

## **Arrivals and Turnovers of Rythu Bazar District-wise in A. P.**

Out of the 23 districts, 17 districts show increasing trend of the arrivals in A.P. and Karimnagar displayed highest out of all. Some districts (6) show decline (Ananthaour, Vizianagaram and others). The turnover has been shown 100 per cent increase as many as six districts. The turnover took 50 per cent over than the previous year in all districts except in Nizamabad district. Present position of Farmers' Markets in sample district .Visakhapatnam, Brinjal is an important vegetable variety and it ranks 4th among the vegetable arrivals estimations and it is taken for the study in this report.

## **Classification of Farmers' Markets in Vizag and A.P. :**

In Vizag, there are four in A category 1 in B, 3 in C and 5 in D category, as against 29 in A, 19 in B, 27 in C and 30 in D in A.P. In the district there are 13 Farmers' Markets, out of which the Farmers' Markets were started as 4 in 1999, one in 2000, 5 in 2002, two in 2003 and one in 2007. There has been increasing trend of arrivals of vegetables in Vizag district.

## **A case study of MVP Colony Rythu Bazar/Farmers' Market in Visakhapatnam City :**

Under Emerging Marketing Channel (EMC), MVP Colony Rythu Bazar/Farmers' Market was established in

1999 was selected. It spreads across 2 acres land and corners at the central point of the vicinity. It received the **Best Rythu Bazar** rolling shield by Government of Andhra Pradesh. The Estate Officer (E.O.) of this market fixes the prices after due calculation of wholesale market prices and retail market prices. . Naturally the prices are fixed at 20 per cent less of regular retail market (EMC) of Vizag city.

#### **Opinion of the Sample Consumers from EMC :**

For each market 10 sample consumers are taken as from each study crop 5 consumers. The consumers of Brinjal being regular to Farmers' Market, expressed much happiness over existing prices, which are reasonably low compared to regular market in city. As second choice for purchases, sample consumers expressed Poorna Market/Regular Market/TMC and they further disclosed the satisfaction of product of Brinjal at 80 per cent and price at 100 per cent. In case of Banana (Fruit category), the sample consumers informed that they are very happy with quality, price, location and service and they have given first rank to Farmers' Market/Rythu Bazars/EMC.

#### **Opinion of Sample Consumers from TMC :**

The Poorna Market being the oldest and biggest out of all four city traditional markets is selected under Traditional Marketing Channel (TMC). All the consumers told that they are satisfied with quality of Brinjal but they are very unhappy with the price of Brinjal commodity. Brinjal consumers are very near to TMC Market and their second choice is Farmers' Market which is far off to their homes. For Banana fruit consumers, the consumers express that they are very near to the market and number of varieties and quality are available. Therefore, they prefer to TMC market and second choice is local shops and Farmers' Market. They reported that they are very happy with quality of commodity and also price. And 40 per cent consumers revealed the prices of Banana in TMC market is high compared to EMC. The basic disadvantage of this market area is that Farmers' Market is located 3 kms away from this market. As a whole consumers feel that they are charged higher price in Traditional Market/Regular Market/TMC.

#### **Price Variation between EMC & TMC :**

All the prices are higher in TMC than in EMC. Out of 20 varieties of vegetables, 8 varieties display below 50 per cent and for the remaining varieties above 50 per cent. Therefore consumers demanded stating of more Rythu Bazars or Farmers' Markets.

#### **Socio-Economic Characteristics of Sample Farmer Households in EMC :**

In the Farmers Market, the sample farmer households took place as 70 per cent (14) Other Backward Castes (OBCs) and 30 per cent (6) per cent other Castes by small farmer size and 40 per cent (2) OBCs and 60 per cent (3) OCs by medium farmer size. There is no large farmer group. Both

the farmer groups are under Below Poverty "line (BPL) households. In the housing 80 per cent (20) households are pucca houses and 20 per cent (5) households are kutcha among Brinjal farmers. All these households possess mobile sets. Among these farmers 68 per cent illiterates and belong to below 50 years age group. The average size of family is 4 for small farmers and 3 for medium farmers. 21 sample households owned pump sets and 2 households had shared pump sets. All land is cultivated as 1.22 ha average household operated land holding (of course, it varies group to group). Brinjal crop is 16.32 per cent to the GCA in the sample. The whole land is cropped by vegetables.

In the Banana crop cultivation all households belong to Hindu religion and these are classified as 60 per cent (15) households OBCs and 40 per cent (10) households other castes. These households are under BPL category. The housing of the households is found that 76 per cent (19) pucca and 24 per cent (6) kutcha. The Head of the household is informed as 80 per cent male and 20 per cent (5) women. The average size of the family is four for small farmers and 5 for medium farmers. Out of all the population of households, 25 per cent (16) males and 48 per cent (20) Female are illiterates. Out of the 25 households, 24 households have pumpsets for the cultivation purpose and 5 households have harvesters and 3 households have motor cycles. On average 1.24 ha operational land holding and 83 per cent of irrigated land are observed. The dissimilarity of banana farmers from brinjal farmers is that these banana farmers grow different crops - paddy, vegetables mango etc. along with the portion of banana crop.

#### **Social Economic Characteristics of Sample Farmer Households in TMC :**

All 15 households belong to Hindu religion and these are found as 47 per cent (7) households OBCs and 53 per cent (8) other households. All these households are BPL Households. All the sample households possess pucca houses. There is no female head of the household in the sample. There is 33 per cent (5) households illiterates. No sample household of brinjal crop in the traditional market owned any transport and' storage processing assets. All households have pumpsets and 2 out of all households have tractors for cultivation. In whole cultivable land, 65 per cent is irrigated. Along with brinjal other crops like paddy, banana, cashew are grown by the farmers. Particularly in Rabi, the medium and large farmers grow vegetables.

In the banana crop sample of traditional market TMC, 14 households are Hindu religion and one household is muslim and further they are classified as 3 OBCs, 3 SCs and 9 others. All these come under BPL category. All the sample households have pucca houses and semi pucca houses. There is no female head and no communication device at all these households. Regarding educational level, 37 per

cent (11) male illiterates and 46 per cent (12) female illiterates are found. Out of the total households, at the asset level, except one, household all have pump sets for irrigation purpose. The households possess as 7 with motor cycles, 2 with tractors and one with four wheeler. The sample household of banana crop in the TMC has 2.14 ha average operational holding including 0.08 portion of leased-in. The main source of irrigation is ground water extraction through pump sets and the remaining area is un-irrigated. In the cropping pattern, banana crop occupies 14 per cent and the remaining is distributed among other crops like paddy, vegetables, mango and other crops in kharif, and in rabi vegetables and other crops are grown.

