AGRICULTURAL SITUATION IN INDIA

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Agricultural Situation in India

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Contents

Part I

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The Journal is brought out by the Directorate of Economics and Statistics, Ministry of Agriculture. It aims at presenting a factual and integrated picture of the food and agricultural situation in India on month to month basis. The views expressed, if any, are not necessarily those of the Government of India.

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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 in Hard Copy as well as Soft Copy in MS Word, 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.

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PART II

STATISTICAL TABLES

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

Weather, Rainfall and Reservoir Situation

- Cumulative Post-Monsoon (October to December) Rainfall for the country as a whole during the period 01st October to 31st December, 2013 is 18% more than LPA. Rainfall in the four broad geographical divisions of the country during the above period was higher than LPA by 76% in Central India & 21% in East & North East India and lower than LPA by (-)10% in North West India & (-) 3% in South Peninsula.

- Out of a total of 36 meteorological subdivisions, 22 subdivisions received excess/normal rainfall, 13 subdivisions received deficient rainfall and one subdivision received scanty rainfall.

- Central Water Commission monitors 85 major reservoirs in the country which have a total live capacity of 154.88 BCM at Full Reservoir Level (FRL). Current live storage in these reservoirs as on 02nd January, 2014 was 105.15 BCM as against 84.92 BCM on 02.01.2013 (last year) and 85.17 BCM of normal storage (average storage of the last 10 years). Current year's storage is 124% of the last year's and 123% of the normal storage.

- As per latest information available on sowing of crops, around 97% of the normal area under Rabi crops have been sown upto 03.01.2014. Area sown under all rabi crops taken together has been reported to be 591.99 lakh hectares at All India level as compared to 562.58 lakh hectares average area on the corresponding date. Area coverage (as compared to average area) is higher by 23.3 lakh ha. in Wheat, 1.7 lakh ha. in Maize, 8.6 lakh ha. in Gram and 3.9 lakh ha. in Rapeseed & Mustard. Area coverage is lower (compared to average area) by (-) 6.1 lakh ha. under Jowar and (-)2.3 lakh ha. under Sunflower.

- A statement indicating comparative position of area coverage under major Rabi crops during 2013-14 (upto 03.01.2014) and the corresponding period of last year is given in the Following Table :

All India ***Crop Situation - Rabi (2013-14) as on 03-01-2014***

C rop Name	Normal Area	Average Area as on date	Area sown reported (In lakh hectares)			Absolute Change over	
			03.01.2014	% of Nor-mal	03.01.2013	Average as on date	Last Year
Wheat	286.36	278.79	302.09	105.5	286.38	/3.30	15.7
Rice	44.30	3.77	3.25	7.3	2.72	-0.6	0.5
Jowar	42,77	41.94	35.89	83.9	38.47	-6.1	-2.6
Maize	12.30	10.93	12.63	102.7	12.22	17	0.4
Barley	6.56	7.63	7.27	110.8	7.71	-0A	-0.4
Total Coarse Cereals	61.63	61.04	56.49	91.7	59.14	-4.5	-2.6

All India Crop Situation - Rabi (2013-14) as on 03-01-2014-*Contd*

Crop Name	Normal Area	Average Area as on date	Area sown reported (In lakh hectares)			Absolute Change over	
			03.01.2014	% of Normal	03.01.2013	Average as on date	Last Year
Total Cereals	392.29	343.60	361.83	92.2	348.23	18.2	13.6
Gram	82,18	86.75	95.39	11 &	90.33		5.1
Lentil	14.64	15.18	15.17	103.6	14.74	0.0	0.4
Peas	7.16	7.70	8.26	115.4	7.93	0.6	0.3
Kulthi(Horse Gram)	2.10	4.80	4.31	205.0	5.17	-0.5	-0.9
Urad	7.61	6.52	6.17	81.0	7.52	-0.4	-1.4
Moong	6.66	3.63	4.56	68.5	4.88	0.9	-0.3
Lathyrus	5.16	4.10	4.01	77.6	3.93	-01	0.1
Others	3.45	6.97	8.53	247.4	8.15	1.6	0.4
Total Pulses	128.97	135.65	146.40	113.5	142.65	10.7	3.7
Total Foodgrains	521.26	479.25	508.22	97.5	490.88	29.0	17.3
Rapeseed & Mustard	61.01	65.86	69.75	114.3	65.05	3.9	4.7
Groundnut	9.09	4.20	4.40	48.3	4.20	0.2	0.2
Safflower	2.79	2.15	1.70	60.8	1.34	-0.4	0.4
Sunflower	8.59	5.93	3.65	42.5	4.80		
Seasamum	2.50	0.57	0.58	23.0	0.49	0.0	0.1
Linseed	3.80	3.83	3.33	87.5	2.56	-0.5	0.8
Others	0.00	0.78	0.38	#DIV/0I	0.51	-0.4	-0.1
Total Oilseeds (Nine)	r87.79	83.33	83.77	95.4	78.95	0.4	4.8
All- Crops	609.05	562.58	591.99	97.2	569.83	29.4	22.2

Source: Crops & TMOP Divisions, DAC

Agriculture :

All India production of foodgrains: As per the 2nd advance estimates released by Ministry of Agriculture on 14.02.2014, production of total foodgrains during 2013-14 is estimated at 263.20 million tonnes compared to 257.13 million tonnes in 2012-13.

Procurement: Procurement of rice as on 2nd December, 2013 was 34.03 million tonnes in Kharif Marketing Season as against 34.94 million tonnes procured last year in the corresponding period. This represents a decrease of 2.6 per cent. Wheat procurement during Rabi Marketing Season 2013-14 is 25.09 million tonnes as compared to 38.15 million tonnes during the corresponding period last year.

Table 1 : Procurement in Million Tonnes

	2010-11	2011-12	2012-13	2013-14
Rice	34.20	35.04	34.04	17.32#
Wheat	22.51	28.34	38.15	25.09*
Total	56.71	63.38	72.19	42.41

* Position as on 1.8.2013. # Position as on 9.1.2014

Off-take: Off-take of rice during the month of November, 2013 was 22.38 lakh tonnes. This comprises 17.41 lakh tonnes under TPDS and 4.97 lakh tonnes under other schemes. In respect of wheat, the total off take was 26.03 lakh tonnes comprising of 15.21 lakh tonnes under TPDS and 10.82 lakh tonnes under other schemes. Stocks: Stocks of food-grains (rice and wheat) held by FCI as on January 1, 2014 were 42.75 million tonnes, which is lower by 35.8 per cent compared to the level of 66.60 million tonnes as on January 1, 2013.