#### IV

##### **Profile of Sample Farmer Households :**

The analysis is taken place separately for the farmers of each crop cultivated. The EMC farmers are better off in education, using HYV varieties. All the farmers who are producing Brinjal are under below poverty line. The yield rates for Brinjal are equal in both markets. No participation of scheduled castes in EMC but 20 per cent are in TMC for Banana cultivation. Other households reports much in TMC for both crops.

##### **Modern Practices and Method of Cultivation :**

In the use of chemical fertilizer, much deviation is found in small farmers for both crops and vice-versa for medium farmers. Organic fertilizer is predominant in EMC for all farmer groups for Banana but for Brinjal it is not found. Medium farmers went ahead in use of tractors than other groups. Interestingly, the intensity of tractor use is high in Brinjal cultivation than in Banana and there is 100 per cent use of pump sets for both crops in study. The small farmers are very conscious in the use of quality seed than other groups but total production cost is low for medium farmers for both crops.

##### **Economics of Cultivation :**

In the economics of cultivation, the farmers of Rythu Bazar/EMC are found with less marketing costs and high production costs and the opposite for TMC farmers. ' Based on the analysis, it is observed that there is lot of comparative advantage for the TMC/Regular Market Farmers. Even though there is high marketing cost in the Regular Market/TMC, farmers are finding some average farmer margin, and it is less than EMC. There is need of institutional reforms, in Regular Markets, since much marketing cost is existing in these markets.

##### **Post-Harvest Wastage for Sample Farmers :**

At farm state level, farmers do not face any wastage due to lack of storage, refrigeration etc.,. But both farmers met loss due to transport and encountered with rejection of small portion in the specified market. The TMC farmers

met high amount of wastage during marketing the product by all groups, as such the farmers may have less bargaining power. In case of Brinjal also the farmers of both markets received wastage. Comparatively TMC farmers have high amount of wastage. The variation of value (by Standard Deviation) among the farmer groups is also high in TMC rather than EMC groups. This means that the different farmer groups meet different situations in post-harvest-wastage in general for all farmers and in particular for TMC/Regular Market Farmers.

##### **Marketing Cost (MC) :**

The Farmers Market/EMC finds very resourceful edge over TMC in meeting marketing cost, though the city affect prevails over the out-skirts of Visakhapatnam for farmers market. The huge MC faced by TMC farmers may be at least curtailed if there are institutional arrangements done in the norms: form of 1) per cent of fixed commission, 2) registration by agents and caution deposits etc. Then the farmers of TMC may be relieved from high MCs.

##### **Credit Availability :**

Different scenario appears in between farmers Market and regular market. Small farmers from EMC depend much on institutional credit (Banks and Co-operatives) but the same group in TMC relies 50 per cent on money lenders. Medium farmers of EMC find much finance from private lenders, whereas medium and large farmers of TMC depend much on institutional credit. All are using loans for cultivation. No credit engagement is there for Brinjal crop in EMC and no defaulter cases are there in any group from either market.

##### **Farmers Perception over Market Infrastructure :**

The farmers are in the view that there are no internet, telephone, banking computer and Godown facilities. There are no cold storage facilities. Market supervision is good in Farmers Market and it is nearly nil in Regular Market. Sorting and weighing facilities are not available to both markets. Sometimes the weighing is very bad in TMC. The farmers are not finding any standard norms for loading and packing of the produce.

##### **Farmer Perception over proximity of Market :**

It is observed that the TMC farmers are from far off places to sell their produce in Visakhapatnam city, while EMC farmers are nearer to city. To get better prices, ' TMC farmers are to export the produce distant places. Mostly, banana fruit is imported from the distant places while vegetables are from close winter land of the city.

##### **Comparison of Revenue and Profit Margin :**

All groups of farmers market have enjoyed good profit margin compared to regular market. The share of consumer rupee received by the farmers is high in EMC rather than in TMC. In TMC much portion is swallowed by

intermediary and retailer. Therefore, the farmer of regular market finds his pocket with less weight, as robbed in the form of commissions, low price, rejections etc.

#### **Buyers Margin-Aggregate and Monthly:**

There is no analysis for farmer market, since farmer is seller also. The buyers in TMC have high margins/profit during seasons and some specific months. The margins are very high for Banana to the buyer compared to Brinjal. It is better to supervise much in the seasons and certain months by marketing department to curtail higher price fixation by buyers.

#### **Retail Market Margin :**

The retailers are not engaging stock and not facing any cost for maintaining stock. Retailer is very comfortable for vegetables (Brinjal) than fruits (Banana) and he/she is getting profit margin for Brinjal than for Banana. There is much syndicate nature among retailers in the fixation of price everyday in the market. Therefore, it is better to supervise the fixation of prices done by retailers in Andhra Pradesh. The same will. be proved in following topic.

#### **Share of Market Margin and Consumer Price :**

Spectacular scene is that the Farmer Market has shown the better than Regular Market. It is found that the Intermediary (Rs. 28) and the Retailer (Rs. 80) have taken out 71 per cent from the price paid by the consumer for Banana per quintal while this scene does not arise to Farmer Market as there are no middlemen. The same situation existed for Brinjal marketing as 82 per cent taken by both the intermediary and the retailer per quintal. To avoid this, Government and the Marketing Department is to streamline the regular markets in the interest of farmer and nation, otherwise the pathetic situation of farmers could not be restored.

#### **Market Efficiency :**

*The market measuring parameters prove that the EMC or Farmers' Market is the best one compared to Regular Market/TMC At overall groups the Farmer Market clearly*

*shows the price paid to farmer as 42.16 per cent high for Banana and thus 11.89 per cent high for Brinjal, though consumer was charged very low price as referred earlier. The modified Measure of Market Efficiency (MME) is found as high as 23.13 per cent for Banana and 1.84 per cent for Brinjal for Farmers' Market. Therefore, it is 100 per cent advisable to start Farmers' Markets in every reasonable centre in Andhra Pradesh and also across all states in India.*

#### **Policy Suggestions to be implemented :**

- (1) In one way the farmer is "vulnerable" before this unscrupulous market hegemony which is existing across Andhra Pradesh and all-India. Hence, it is suggested to appreciate and implement Farmers' Market across Andhra Pradesh and all-India. There is apparent proof that Farmers' Market can be started at all mandal headquarters (1128), Corporations, Municipalities (124) and Major Panchayats (132).*
- (2) In the establishment of Farmers' Market, the location is to be given top-priority keeping in view the consumer's access and approach.. And at the same time, the farmer may be given transport facility on nominal charge.*
- (3) The infrastructural facilities and market supervision are needed in either market since these are very far to the need level.*
- (4) There is a strong and dire requirement for godown and cold storage facilities which are nearly not available to farmers.*
- (5) There should be some encouragement in. the purchase of inputs on subsidy basis who produce vegetables and fruits.*
- (6) It is high time to nationalize the institutional setup of regular market, since all the farmers are loosing their sweat in the form of commission, low price fixation, no bargaining power etc.*

## D. Commodity Reviews

### (i) Foodgrains

During the month of February, 2013 the Wholesale Prices of food grains displayed a rising trend. Wholesale Price Index (Base 2004-05=100) of cereals and foodgrains

rose by 1.38% and 0.60% while that of pulses fell by 2.68% over the previous month.

#### ALL INDIA INDEX NUMBER OF WHOLESALE PRICES

(Base : 2004-2005=100)

Commodity	Weight (%)	WPI for the Month of February, 2013	WPI for the Month of January, 2013	WPI A year ago	Percentage change during	
					A month	A year
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rice	1.793	205.6	202.0	173.0	1.78	18.84
Wheat	1.116	206.9	205.4	170.1	0.73	21.63
Jowar	0.096	238.0	231.9	250.8	2.63	-5.10
Bajra	0.115	256.5	256.0	199.9	0.20	28.31
Maize	0.217	250.1	248.1	213.8	0.81	16.98
Barley	0.017	218.2	213.7	189.0	2.11	15.45
Ragi	0.019	339.9	317.1	216.1	7.19	57.29
Cereals	3.373	212.4	209.5	178.2	1.38	19.19
Pulses	0.717	239.8	246.4	208.6	-2.68	14.96
Foodgrains	4.09	217.2	215.9	183.5	0.60	18.37

Source: Office of the Economic Adviser, M/O Commerce and Industry.

#### Behaviour of Wholesale Prices

The following Table indicates the State wise trend

of Wholesale Prices of Cereals during the month of February, 2013.

Commodity	Main Trend	Rising	Falling	Mixed	Steady
Rice	Rising & Steady	Uttar Pradesh Jharkhand		Haryana	Gujarat Kerala
Wheat	Mixed		Karnataka	Haryana	Gujarat
Jowar	Rising	Gujarat A.P. U.P.			Maharashtra Karnataka
Bajra	Rising	Tamil Nadu U.P. Rajasthan		Gujarat	Karnataka AP.
Maize	Rising	Rajasthan Haryana Jharkhand	Gujarat		

Procurement of Rice.



## Procurement of Rice

4229 thousand tonnes of Rice (including paddy converted into rice) was procured during February, 2013, as against 4439 thousand tonnes of Rice (including paddy converted into rice) procured during February 2012. The

total procurement of Rice in the current marketing season i.e 2012-2013, upto 28-02-2013 stood at 27233 thousand tonnes, as against 25968 thousand tonnes of rice procured, during the corresponding period of last year. The details are given in the following table.

### PROCUREMENT OF RICE

(in thousand tonnes)

State	Marketing Season 2012-13 (up to 28-02-2013)		Corresponding Period of last Year 2011-12		Marketing Year (October-September)			
	Procure- ment	Percentage to Total	Procure- ment	Percentage to Total	2011-12		2010-11	
					Procure- ment	Percentage to Total	Procure- ment	Percentage to Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Andhra Pradesh	3531	12.97	3843	14.80	7540	21.52	9609	28.10
Chhatisgarh	4794	17.60	4074	15.69	4115	11.75	3746	10.95
Haryana	2597	9.54	1998	7.69	2007	5.73	1687	4.93
Maharashtra	166	0.61	125	0.48	178	0.51	308	0.90
Punjab	8557	31.42	7731	29.77	7731	22.07	8635	25.25
Tamil Nadu	250	0.92	966	3.72	1596	4.56	1543	4.51
Uttar Pradesh	1890	6.94	2653	10.22	3355	9.58	2554	7.47
Uttarakhand	337	1.24	256	0.99	378	1.08	422	1.23
Others	5111	18.77	4322	16.64	8131	23.21	5694	16.65
<b>Total</b>	<b>27233</b>	<b>100.00</b>	<b>25968</b>	<b>100.00</b>	<b>35031</b>	<b>100.00</b>	<b>34198</b>	<b>100.00</b>

Source: Department of Food & Public Distribution.

## Procurement of Wheat

The total procurement of wheat in the current marketing season i.e 2012-2013 upto August, 2012 is 38148

thousand tonnes against, a total of 28148 thousand tonnes of wheat procured during last year. The details are given in the following table

### PROCUREMENT OF WHEAT

(in thousand tonnes)

State	Marketing Season 2012-13 (up to 2-08-2012)		Corresponding Period of last Year (2011-12)		Marketing Year (April-March)			
	Procure- ment	Percentage to Total	Procure- ment	Percentage to Total	2011-12		2010-11	
					Procure- ment	Percentage to Total	Procure- ment	Percentage to Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Haryana	8665	22.71	6882	24.45	6928	24.45	6347	28.19
Madhya Pradesh	8493	22.26	4905	17.43	4965	17.52	3539	15.72
Punjab	12834	33.64	10957	38.93	10958	38.67	10209	45.35
Rajasthan	1964	5.15	1303	4.63	1303	4.60	476	2.11
Uttar Pradesh	5063	13.27	3461	12.30	3461	12.21	1645	7.31
Others	1129	2.96	640	2.27	720	2.54	298	1.32
<b>Total</b>	<b>38148</b>	<b>100.00</b>	<b>28148</b>	<b>100.00</b>	<b>28335</b>	<b>100.00</b>	<b>22514</b>	<b>100.00</b>

Source: Department of Food & Public Distribution.

## (ii) Commercial Crops

**OILSEEDS AND EDIBLE OILS :** The Wholesale Price Index (WPI) of nine major oilseeds as a group stood at 202.8 in February, 2013 showing a fall of 1.0 per cent over the previous month. However, it increased by 23.4 per cent over the previous year.