Table 2: Off-take and stocks of food grains (Million Tonnes)

	Off-take			Stocks	
	2011-12	2012-13	2013-14 (Upto Nov, 2013)	Jan 1, 2013	Jan 1, 2014
Rice	32.12	32.64	19.06	32.22	14.69
Wheat	24.26	33.21	17.12	34.38	28.05
Total	56.38	65.85	36.18	66.60	42.74

Note: Minimum Buffer Norms for Rice and Wheat are 13.80 Million Tonnes and 11.20 Million Tonnes respectively as on 1.1.2014.

Economic Growth

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 4.9 per cent in 2013-14 with agriculture, industry and services registering growth rates of 4.6 per cent, 0.7 per cent and 6.9 per cent respectively. The growth in GDP was placed at 4.4 per cent and 4.8 per cent respectively in the first and second quarters of 2013-14.

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	2012-13	2010-11	2011-12	2012-13
1	Agriculture, forestry & fishing	5.0	1.4	4.6	14.6	14.4	13.9
2	Industry	7.8	1.0	0.7	27.9	28.2	27.3
a	Mining & quarrying	0.1	-2.2	-1.9	2.2	2.1	2.0
b	Manufacturing	7.4	1.1	-0.2	16.2	16.3	15.8
c	Electricity, gas & water supply	8.4	2.3	6.0	1.9	1.9	1.9
d	Construction	10.8	1.1	1.7	7.6	7.9	7.7
3	Services	6.6	7.0	6.9	57.5	57.4	58.8
a	Trade, hotels, transport & Communication	4.3	5.1	3.5	27.3	26.7	26.9
b	Financing ,insurance, real estate & business services	11.3	10.9	11.2	17.3	18.0	19.1
c	Community, social & personal services	4.9	5.3	7.4	12.9	12.7	12.8
4	GDP at factor cost	6.7	4.5	4.9	100	100	100

1R: 1st Revised Estimates; AE: Advanced Estimates. Source: CSO.

Table 4 : Quarterly Growth Rate of GDP (per cent)

Sector		2011-12				2012-13				2013-14	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
1	Agriculture, forestry & fishing	5.4	3.2	4.1	2.0	2.9	1.7	1.8	1.4	2.7	4.6
2	Industry	5.7	3.8	2.6	2.1	1.8	1.3	2.5	2.7	0.2	2.4
a	Mining & quarrying	-0.4	-5.3	-2.6	5.2	0.4	1.7	-0.7	-3.1	-2.8	-0.4
b	Manufacturing	7.4	3.1	0.7	0.1	-1.0	0.1	2.5	2.6	-1.2	1.0
c	Electricity, gas & water supply	6.6	8.4	7.7	3.5	6.2	3.2	4.5	2.8	3.7	7.7
d	Construction	3.8	6.5	6.9	5.1	7.0	3.1	2.9	4.4	2.8	4.3
3	Services	8.9	8.5	8.3	7.3	7.7	7.6	6.7	6.6	6.6	5.9
a	Trade, hotels, transport & comm.	9.5	7.0	6.9	5.1	6.1	6.8	6.4	6.2	3.9	4.0
b	Financing , insurance, real estate & business services	11.6	12.3	11.4	11.3	9.3	8.3	7.8	9.1	8.9	10.0
c	Community, social & personal services	3.5	6.5	6.8	6.8	8.9	8.4	5.6	4.0	9.4	4.2
4	GDP at factor cost	7.5	6.5	6.0	5.1	5.4	5.2	4.7	4.8	4.4	4.8

Source: CSO.

B. Articles

Exports and imports of pepper: trends and challenges in india since reforms

Flowarin a d*

Abstract

Indian Pepper is the best quality pepper in the world. In 1950s, India's total export was 15.39 thousand tons without any import. Now India is one of the prominent countries of import and the export is declining continuously. Reasons like, Low productivity and poor system of cultivation are considered as some of them. The reduction in the productivity, High price in the international market compared with the other competing countries, inability to meet the quality standards of Sanitary and Phytosanitory clause etc. are considered as the main factors for this trend. Among the various factors considered, the quality problems and the low productivity are the main attraction here. Thus it is inevitable to analyze the import and export trends of pepper from India, and assess the major problems faced by Indian Pepper trade.

Key words: productivity, Sanitary and Phytosanitory clause.

Introduction

The word "Pepper" is derived from the Sanskrit name "Pippali" known as the "King of Spices" has remained the most precious and valuable form of spices in the world. It is also called as "Black gold" due its durability and value. It was the Pride and boast of India as India was the monopolist in the pepper export and of best quality in the world market. India's share in the global export of pepper was as high as 66.32 percent in 1950s. Until 1980s India was supplying 40 percent of world's pepper demand. Nowadays, India's export of pepper is declining and became one of the major importers in the world. In this paper an attempt is made to assess trend in export and import of pepper since reform and also the major challenges faced by the Indian Pepper trade. The earlier studies reveal that India's pepper yield is the lowest in the world mainly due to poor fertilizer application and improper pest control (KVRaju2001). At the same time, the trend in the production also influences the export of pepper. In addition to this, demand supply factors domestic and foreign price fluctuations influence the pepper exports (K Mukundan and P Indiradevi 2000). While examining the country wise exports from India, in the 1970s, USSR was the largest importer of Indian pepper. But the disintegration of USSR in 1990s, made a big blow to the Indian pepper exports. Likewise, the economic crisis in the European Nations followed by the foreign exchange crisis made the same impact. The emergence of new suppliers like Malaysia and Brazil made the situation more pathetic (K V Raju, 2000, Kees Burger and Hidde P smith2000). Survival of the Indian spices industry in general, and Pepper economy in particular, depends on how we are able to withstand this competition (K Sivaraman etal.2002) with the instabilities in the yield and stiff competition from the other crops like Cardomom, Coffee, Rubber in terms of production, area and yield (P D Jerome 1994). Another factor which hinders pepper export from India is the inability to meet the stipulated quality standard of the importing nation (K Satheesh Babu etal.1996). Even though, USA and USSR were the stable export markets for Indian pepper during the pre –WTO period and in the post-WTO period, Canada and US remained

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comparatively stable markets for India (R Sujatha and Eswara Prasad2008).Thus it is derived that the low productivity, low competitiveness, the international quality standards are considered as the crucial challenges faced by Indian Pepper trade.