The Wholesale Price Index (WPI) of all individual oilseeds showed a mixed trend. The WPI of Groundnut seed (1.7 per cent) and Soyabean (1.4 per cent) increased over the previous month. However, the WPI of Gingelly seed (1.9 per cent), Copra (3.1 per cent), Cottonseed (1.5 per cent), Sunflower (2.4 per cent) and Rape & Mustard (5.5 per cent) decreased over the previous month. The WPI of Nigerseed and Safflower seed remained unchanged over the previous month.

The Wholesale Price Index (WPI) of Edible Oils as a group stood 148.4 in February, 2013 showing a fall of 0.6 per cent over the previous month. However, it increased by 6.5 per cent over the previous year. The WPI of Sunflower Oil (1.4 per cent), Gingelly Oil (1.5 per cent), Copra oil (1.2 per cent) and Soyabean Oil (0.8 per cent) increased over the previous month. However, the WPI of Groundnut Oil (1.6 per cent), Cottonseed Oil (6.9 per cent) and Mustard Oil (0.8 per cent) decreased over the previous month.

**FRUITS AND VEGETABLE :** The Wholesale Price Index (WPI) of Fruits & Vegetable as a group stood at 183.2 in February, 2013 showing a fall of 2.3 per cent over the previous month.

However, it increased by 10.4 per cent over the previous year.

**POTATO :** The Wholesale Price Index (WPI) of Potato stood at 154.6 in February, 2013 showing a fall of 12.7 per cent over the previous month. However, it increased by 46.0 per cent over the previous year.

**ONION :** The Wholesale Price Index (WPI) of Onion stood 340.3 in February, 2013 showing an increase of 6.5 per cent and 154.3 per cent over the previous month and over the previous year.

**CONDIMENTS AND SPICES:** The Wholesale Price Index (WPI) of Condiments & Spices (Group) stood at 222.1 in February, 2013 showing an increase of 2.2 per cent and 3.6 per cent over the previous month and over the previous year.

The WPI of Black Pepper, Chillies (Dry) and Turmeric increased by 1.4 per cent, 4.1 per cent and 5.9 per cent, over the previous month.

**RAW COTTON :** The Wholesale Price Index (WPI) of Raw Cotton stood at 207.7 in February, 2013 showing an increase of 4.0 per cent and 4.3 per cent over the previous month and over the previous year.

**RAW JUTE :** The Wholesale Price Index (WPI) of Raw Jute stood at 263.4 in February, 2013 showing an increase of 8.6 per cent and 18.0 per cent over the previous month and over the previous year.

## WHOLESALE PRICE INDEX OF COMMERCIAL CROPS FOR THE MONTH OF FEBRUARY, 2013

(Base Year : 2004-05=100)

Commodity	Latest	Month	Year	Percentage Variation over	
	Feb., 2013	Jan., 2013	Feb., 2012	Month	Year
<b><i>OIL SEEDS</i></b>	202.8	204.9	164.3	-1.0	23.4
Groundnut Seed	259.4	255.1	214.0	1.7	21.2
Rape & Mustard Seed	207.1	219.1	162.7	-5.5	27.3
Cotton Seed	165.2	167.7	142.1	-1.5	16.3
Copra (Coconut)	95.1	98.1	97.1	-3.1	-2.1
Gingelly Seed (Sesamum)	363.7	370.8	230.3	-1.9	57.9
Niger Seed	182.4	182.4	167.7	0.0	8.8
Safflower (Kardi Seed)	150.4	150.4	130.9	0.0	14.9
Sunflower	187.8	192.5	160.7	-2.4	16.9
Soyabean	202.4	199.7	150.9	1.4	34.1
<b><i>EDIBLE OILS</i></b>	148.4	149.3	139.3	-0.6	6.5
Groundnut Oil	195.8	198.9	173.4	-1.6	12.9
Cotton Seed Oil	170.3	182.9	149.5	-6.9	13.9
Mustard & Rapeseed Oil	154.2	155.4	144.9	-0.8	6.4
Soyabean Oil	163.6	162.3	151.4	0.8	8.1
Copra Oil	116.3	114.9	118.6	1.2	-1.9
Sunflower Oil	141.3	139.4	132.1	1.4	7.0
Gingelly Oil	191.6	188.8	151.5	1.5	26.5
<b><i>FRUITS AND VEGETABLES</i></b>	183.2	187.6	166.0	-2.3	10.4
Potato	154.6	177.1	105.9	-12.7	46.0
Onion	340.3	319.4	133.8	6.5	154.3
<b><i>CONDIMENTS AND SPICES</i></b>	222.1	217.3	214.4	2.2	3.6
Black Pepper	535.4	528.0	426.8	1.4	25.4
Chillies(Dry)	252.1	242.2	251.4	4.1	0.3
Turmeric	186.7	176.3	165.1	5.9	13.1
Raw Cotton	207.7	199.7	199.2	4.0	4.3
Raw Jute	263.4	242.6	223.2	8.6	18.0

Source : Dte. of Econ. and Statistics, Commercial Crops Division.

## PART II—Statistical Tables

### A. Wages

#### 1. DAILY AGRICULTURAL WAGES IN SOME STATES (CATEGORY-WISE)

(in Rupees)

State/Distt.	Village	Month and Year	Normal Daily Working Hours	Field Labour			Other Agri. Labour			Herdsman			Skilled Labour		
				Man	Wo-man	Non Adult	Man	Wo-man	Non Adult	Man	Wo-man	Non Adult	Car-penter	Black-smith	Cob-ler
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
<i>Andhra Pradesh</i>															
Krishna	Ghantasala	Dec., 2011	8	250.00	100.00	NA	250.00	130.00	NA	NA	NA	NA	NA	NA	NA
Guntur	Tadikonda	Dec., 2011	8	200.00	175.00	110.00	200.00	160.00	110.00	160.00	NA	NA	NA	NA	NA
Rangareddy	Arutla	Dec., 2011	8	200.00	120.00	NA	150.00	120.00	NA	150.00	120.00	NA	220.00	200.00	NA
<i>Karnataka</i>															
Bangalore	Harisandra	May to June, 2012	8	200.00	150.00	NA	200.00	150.00	NA	250.00	180.00	NA	300.00	300.00	NA
Tumkur	Gedlahali	May to June, 2012	8	160.00	160.00	NA	180.00	160.00	NA	180.00	160.00	NA	180.00	180.00	NA
<i>Maharashtra</i>															
Nagpur	Mauda	Feb., 2012	8	100.00	100.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ahmednagar	Akole	Feb, 2012	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>Jharkhand</i>															
Ranchi	Gaintalood	April, 2012	8	100.00	100.00	NA	90.00	90.00	NA	58.00	58.00	NA	170.00	150.00	NA

#### 1.1 DAILY AGRICULTURAL WAGES IN SOME STATES (OPERATION-WISE)

(in Rupees)

State/Distt.	Centre	Month and Year	Type of Labour	Normal Daily Working Hours	Ploughing	Sowing	Weeding	Harvesting	Other Agri. Labour	Herdsman	Skilled Labour			
											Car-penter	Black-smith	Cob-ler	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
<i>Assam</i>														
Barpeta	Loharapara	March, 12	M	8	180.00	180.00	180.00	180.00	180.00	180.00	180.00	180.00	180.00	180.00
			W	8	NA	NA	160.00	160.00	160.00	NA	NA	NA	NA	NA
<i>Bihar</i>														
Muzaffarpur	Bhalui Rasul	April to, June, 2012	M	8	130.00	120.00	80.00	130.00	150.00	120.00	200.00	180.00	250.00	
			W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Shekhpura	Kutaut	May and June, 2012	M	8	NA	NA	185.00	NA	185.00	NA	245.00	NA	NA	NA
			W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>Chhattisgarh</i>														
Dhamtari	Sihaba	Jan., 2013	M	8	350.00	100.00	100.00	NA	80.00	100.00	200.00	125.00	100.00	
			W	8	NA	100.00	100.00	NA	80.00	80.00	200.00	NA	NA	NA
<i>Gujarat</i>														
Rajkot	Rajkot	Sep., 2012	M	8	217.00	206.00	167.00	191.00	151.00	162.00	360.00	380.00	287.00	
			W	8	NA	167.00	173.00	191.00	142.00	142.00	NA	NA	NA	NA
Dahod	Dahod	Sep., 2012	M	8	100.00	100.00	100.00	100.00	71.00	NA	200.00	150.00	150.00	
			W	8	NA	100.00	100.00	100.00	100.00	NA	NA	NA	NA	NA
<i>Haryana</i>														
Panipat	Ugarakheri	July and Aug, 2012	M	8	180.00	180.00	180.00	200.00	180.00	NA	NA	NA	NA	NA
			W	8	NA	150.00	150.00	180.00	150.00	NA	NA	NA	NA	NA

1.1 DAILY AGRICULTURAL WAGES IN SOME STATES (OPERATION-WISE)—Contd.

(in Rupees)

State/Distt.	Centre	Month and Year	Type of Labour	Normal Daily Working Hours	Ploughing	Sowing	Weeding	Harvesting	Other Agri. Labour	Herdsman	Skilled Labour		
											Car-penter	Blacksmith	Cobler
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
<i>Himachal Pradesh</i>													
Mandi	Mandi	Nov., to Dec. 2010	M W	8 8	300.00 NA	110.00 110.00	110.00 110.00	110.00 110.00	110.00 110.00	110.00 110.00	200.00 NA	200.00 NA	NA NA
<i>Kerala</i>													
Kozhikode	Koduvally	Nov., 2012	M W	4 to 8 4 to 8	820.00 NA	450.00 NA	NA 350.00	450.00 350.00	635.00 400.00	NA NA	550.00 NA	NA NA	NA NA
Palakkad	Elappally	Nov., 2012	M W	4 to 8 4 to 8	400.00 NA	300.00 NA	NA 200.00	NA NA	366.66 200.00	NA NA	450.00 NA	NA NA	NA NA
<i>Madhya Pradesh</i>													
Hoshangabad	Sangarkhera	Dec., 2012	M W	8 8	150.00 NA	130.00 130.00	150.00 150.00	150.00 150.00	125.00 125.00	100.00 100.00	350.00 NA	350.00 NA	NA NA
Satna	Kotar	Dec., 2012	M W	8 8	180.00 NA	NA NA	120.00 120.00	120.00 120.00	120.00 120.00	120.00 120.00	NA NA	NA NA	180.00 NA
Shyampur Kala	Vijaypur	Dec., 2012	M W	8 8	150.00 NA	NA NA	NA NA	NA NA	NA NA	NA NA	200.00 NA	200.00 NA	NA NA
<i>Orissa</i>													
Bhadrak	Chandbali	Dec., 2012	M W	8 8	180.00 NA	140.00 NA	220.00 150.00	200.00 120.00	190.00 140.00	50.00 40.00	350.00 NA	250.00 NA	200.00 NA
Ganjam	Aska	Dec., 2012	M W	8 8	200.00 NA	200.00 100.00	180.00 100.00	140.00 120.00	201.66 118.33	120.00 100.00	350.00 NA	250.00 NA	150.00 NA
<i>Punjab</i>													
Ludhiana	Pakhowal	June, 2008	M W	8 8	NA NA	NA NA	90.00 NA	95.00 NA	NA NA	99.44 NA	NA NA	NA NA	NA NA
<i>Rajasthan</i>													
Barmer	Vishala	Oct, 2012	M W	8 8					—NA— —NA—				
Jalore	Panwa	Oct., 2012	M W	8 8	NA NA	NA NA	200.00 NA	NA NA	NA NA	200.00 NA	300.00 NA	250.00 NA	NA NA
<i>Tamil Nadu</i>													
Thanjavur	Pulvannatham	Dec., 2012	M W	6 5					—NR—				
Tirunelveli	Malayakulam (Kurvikulam)	Dec., 2012	M W	8 8	NA NA	NA NA	120.00 NA	NA 130.00	NA NA	NA NA	NA NA	NA NA	NA NA
<i>Tripura</i>													
Agartala	Govt. Agri. Farm		M W	8 8					—NR—				
<i>Uttar Pradesh*</i>													
Meerut	Ganeshpur	Sept., 2012	M W	8 8	204.00 NA	197.00 182.00	204.00 181.00	204.00 181.00	212.00 181.00	NA NA	313.00 NA	NA NA	NA NA
Auraiya#	Auraiya	Sept., 2012	M W	8 8	NA NA	NA NA	NA 118.8	NA 100.00	NA 119.3	NA NA	278.6 NA	NA NA	NA NA
Chandauli	Chandauli	July, 2012	M W	8 8	180.00 NA	180.00 180.00	136.00 136.00	125.00 125.00	125.00 125.00	NA NA	252.00 NA	NA NA	NA NA

M-Man W-Woman

N. A. —Not Available N. R. —Not Reported

\*- Uttar Pradesh reports its district-wise average rural wage data rather than from selected centre/village.