Methodology

The paper covers the period from 1990-2012 as Indian Spice trade had witnessed a drastic change since the disintegration of USSR, change in the food habits of the Europeans and the new liberalization experience. Even though, India exports variety of pepper like White pepper, Green Pepper, Black pepper etc, the paper concentrates on the Black pepper as it is the major pepper variety that India exports. The data sources mainly include reports of Spice Board of India, RBI Hand book on Indian Economy, International Pepper Community and other national and International journals.

Spices in India

Spices are high value and low volume commodities of commerce and also a high foreign exchange earner in the world market. Fortunately, India land of "Quality spices" is famous of majestic black pepper ,elusive cardamom, refreshing ginger, Colorful turmeric, fiery chilly and a host of other spices like Cumin ,Coriander,Fenel,Fenugreek,Garlic,tejapat,Cassia,Aniseed,nutmeg,mace and Saffron from time immemorial. Thus calls the spice bowl of the world. India is the largest exporter; producer and consumer of spices in the world .There had been a continuous and flourishing monopoly spice trade between India and Greek, Roman, Arabs, Portuguese etc. Since Indian spices are of finest quality with inelastic demand, India had an unbreakable monopoly over black pepper and Cardamom.

India still maintains as the largest producer (70percent), exporter (46 percent) and the consumer (90 percent of her total production) of spices. Including US, Europe, Japan, East Asia, Middle East, more than 120 countries are importing Indian spices with an impressive share of 46 percent. Out of 109 species listed by International Organization for Standardization, India grows about 60 of these spices. Even though India produces variety of spices the import bill on spices increasing. The product diversification, increased domestic demand and the low productivity are the attributing factor for this. Out of these spices pepper plays a vital role since its import is increasing significantly. Concerned to pepper it is the low productivity the major challenge.

Production and Productivity of Pepper in India

As per the reports of International Pepper Community, India stands fifth position behind Vietnam, Indonesia, Brazil and Malaysia (2011-12). It was of the low productivity which made India to reach in to the fifth position in the world market.

Table: 1 Percentage share of Production by Pepper in Different countries

Production of pepper by countries	Brazil	India	Indonesia	Malaysia	Sri Lanka	Vietnam
1990-91	6.35	8.89	7.31	11.85	1.45	_
1995-96	4.16	7.52	8.14	4.97	2.71	_
2001-02	8.94	10.80	8.97	10.33	6.04	6.23
2002-03	9.36	10.94	10.34	9.18	9.67	8.35
2003-04	10.40	8.89	11.03	8.03	9.64	9.46
2004-05	9.36	8.48	8.00	7.65	8.03	11.13
2005-06	9.26	9.57	8.83	7.27	9.67	10.57
2006-07	9.26	7.52	7.17	7.27	9.86	11.13
2007-08	8.84	6.85	8.00	7.65	11.09	9.46
2008-09	8.53	6.85	7.17	8.41	9.69	10.01

2009-10	8.47	6.84	6.90	8.41	10.00	12.52
2010-11	7.07	6.84	8.14	8.99	12.15	11.13

Source: International Pepper Community, Value in MT

Compared with the other pepper producing countries, the performance of India is not impressive and the production has declined continuously. Other than Malaysia, all countries' production is increased substantially especially Sri Lanka and Vietnam. The competing countries express a high productivity while India lags behind them.

Table: 2 Production and Productivity Trend of Pepper in India

1991- 92	52010	_	276
1992-93	50760	-2.40	282
1993-94	50000	-1.50	268
1994-95	55000	10.00	269
1995-96	65000	18.18	314
1996-97	60000	-7.69	353
1997-98	65000	8.33	308
1998-99	75000	15.38	316
1999-00	58000	-22.67	370
2000-01	79000	36.21	239
2001-02	80000	1.27	298
2002-03	65000	-18.75	282
2003-04	51000	-21.54	317
2004-05	78860	54.63	315
2005-06	89200	13.11	306
2006-07	50000	-43.95	194
2007-08	50000	0.00	211
2008-09	50000	0.00	251
2009-10	50000	0.00	275
2010-11	50000	0.00	251
2010-11	50000	0.00	251
2011-12(p)	43000	-14	119

Source: International Pepper Community, production in metric tons, Productivity in kg per hector

The production of Pepper had increased during 1997-02 periods mainly due to the bumper crops and it fallen dramatically in the following years. The productivity also followed the same trend. The production of Indian pepper is mainly concentrated in Kerala even though Karnataka exhibits high productivity. In Kerala, Wayanad and Idukki are the key pepper producing districts. Though, Kerala is the largest pepper producing state, the productivity of Kerala shows a decreasing trend. The low productivity trend of Kerala is mainly attributed to inter crop cultivating practices followed in the pepper production and reduction in the cultivating area with less productive pepper vines, reckless use of fertilizer. In 1995-96, the area under pepper cultivation in Kerala was

19, 0840 hector which was 3,550 hector in Karnataka. While 2000-01, Kerala's area reached in to 2, 0 2130 hector, Karnataka is 7, 250.Again, in 2009-10 a drastic change is seen in the area distribution. The area under pepper cultivation in Kerala had decreased to 1,7 1489 hector and Karnataka has increased to 19,706 hector .Whereas, it is 17, 2182 hector and 21,061 in 2011-12 respectively.

Table: 3 Productivity of Pepper

year	Kerala	Karnataka	India
1990-91	278	173.4	276
1995-96	658	198.9	353
2000-01	301	213.9	298
2005-06	368	260.2	194
2010-11	263	866	216
2011-12	122	751	119

Source: Spice Board of India, Kochi

At the same time, average productivity of pepper in Brazil is 3400kg in Malaysia it is 4,130 kg per hector while it is 287 kg per hector in India. Moreover, the domestic consumption in India is higher than in any pepper producing countries. The major factor for this trend is mainly due to the monoculture practice followed in these countries rather than the inter crop cultivation in India. In India 30 percent of the production is consumed by ourselves. In Indonesia it is 15 percent, Brazil and Malaysia are 17 percent and 3 percent respectively. Now it is Vietnam which contributes the major share of pepper in the international market. Simultaneously, the price of Indian pepper is high as India cannot compete in the international market. In the last two-three years, price in India were often dollar1000 per ton higher than in other producing countries. Also, the quality of products from the countries like Sri Lanka is better than Indian pepper. Vietnam offers the ASTA grade pepper, comparable to India's Malabar grade, at low price .Therefore, India falls behind in the traditional market of the European Union and US. According

to IPC (International Pepper Community) estimates, global exports of the commodity was at 2, 14,541 ton in 2004.Vietnam stands first with 85,tones of Black pepper and 10,000 tons of White variety. India is likely to export 25,000tones.Of this 23,200 tones would be Black pepper .IPC reports holds that, overall global exports including 16,200tones from the five non-IPC countries of China, Thailand, Madagascar, Cambodia and Ecuador, would stand at 2,30,740 tones. Recently, Madagascar exhibits a positive trend in the global export market. This edge is mainly attributed to the high productivity they maintained. It is reported that, the Madagascar pepper yields more than four times of Indian pepper and per hector production is more than 2000 kg. India now plans to plant the Madagascar variety expecting the productivity augmentation. Due to the low productivity India lags behind in the international market. The table: 4 express this trend.

Pepper Trade of India

Since the ancient times itself, India had made its landmark in the spice trade particularly in pepper. India now became a net importer. Table: 4 elicit that, Indian export follows a negative trend and import is increasing continuously.

Table: 4 Pepper trade of India

Year	Export in qty	Export growth	Import in Qty	Import growth
1991- 92	20,535	_	2163	_
1992-93	23,821	0.16	1686	-22.05
1993-94	48,743	1.05	858	-49.11
1994-95	37,264	-0.24	2413	181.24
1995-96	26,244	-0.30	2186	-9.41
1996-97	47,893	0.82	2292	4.85
1997-98	35,907	-0.25	2153	-6.06
1998-99	35,109	-0.02	3,516	63.31
1999-00	42,824	0.22	3,048	-13.31
2000-01	21,830	-0.49	4,028	32.15
2001-02	22,877	0.05	6,328	57.10
2002-03	21,609	-0.06	15,392	143.24
2003-04	16,700	-0.23	14,300	-7.09
2004-05	14,148	-0.15	17,725	23.95
2005-06	17,363	0.23	18,857	6.39
2006-07	28,750	0.66	16,870	-10.54
2007-08	35,000	0.22	13,500	-19.98
2008-09	25,250	-0.28	10,750	-20.37
2009-10	19,750	-0.22	18,100	68.37
2010-11	21,500	0.09	16,100	-11.05
2011-12	26,700	0.24	17,565	9.10

Source: International Pepper Community, quantity in metric tons.

As far as the region wise export is concerned, the region wise direction of pepper during the period 1951-52 to 1955-56, 63 percent of our export was concentrated to American zone. After a short decline, it maintained a similar trend in the first half of the 1990s.Due to the reduction of production in the other producing countries, India's export increased in the mid 1990s to the American zone and East European countries. One thing needs special attention that export towards the Soviet Union had witnessed a negative trend followed by its disintegration. In 1997-98, 12.24 per cent of India's export is directed to the East European region. It is visible that, American zone is the major attractive zone of export of India but the table indicates that, the export to the same is decreasing continuously with -1.20 times, where as the export to Africa had expressed a positive trend of 9.26 fold though quantity wise it is decreasing .But it will be a promising market in future. There is falling trend is visible in the export to the Pacific and Oceana region. Thus there was shift in the direction visible as the export has turned up from Europe to the African region. This turn is mainly due to the arrival of the new pepper producing countries with same quality of Indian pepper with lower price. Thus there is a significant shift in the region wise export. The table:5 elicits the region wise export of pepper from India.

Table: 5 India export destination of black pepper during 2001-12

Country	Africa	America	Asia	Europe	Pacific& Oceania	TOTAL
2001	303	11,380	1,652	5,115	410	18,860
2002	182	11,492	1,277	6,043	473	19,468
2003	73	4,640	1,882	3,977	593	11,165
2004	104	2,539	1,113	3,230	410	7,395
2005	93	3,072	1,009	3,081	211	7,466
2006	331	8,889	2,024	5,258	353	16,855
2007	686	12,480	3,766	6,898	480	24,311
2008	620	8,270	3,709	4,533	309	17,441
2009	197	5,851	2,406	3,078	333	11,866
2010	204	5,850	2,221	2,992	191	11,458
CAGR	9.26	-1.20	9.41	-3.62	-6.79	-0.81

Source: International Pepper Community, Quantity in metric tons.

Thus it can be derived that, the direction wise export is concerned, USSR was the major importer of Indian pepper but after the disintegration, the export to USSR declined continuously. There is shift in the direction in the following years as the export of pepper is mainly concentrating to USA.

Table: 6 Country wise percentage of import of pepper from India

Country	2006-07		2007-08		2008-09		2009-10		2010-11	
	Quantity	Value	Quantity	Value	Quan-tity	Value	Quantity	value	Quan-tity	val-ue
USA	48.34	47.09	41.42	40.71	39.52	39.46	43.74	41.89	36.72	
UK	6.97	6.69	5.19	4.97	6.00	6.93	8.12	9.26	7.84	8.54
Canada	3.85	4.12	3.99	4.08	5.07	4.70	4.54	4.39	5.66	5.51
Italy	4.35	4.29	4.57	4.41	5.10	4.66	4.22	3.98	4.77	4.72
Australia	3.48	4.04	3.10	3.27	3.18	3.38	2.85	3.08	3.14	3.57
Vietnam	1.00	1.03	1.58	1.50	4.78	3.70	2.92	2.81	4.14	3.53
Germany	4.89	5.34	4.83	5.28	4.76	4.91	5.21	6.20	3.79	3.48
Total	100	100	100	100	100	100	100	100	100	100

Source: International Pepper Community, quantity in metric tons. Quantity in ton and value in lakh.