# New district is opted to replace Chandbali.

Source : Dte. of Econ. and Statistics, Wages Division.

**B. PRICES**

**2. WHOLESALE PRICES OF CERTAIN AGRICULTURAL COMMODITIES AND ANIMAL HUSBANDRY PRODUCTS AT SELECTED CENTRES IN INDIA**

(Month-end Prices in Rupees)

Commodity	Variety	Unit	State	Centre	Feb.-13	Jan.-13	Feb.-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Wheat	PBW 343	Quintal	Punjab	Amritsar	1500	1500	1300
Wheat	Dara	Quintal	Uttar Pradesh	Chandausi	1545	1480	1110
Wheat	Lokvan	Quintal	Madhya Pradesh	Bhopal	1568	1550	1198
Jowar	—	Quintal	Maharashtra	Mumbai	2300	2200	2250
Gram	No III	Quintal	Madhya Pradesh	Sehore	—	—	2000
Maize	Yellow	Quintal	Uttar Pradesh	Kanpur	1420	1350	1185
Gram Split	—	Quintal	Bihar	Patna	5300	5500	4700
Gram Split	—	Quintal	Maharashtra	Mumbai	6900	7000	4400
Arhar Split	—	Quintal	Bihar	Patna	5650	5800	6200
Arhar Split	—	Quintal	Maharashtra	Mumbai	6550	6550	5200
Arhar Split	—	Quintal	NCT of Delhi	Delhi	5600	6000	5700
Arhar Split	Sort II	Quintal	Tamil Nadu	Chennai	5800	5550	5700
Gur	—	Quintal	Maharashtra	Mumbai	3350	3450	3100
Gur	Sort II	Quintal	Tamil Nadu	Coimbatore	3200	3200	2950
Gur	Balti	Quintal	Uttar Pradesh	Hapur	2430	2450	2225
Mustard Seed	Black (S)	Quintal	Uttar Pradesh	Kanpur	3720	4000	2860
Mustard Seed	Black	Quintal	West Bengal	Raniganj	4700	4650	3300
Mustard Seed	—	Quintal	West Bengal	Kolkata	4100	4200	3550
Linseed	Bada Dana	Quintal	Uttar Pradesh	Kanpur	4270	4315	3460
Linseed	Small	Quintal	Uttar Pradesh	Varanasi	3680	3680	3100
Cotton Seed	Mixed	Quintal	Tamil Nadu	Virudhunagar	1500	1400	1200
Cotton Seed	MCU5	Quintal	Tamil Nadu	Coimbatore	1550	1550	1550
Castor Seed	—	Quintal	Andhra Pradesh	Hyderabad	3200	3200	3500
Sesamum Seed	White	Quintal	Uttar Pradesh	Varanasi	6000	5800	5700
Copra	FAQ	Quintal	Kerala	Alleppey	4550	4850	4400
Groundnut	Pods	Quintal	Tamil Nadu	Coimbatore	3900	3850	3850
Groundnut	—	Quintal	Maharashtra	Mumbai	8400	8400	5900
Mustard Oil	—	15 Kg.	Uttar Pradesh	Kanpur	1338	1380	1118
Mustard Oil	Ordinary	15 Ka.	West Benaal	Kolkata	1395	1410	1350
Groundnut Oil	—	15 Ka.	Maharashtra	Mumbai	1845	1920	1575
Groundnut Oil	Ordinary	15 Kg.	Tamil Nadu	Chennai	1950	1920	1575
Linseed Oil	—	15 Ka.	Uttar Pradesh	Kanpur	1338	1328	1263
Castor Oil	—	15 Ka.	Andhra Pradesh	Hyderabad	1163	1148	1200
Sesamum Oil	—	15 Kg.	NCT of Delhi	Delhi	1700	1800	1400
Sesamum Oil	Ordinary	15 Kg.	Tamil Nadu	Chennai	3150	2925	1763
Coconut Oil	—	15 Kg.	Kerala	Cochin	983	1065	975
Mustard Cake	—	Quintal	Uttar Pradesh	Kanpur	1855	2060	1150
Groundnut Cake	—	Quintal	Andhra Pradesh	Hvderabad	3214	3214	2357
Cotton/Kapas	NH44	Quintal	Andhra Pradesh	Nandyal	3900	3850	3600
Cotton/Kapas	LRA	Quintal	Tamil Nadu	Virudhunagar	3766	3666	3556
Jute Raw	TD5	Quintal	West Benaal	Kolkata	2750	2520	2440
Jute Raw	W5	Quintal	West Benaal	Kolkata	2750	2520	2440

2. WHOLESALE PRICES OF CERTAIN AGRICULTURAL COMMODITIES AND ANIMAL HUSBANDRY  
PRODUCTS AT SELECTED CENTRES IN INDIA—*Contd.*

(Month-end Prices in Rupees)