Import of india

As far as the import is concerned, India imported about the same quantity exports of Black pepper (2013).Majority of these imports were from Vietnam where the price advantage is at its best in the country at present. India offers ASTA grade pepper at dollar 6,800 per ton, while it is dollar 400 per ton less in Vietnam (2013).Indonesia offers dollar 6,500-6,200per ton (2013).In the last couple of years ,India became a net importer of Black pepper as the per ton cost is highest in India. With Indonesian Black pepper become cheaper in the international market, India had started importing Black pepper from Indonesia too. The import contract is mainly being executed by spice exporters of the country to meet the input requirements for export bound production of value –added pepper products. The products developed from pepper broadly fall into four groups- black pepper, white pepper, green pepper and oil and oleoresin of pepper. Black pepper is the whole dried fruit of the plant, while white pepper is the dried seed after removing the berries. White pepper is neither too hot nor too cold, and is supposed to be the best of all pepper. India exports all of these products. The mounting import is mainly aimed for the production of these diversified products and the re exports. Thus the improvement in productivity became an indispensable goal for the export and diversification requirement.

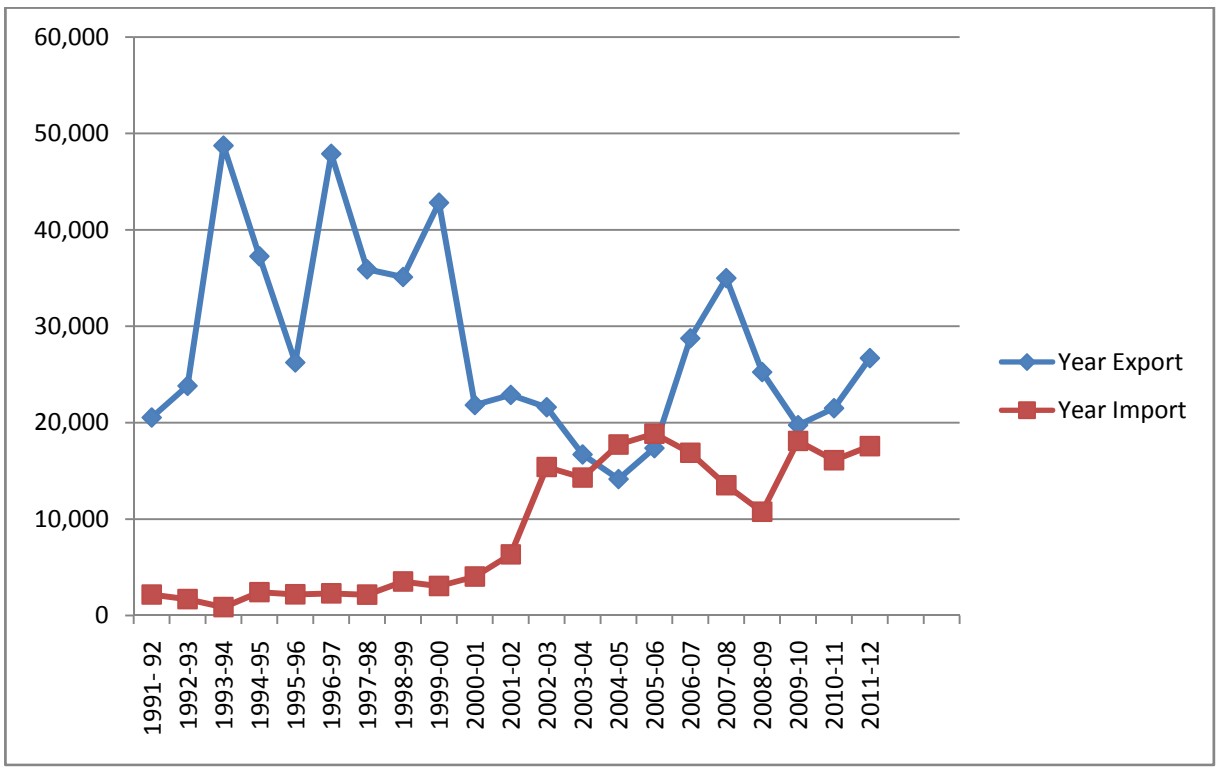
Table: 7 Net Export and Export production ratio of pepper of India

year	Net exports	Export /production
1991-92	9.49	0.39
1992-93	14.13	0.47
1993-94	56.81	0.97
1994-95	15.44	0.68
1995-96	12.01	0.40
1996-97	20.90	0.80
1997-98	16.68	0.55
1998-99	9.99	0.47
1999-00	14.05	0.74
2000-01	5.42	0.28
2001-02	3.62	0.29
2002-03	1.40	0.33
2003-04	1.17	0.33
2004-05	0.80	0.18
2005-06	0.92	0.19
2006-07	1.70	0.58
2007-08	2.59	0.70
2008-09	2.35	0.51
2009-10	1.09	0.40
2010-11	1.34	0.43
2011-12	1.52	0.53

Source: Spice Board of India, Kochi

From Table: 7 it is visible that the net export is decreasing continuously especially from 1990s where as the export production ratio remained more or less the same. That is the reduction in the export is not only due to the low productivity but also the entry of the other pepper producing countries.

Figure: 1 EXIM trend of Indian Pepper



Source: International Pepper Community, production in metric tons.

From the figure:1, it is derived that, the import of pepper had increased especially after 2002-03 onwards mainly due to the increased production of value added products of pepper and this was again augmented by the entry of Vietnam. Vietnam producing as the same quality of Indian pepper with less price compared to India. Thus it would rather to import than producing domestically to satisfy its increasing requirements. Nowadays India imports pepper for the re exports and also for the production of diversified pepper products than before. Pepper Oil, Pepper Oleoresin, green pepper sauce are some of them.

Pepper trade and quality requirement

The productivity trend also throw light on other issues of the incapability to meet the Sanitary and Phytosanitory agreement of WTO and other quality controls of the importing countries lead to a reduction in the exports. Aflatoxin and pesticide residues are the main concerns for the Indian spice industry especially pepper. The agreement explicitly recognizes

the right of government to take measures to protect human, animal and plant health and, these measures should be taken only to the extent necessary for health protection, on the basis of scientific principles and evidence. The agreement covers the measures to protect human and animal life from food-borne risks, human health from animal or plant carried diseases; animal and plants from pests and diseases; and the territory of a country from the entry, establishment, or the spread of pests. In sum, Sanitary and Phytosanitory measures are meant to ensure food safety and to prevent the spread of diseases among animals and plants. It is seen that the clause will negatively affect the developing countries in bidirectional as most of the developing countries fail to fulfill the quality and safety clauses in the agreement. Many developing countries find it difficult to effectively participate in the standardization process due to lack of technical expertise and financial constraints. Even though, 89 per cent of all countries are in the category of developing and least developed countries, since most of them are unable to attend the meetings of the Standardization Committees, the developed countries fix standards which are often difficult for developing countries to comply with. Moreover the developed countries are using this agreement as a non –tariff barrier to trade. The other major concern is that, the agreement mainly covers the primary products. Equivalence of Sanitary and Phytosanitory measures is of special relevance to the developing countries when one takes in to account the share and destination of their agriculture exports, and considers that, they face climatic, developmental and technological conditions that often differ from those prevailing in developed countries.

Thus we can derive that, the agreement is not dissimilar to the Indian economy, towards her exports of the primary products specially the spices. It is evident that, India's exports are tending to a decline trend over the major spices, pepper is a special concern. India the sole producer and exporter once, India faces strict competition from her neighboring countries-Vietnam, Indonesia, Malaysia, Sri Lanka, Brazil .Even though, there are like climatic fluctuations, productivity problems erratic trends in the production, fluctuations in the domestic prices etc, India faces the major threats in the export is the SPS Agreement. Developed countries are the major markets for our pepper exports and they have their own stringent food laws and regulations. We export Pepper mostly to developed countries like USA, UK, Germany, other European Countries, and Canada etc. These countries had very stringent food laws and regulations to ensure that food which includes spices, are safe, whole - some and produced under sanitary and hygienic conditions. Hence spices exported into these countries should be free from bacterial contamination, mold, micro toxins, harmful chemicals including pesticide residues and other pollutants, insect infestation and filth contributed by animals, insects or insanitary conditions in the farm, warehouse, package or carrier.

Pepper exported to USA should conform to the cleanliness specification stipulated by the American Spice Trade Association (ASTA) and also the regulations enforced by the Food and Drug Administration (FDA), ASTA cleanliness specifications set limits such as number of dead insects in the sample analyzed, amount of mammalian excreta, other excreta, percentage

of weight of berries with mold and or insect infestation and the extent of foreign matter present. Pepper imported to USA failing to meet these cleanliness specifications will be detained and subjected to reconditioning (cleaning to remove the defect) If defects cannot be removed by reconditioning the same may be destroyed or sent back to the country of its origin. In addition to ASTA cleanliness specifications pepper imported to USA has to comply with the Defect Action Level of FDA as and when prescribed.

India still has a long way to go to meet this quality requirement to meet and compete with co exporters. The technology should be improved and consider the requirements of the importing countries. The main factor which helps Vietnam to control the foreign market is that, it offers the ASTA grade pepper, comparable to India's Malabar Garbled grade, at a low price. So India falls behind the Traditional market of the European Union. It indicates that India should give keen attention to the Pests control practices and should be followed systematically. Use of pesticides and chemical fumigants should be limited to the correct dosage and should be applied only under the supervision of experts. The need to improve the quality of our pepper is not a matter that just concerns only the farmer and the trader, but is of great importance to the entire nation. We cannot afford to jeopardize the fame and reputation that we have built up over the centuries through spice trade.

CONCLUSION

The discussion reveals that, India's pepper import is increasing continuously even though India is one of the major producers in the international market and once the sole producer of Pepper. If India is able to import pepper for the other countries at a lower price than it would be better to import from them. But the problem lies in the export. India's pepper productivity as low compared with the competing countries. If India able to increase the productivity by following monoculture practice, using high yielding vines and proper fertilizer use etc, India avails high quality pepper and need not depend on other countries more and export can be boosted. At the same time it should concentrate on the quality facet too. It is the quality which determines the future of product in the international market. Indian Pepper the finest variety in the world lacks some stipulated quality measures of the importing countries and often finds Aflatoxin and pesticide residues and thus loses the traditional market. Thus India has to concentrate on the two strategic requirements of increased productivity and the improved quality maintains.

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On-farm assessment of technological innovations of jute

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Abstract

Jute (*Corchorus olitorius*) is an important commercial crop next to cotton in India. Jute production plays an important role in supplementing the income of the small and marginal farmers particularly of West Bengal. There is wide gap in fibre yield of jute between national productivity, demonstration yield and research results. It urges to reduce the productivity gap with suitable production technology to expedite the farmers' income. In this regard, Central Research Institute for Jute and Allied Fibre (CRIJAF) conducted frontline demonstrations on 131 farmers' field during the year 2005-06 at eight villages viz., *Devok, Koirapur, Masunda, Iswarigacha, Geedha* and *Teghoria* in North 24-Parganas district and Kamarkundu I & II (Bhola) of district Hoogly in southern part of West Bengal. Fibre yield of jute varieties namely, JRO-524, JRO-8432, JRO-66, JRO-128 and S-19 increased by 15.67, 9.84, 6.84, 6.39 and 6.27 respectively over the local check under demonstrations conducted with improved technologies. The highest technology gap were recorded from JRO-66 (11.90 q /ha), JRO-8432 (11.11 q /ha) and JRO-128 (10.02 q /ha). The extension gap was 4.12 q /ha for JRO-524, followed by JRO-8432 (2.59 q /ha). The technology index was lowest for JRO-524 (19.95%), closely followed by S-19 (22.36%). The yield increase for JRO-524E, which is energized seed of JRO-524, was by 10.61% over check. The extension gap for JRO-524E was 2.79 q /ha which was 23.45% as technology index. The results obtained suggest that the variety JRO-524, S-19 and energized JRO-524 are best suited for South Bengal area. The results of the study further indicate that there is a need to adopt multi-pronged strategy to reduce the technology and extension gaps as described in this paper.