Commodity	Variety	Unit	State	Centre	Feb.-13	Jan.-13	Feb.-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Oranges	—	100 No	NCT of Delhi	Delhi	583	483	583
Oranges	Big	100 No	Tamil Nadu	Chennai	500	480	540
Oranges	Nagpuri	100 No	West Benaal	Kolkata	—	NA	380
Banana	—	100 No.	NCT of Delhi	Delhi	150	167	150
Banana	Medium	100 No.	Tamil Nadu	Kodaikkanal	354	345	309
Cashewnuts	—	Quintal	Maharashtra	Mumbai	51000	50000	42500
Almonds	—	Quintal	Maharashtra	Mumbai	45000	46000	40000
Walnuts	—	Quintal	Maharashtra	Mumbai	62000	62500	52500
Kishmish	—	Quintal	Maharashtra	Mumbai	12500	12000	12000
Peas Green	—	Quintal	Maharashtra	Mumbai	3250	3250	2550
Tomatoes	Ripe	Quintal	Uttar Pradesh	Kanpur	530	650	580
Ladyfinger	—	Quintal	Tamil Nadu	Chennai	1900	2500	3000
Cauliflower	—	100 No.	Tamil Nadu	Chennai	1200	1300	1200
Potatoes	Red	Quintal	Bihar	Patna	730	770	500
Potatoes	Desi	Quintal	West Bengal	Kolkata	580	700	480
Potatoes	Sort I	Quintal	Tamil Nadu	Mettupalavam	—	2474	1056
Onions	Pole	Quintal	Maharashtra	Nashik	1350	1200	380
Turmeric	Nadan	Quintal	Kerala	Cochin	9900	8000	6700
Turmeric	Salam	Quintal	Tamil Nadu	Chennai	8300	7200	7200
Chillies	—	Quintal	Bihar	Patna	7420	7600	8500
Black Peccer	Nadan	Quintal	Kerala	Kozhikode	37500	37500	32000
Ginger	Dry	Quintal	Kerala	Cochin	14500	14000	7600
Cardamom	Major	Quintal	NCT of Delhi	Delhi	72000	72500	75000
Cardamom	Small	Quintal	West Bengal	Kolkata	100000	98000	70000
Milk	Cow	100 Liters	NCT of Delhi	Delhi	3600	3600	3300
Milk	Buffalo	100 Liters	West Bengal	Kolkata	3200	3200	3200
Ghee Deshi	Deshi No 1	Quintal	NCT of Delhi	Delhi	28014	28348	27214
Ghee Deshi	—	Quintal	Maharashtra	Mumbai	25500	25500	27000
Ghee Deshi	Desi	Quintal	Uttar Pradesh	Kanpur	28000	28200	28150
Fish	Rohu	Quintal	NCT of Delhi	Delhi	10700	8000	7000
Fish	Pomchrets	Quintal	Tamil Nadu	Chennai	26200	26500	21300
Eggs	Madras	1000 No.	West BenQal	Kolkata	4000	3800	3250
Tea	—	Quintal	Bihar	Patna	19800	19800	19400
Tea	Atti Kunna	Quintal	Tamil Nadu	Coimbatore	9000	9000	13000
Coffee	Plant-A	Quintal	Tamil Nadu	Coimbatore	26000	26000	30000
Coffee	Rubusta	Quintal	Tamil Nadu	Coimbatore	14000	14000	12400
Tobacco	Kamrpila	Quintal	Uttar Pradesh	Farukhabad	27.75	2775	2325
Tobacco	Raisa	Quintal	Uttar Pradesh	Farukhabad	2680	2650	2215
Tobacco	Bidi Tobacco	Quintal	West Benaal	Kolkata	3450	4000	3400
Rubber	—	Quintal	Kerala	Kottayam	14600	14800	18200
Arecanut	Pheton	Quintal	Tamil Nadu	Chennai	28000	28000	27500

Source : Dte. of Econ. & Statistics, Prices and Market Division.

3. MONTH-END WHOLESAL E PRICES OF SOME IMPORTANT AGRICULTURAL COMMODITIES IN INTERNATIONAL  
MARKETS DURING YEAR, 2013

Commodity	Variety	Country	Centre	Unit	Jan.	Feb.
Cardamom	Guatemala Bold Green	U.K.	—	Dollar/M.T.	16500.00	16500.00
				Rs./Qtl.	139788.00	137164.50
Cashew Karnals	Spot U.K. 320s	U.K.	—	Dollar/lbs	3.60	3.60
				Rs./Qtl.	67220.24	65958.67
Castor Oil	Any Origin ex tank Rotterdam	Nether- lands	—	Dollar/M.T.	1690.00	1650.00
				Rs./Qtl.	9071.92	8987.55
Celery Seed	ASTA cif	India	—	Dollar/M.T.	1500.00	1500.00
				Rs./Qtl.	8052.00	8170.50
Chillies	Birds eye 2005 crop	Africa	—	Dollar/M.T.	5000.00	4250.00
				Rs./Qtl.	26840.00	23149.75
Cinnamon Bark		Mada- gascar	—	Dollar/M.T.	1100.00	1100.00
				Rs./Qtl.	5904.80	5991.70
Cloves	Singapore	Mada- gascar	—	Dollar/M.T.	9500.00	9500.00
				Rs./Qtl.	50996.00	51746.50
Coconut Oil	Crude Phillipine/ Indonesia	Nether- lands	—	Dollar/M.T.	815.00	850.00
				Rs./Qtl.	4374.92	4629.95
Copra	Phillipines cif Rotterdam	Philli- pine	—	Dollar/M.T.	538.00	530.00
				Rs./Qtl.	2887.98	2886.91
Corriander		India	—	Dollar/M.T.	1150.00	1150.00
				Rs./Qtl.	6173.20	6264.05
Cummin Seed		India	—	Dollar/M.T.	2889.00	2889.00
				Rs./Qtl.	15508.15	15736.38
Fennel seed		India	—	Dollar/M.T.	2600.00	2600.00
				Rs./Qtl.	13956.80	14162.20
Ginger	Split	Nigeria	—	Dollar/M.T.	2400.00	2400.00
				Rs./Qtl.	12883.20	13072.80
Groundnut kernels	US 2005, 40/50	European Ports	—	Dollar/M.T.	1275.00	1350.00
				Rs./Qtl.	6844.20	7353.45
Groundnut Oil	Crude Any Ori gin cif Rotterdam	U.K.	—	Dollar/M.T.	2200.00	—
				Rs./Qtl.	18638.40	—
Lentils	Turkish Red Split Crop 1+1 water	U.K.	—	Pound/M.T	522.72	655.20
				Rs./Qtl.	4428.48	5446.68
Maize		U.S.A	Chic- ago	C/56 lbs.	720.75	299.95
				Rs./Qtl	1520.51	642.09
Oats		Canada	Winni- peg	CaDollar/M.T.	359.83	384.62
				Rs./Qtl.	1926.89	2058.87
Palm Kernal Oil	Crude Malaysia/ Indonesia	Nether- lands	—	Dollar/M.T.	795.00	855.00
				Rs./Qtl.	4267.56	4657.19
Palm Oil	Crude Malaysian/ Sumatra	Nether- lands	—	Dollar/M.T.	855.00	860.00
				Rs./Qtl.	4589.64	4684.42



3. MONTH-END WHOLESAL E PRICES OF SOME IMPORTANT AGRICULTURAL COMMODITIES IN INTERNATIONAL MARKETS DURING YEAR, 2013—*Contd.*