Key words: Extension gap, Fibre yield, Frontline demonstration, Technology assessment, Technology gap, Technology index

Introduction

Jute is a crop with glorious history. Jute is used to be called as "golden fibre". This is threatened due to the strong competition from synthetics and bulk handling. However, the economic importance of jute is becoming promising as a source of raw material in industrial sectors for diversified uses, which have been explored recently. Jute has higher economic and socio-economic importance than ever before for many reasons. Jute is an environmentally friendly product, which is supplementing and/or replacing synthetics. Jute provides raw material to a major industry and contributes significantly to country's economy. It engages about 4 million farmers, 0.25 million industrial workers and 0.5 million traders with gainful employment in jute sector (Sen *et. al*., 2006).

Thus, the production of jute fibre has high socio-economic significance in our country. The economy of the small and marginal farmers of the West Bengal is more concerned with jute cultivation. The crop is mainly grown by small (25 %) and marginal farmers (65 %). As such their investment and risk bearing capacity is poor. Even though suitable technologies are available and there is a wide scope to increase the production of jute fibre, there

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exists a gap in adoption of the technologies (Das *et. al*., 2006). Frontline demonstration is an effective tool to evaluate the performance of technologies under on-farm conditions and also to demonstrate its effectiveness to the farmers to facilitate its adoption. In this context, the data generated through Frontline demonstrations with jute were subjected to analysis of the gaps in adoption and extension for a better understanding on the possibility of increasing the productivity of jute fibre.

Methodology

A total of 131 farmers from different categories were selected purposively from eight villages viz., Devok, Koirapur, Masunda, Iswarigacha, Geedha and Teghoria of North 24 Parganas district and Kamarkundu I & II (Bhola) of district Hoogly in West Bengal for conducting frontline demonstrations (FLDs) on their field. Materials for the present study comprised of five high yielding jute (*Corchorus olitorius*) varieties viz. JRO-524, JRO-8432, JRO-66, JRO-128 and S-19, and JRO-524E (rice necrosis mosaic virus inoculated seed i. e. energized seed with recommendation of N:20, P_2O_5:10, K_2O:10 fertilizer dose without use of plant protection chemicals) with the recommended package of practices. Sowing was done in the month of April-May, while harvesting in the month of August. Fertilizer schedule was N:60, P_2O_5:30, K_2O:30 kg /ha for all the varieties except for JRO-524E. The need-based plant protection chemicals were used to control the insect-pests. Locally cultivated variety namely *Navin* (JRO-524) as practiced by the non-adopted farmers with their own management system was taken as local check. In the present study the data were collected through personal interviews, group discussion and empirical observations with the help of semi-structured interview schedule and field record of frontline demonstration plots and local practices.

To estimate the technology gap, extension gap and technology index, the following formulae were used after Samui *et. al.,* 2000 and Sagar and Chandra, 2004.

1. Technology gap = Potential yield – Demonstration yield
2. Extension gap = Demonstration yield – Farmers yield
3. Technology index = [(Potential yield – Demonstration yield) / Potential yield] x 100

Results and discussion

The potential and field performance of the newly released jute varieties along with the local check were evaluated and the data are presented in Table 1.

Table 1. Productivity of jute varieties, yield gap and technology index

Variety	No. of demon stration	Area (ha)	Fibre yield (q /ha)			% increase in fibre yield over FP	Techno -logy gap (q/ha)	Extension gap (q/ha)	Techno -logy index
			Potential	Demons.	Local check				
JRO-524	65	10.65	38.00	30.42	26.30	15.67	7.58	4.12	19.95
JRO-8432	12	2.03	40.00	28.89	26.30	9.84	11.11	2.59	27.78
JRO-66	09	1.10	40.00	28.10	26.30	6.84	11.90	1.80	29.75
JRO-128	20	2.67	38.00	27.98	26.30	6.39	10.02	1.68	26.37
S-19	09	1.66	36.00	27.95	26.30	6.27	8.05	1.65	22.36
JRO-524E	16	2.01	38.00	29.09	26.30	10.61	8.91	2.79	23.45

FP = Farmers' practice

The percentage increase in the fibre yield over the farmers practice was 15.67, 10.61, 9.84, 6.84, 6.39 and 6.27 for JRO-524, JRO-524E, JRO-8432, JRO-66, JRO-128 and S-19, respectively. The technology gap was large that ranged from 7.58 q /ha for JRO-524 to 11.90 q /ha for JRO-66, which corroborates to the gap in demonstrated yield over potential yield. The technology gap observed may be attributed to variation in the soil fertility, weather conditions and implementation of management practices. Though the technology gap among the varieties did not vary widely, development of location specific technology appears to be necessary to achieve the expected yields from different jute varieties. The lowest yield but one, was recorded in the demonstration plot for the variety JRO-66, which did not perform up to the mark indicating a technology gap of 11.90 q /ha. JRO-8432 and JRO-128 showed the technology gap of 11.11 q /ha and 10.02 q /ha respectively, which needs some more efforts from the extension agencies to bridge.

Comparatively higher extension gap (4.12 q /ha) was recorded for variety JRO-524, followed by JRO-524E (2.79 q /ha) and JRO-8432 (2.59 q /ha). It is indicated that there is need to educate the farmers through various means for optimizing the fibre yield by adopting the improved jute technology practices as technology gap is realizable under on-farm conditions. More use of newly released high yielding varieties by the farmers will subsequently change the existing trend of extension gap as to reverse. The new technology will eventually motivate the farmers to adopt the promising technology with use of proper management practices for increasing the profitability. These findings also corroborate with the results reported earlier by Chapke *et. al.*, 2006[a].

The technology index shows the feasibility of the evolved technology at the farmers field. The lower the value of technology index, more is the feasibility of the technology. The technology index of variety JRO-524 (19.95%) is closely followed by S-19 (22.36%) and JRO-524E (23.45%). The higher technology index of variety JRO-128 (26.37%), JRO-8432 (27.78%) and JRO-66 (29.75%) indicate existence of a considerable gap between the technology performance at research station and on the farmers' field.

The technology index of three jute varieties JRO-524, S-19 and JRO-524E point that these varieties are performing quite well in the south Bengal conditions and will help to increase the productivity of jute in this area through the adoption of improved practices. It is also supported with performance of the variety, JRO-524 and JRO-524E in terms of economic return than the others varieties, except S-19 (Table 2).