Commodity	Variety	Country	Centre	Unit	Jan.	Feb.
Pepper Black)	Sarawak Black lable	Malaysia	—	Dollar/M.T.	—	7300.00
			—	Rs./Qtl.	—	39763.10
Rapeseed	Canola	Canada	Winni-peg	Can Dollar/M.T	605.80 3244.06	644.20 3448.40
Rapeseed	UK Rapeseed Buyer Price DAP	U.K.	—	Pound/M.T. Rs./Qtl.	379.00 3210.89	389.00 3233.76
Rapeseed Oil	Refined bleached and deodorised	U.K.	—	Pound/M.T. Rs./Qtl.	871.00 7379.11	908.00 7548.20
Soyabean Meal	U.K. produced 49% oil & protein	U.K.	—	Pound/M.T. Rs./Qtl.	351.00 2973.67	379.00 3150.63
Soyabean Oil	Refined bleached and deodorised	U.S.A.	—	C/lbs Rs./Qtl.	52.03 6155.71	52.07 6251.10
		U.K.	—	Pound/M.T. Rs./Qtl.	826.00 6997.87	849.00 7057.74
Soyabeans	US No. 2 yellow	U.S.A.	—	C/60 lbs Rs./Qtl	1437.00 2830.97	1482.75 2964.09
		Nether-lands	Chi-cago	Dollar/M.T. Rs./Qtl	596.70 3203.09	594.10 3236.06
Sunflower Seed Oil	Refined bleached and deodorised	U.K.	—	Pound/M.T. Rs./Qtl	983.00 8327.98	1018.00 8462.63
Tallow	High grade delivered	U.K.	Lon-don	Pound/M.T. Rs./Qtl	550.00 4659.00	460.00 3823.98
Turmeric	Madras finger spot/cif	India	—	Dollar/M.T. Rs./Qtl	850.00 4562.80	850.00 4629.95
Walnuts	Indian light halves	U.K.	—	Pound/M.T. Rs./Qtl	7500.00 63540.00	7500.50 62347.50
Wheat		U.S.A.	Chic-ago	C/60 lbs	774.75	738.50
				Rs./Qtl	1526.30	1476.30

Source : Public Ledger.

**Exchange Rate**

	Jan.	Feb.
US Dollar	53.68	54.47
CAN Dollar	53.55	53.53
UK Pound	84.72	83.13

**C. CROP PRODUCTION**

**4. SOWING AND HARVESTING OPERATIONS NORMALLY IN PROGRESS DURING APRIL, 2013**

State	Sowing	Harvesting
(1)	(2)	(3)
Andhra Pradesh	Autumn Rice, Sugarcane.	Summer Rice, Jowar (R), Ragi (R), Small Millets (R), Other Rabi Pulses, Sugarcane, Cotton.
Assam	Autumn Rice, Maize, Small Millets (R), Tur (R), Sugarcane, Cotton, Mesta.	Wheat, Tur (R), Sown during previous year.
Bihar	Jowar (K), Bajra, Jute.	Wheat, Barley, Gram, Tur (K), Castorseed, Linseed.
Gujarat	Sugarcane.	Castorseed, Onion.
Himachal Pradesh	Maize, Summer Potato (Hills), Sugarcane, Ginger Chillies (Dry), Sesamum, Cotton, Turmeric.	Wheat, Barley, Gram, Other Rabi Pulses, Rapeseed and Mustard, Linseed.
Jammu & Kashmir	Autumn Rice, Jowar (R), Maize, Ragi, Small Millets (K), Summer Potato, Chillies (Dry), Tobacco, Sannhemp, Onion.	Wheat, Barley, Small Millets (R), Gram, Sesamum, Linseed, Onion.
Karnataka (Plains)	Maize, Urad (K) Mung (K), Summer Potato (Hills), Tobacco, Castorseed, Sesamum, Sweet Potato (Hills), Sannhemp, Onion (2nd Crop).	Summer Rice, Gram, Urad (R), Summer, Potato, Cotton, Turmeric, Onion (1st Crop). Tapioca.
Kerala	Autumn Rice, Ragi, Ginger, Turmeric, Tapioca.	Summer Rice, Tur (R), Other Rabi Pulses, Sesamum.
Madhya Pradesh	Sugarcane, Onion	Wheat, Barley, Tur (K), Winter Potato (Plains), Castorseed, Linseed, Onion.
Maharashtra	Sugarcane.	Maize (R), Wheat Gram, Other Rabi Pulses, Cotton, Onion.
Manipur	Maize, Turmeric.	Gram.
Orissa	Sugarcane, Chillies (Dry)	Wheat, Barley, Urad (R), Mung (R), Chillies (Dry).
Punjab and Haryana	Tur (K), Potato, Sugarcane, Ginger, Chillies (Dry), Sweet Potato, Turmeric.	Wheat, Barley, Small Millets (R), Gram, Tur (K), Other Rabi Pulses, Potato, Castorseed, Rapeseed and Mustard, Linseed, Onion.
Rajasthan	Sugarcane.	Wheat, Barley, Urad (R), Mung (R), Other Rabi Pulses, Tobacco, Castorseed, Rapeseed and Mustard, Linseed.
Tamil Nadu	Summer Rice, Jowar (R), Summer Potato, Sugarcane, Pepper (Black), Chillies (Dry), Groundnut (Late), Sesamum Cotton, Onion Sannhemp.	Winter Rice, Jowar (R), Tur (R), Mung (K), Winter Potato (Hills), Sugarcane, Chillies, (Dry), Tobacco, Groundnut (Early), Cotton, Onion.
Tripura	Autumn Rice, Maize, Sugarcane, Ginger, Chillies, (Dry), Sesamum, Cotton, Jute.	Summer Rice, Chillies (Dry), Tobacco.
Uttar Pradesh	Sugarcane, Chillies (Dry), Cotton, Jute, Mesta.	Summer Rice, Wheat, Barley, Gram, Tur (K), Tobacco, Castorseed, Rapeseed and Mustard, Linseed, Onion, Sugarcane.
West Bengal	Autumn Rice, Maize, Tur (K), Sugarcane, Ginger Chillies (Dry), Sesamum, Jute, Mesta.	Summer Rice, Wheat, Barley, Gram, Tur (K), Urad (R), Other Rabi Pulses, Winter Potato (Plains), Chillies (Dry).
Delhi	Jowar (K), Sugarcane, Tobacco, Onion.	Wheat, Gram, Tur (K), Rapeseed and Mustard, Linseed.
(K)-Kharif	(R)-Rabi.	

**LIST OF PUBLICATIONS**

**Journal**

Agricultural Situation in India (Monthly)

**Periodicals**

Agricultural Prices in India

Agricultural Wages in India

Cost of Cultivation of Principal Crops

District-wise Area and Production of Principal Crops in India

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