Return-cost analysis of the Frontline Demonstrations

It is important to know the economical yardstick of the demonstrated jute technology as compared to the existing practices of the farmers. All the input-output cost data, except fixed cost, were recorded during the season and analyzed. The comparative benefit cost analysis data are presented in the Table 2.

Highest net return was obtained from the energized JRO-524 variety (JRO-524E) (Rs. 18538 /ha) followed by JRO-524 (Rs. 18425 /ha), JRO-8432 (Rs. 16080 /ha), JRO-66 (Rs. 15009 /ha), JRO-128 (Rs. 14840 /ha) and S-19 (Rs. 14738 /ha). On an average cost of cultivation per hectare was Rs. 23,493, giving a net return of Rs. 16,272 per hectare due to high price of the fibre in year 2005, which ranged from Rs. 1180 to Rs. 1300 per quintal. In terms of benefit-cost ratio (Fig. 1), the variety JRO-524E ranked first (1.85:1) followed by JRO-524 (1.78:1), JRO-8432 (1.67:1), JRO-66 (1.63:1), JRO-128 (1.62:1), and S-19 (1.62:1). The variety S-19 did not give comparatively encouraging results in terms of benefit cost and net return.

Table 2. Economics of cultivation of jute

Sl.	Variety	Fibre yield (q ha^{-1})	Cost of cultiva -tion (Rs ha^{-1})	Gross return (Rs ha^{-1})	Net return (Rs ha^{-1})	B:C ratio	% of additi -onal yield over FP (q ha^{-1})	Additi -onal return over FP (Rs ha^{-1})
1.	JRO-524E	29.09	21874	40412	18538	1.85	10.61	5871
2.	JRO-524	30.42	23664	42089	18425	1.78	15.67	5758
3.	JRO-8432	28.89	23871	39952	16080	1.67	9.84	3413
4.	JRO-66	28.10	23871	38880	15009	1.63	6.84	2342
5	JRO-128	27.98	23808	38648	14840	1.62	6.39	2173
6.	S-19	27.95	23871	38609	14738	1.62	6.27	2071
Average		28.74	23493	39765	16272	1.69	9.27	3605
7.	Check	26.30	22618	35285	12667	1.56	-------	-------

FP = Farmers' practice

Variety-wise comparison of additional gain showed that the demonstrated improved varieties gave more fibre yield under FLDs that ranged from 6.27% from the variety S-19 to 15.67% from the variety JRO-524 over farmers' practice. Besides that, the additional economic return obtained ranged from Rs. 2071 /ha from the variety S-19 to Rs. 5871 /ha from the variety JRO-524E over farmers' practice. It is obvious from the above data that the JRO-524E gave more benefit due to less involvement in cost of cultivation and JRO-524 gave more fibre yield as the variety is well fitted under the agro-climatic conditions (Chapke *et. al.,* 2006[b]).

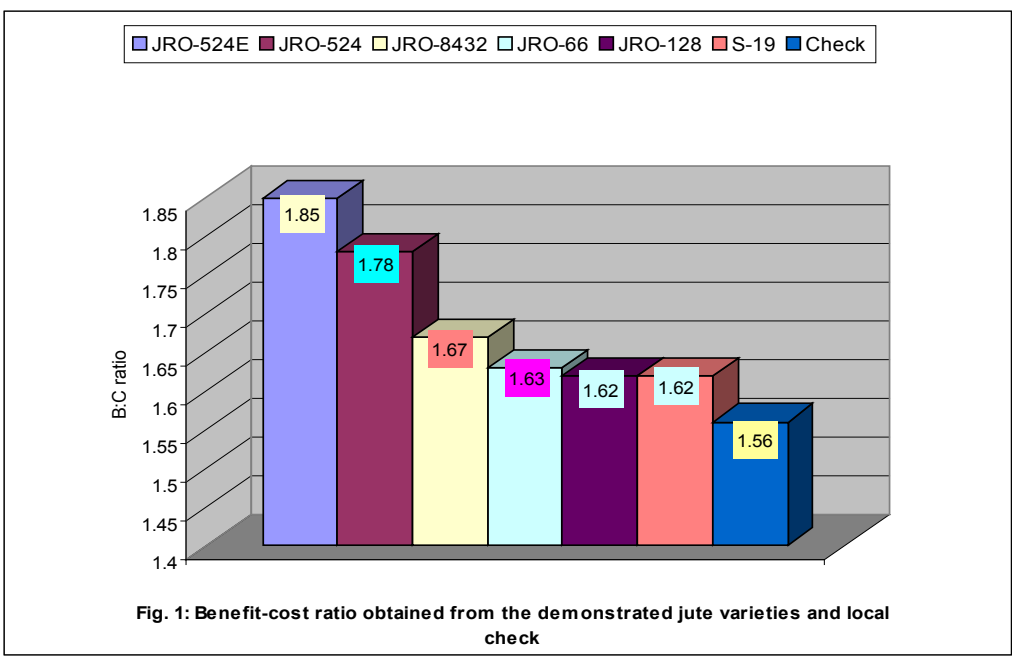

Fig. 1: Benefit-cost ratio obtained from the demonstrated jute varieties and local check

Conclusion

Under diversified agro-climatic conditions, three varieties of jute viz., JRO-524, S-19 and JRO-524E have given encouraging results over local check and has potential to perform well with timely management practices in south Bengal situations. These varieties may be popularized with full package of practices to explore the potential in field conditions and mitigate the extension gap. Simultaneously efforts need to be made to reduce the large technology gap described in this paper. In economic view, an additional cost mainly for inputs was increased slightly in FLDs over local check. However, it was recovered by increasing gross and net return substantially and resulted in more benefit cost ratio than the local check. The use of latest production technologies with timely systematic management would increase productivity of jute and income of the small and marginal farmers who are mainly associated with this crop. There is need to implement multi-pronged strategy, which includes vertical and horizontal productivity growth through better adoption.

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Role of Different Agencies in Growth of Self Help Group-Bank Linkage Programme in India

Dr. Sanjay Kumar*

I. Introduction

The country has witnessed a rapid growth of self-help groups (SHGs) in the last two decades or so. Basically, SHGs are being promoted as a part of the microfinance interventions aimed at helping the poor to easily obtain financial services like savings, credit and insurance. Poverty is one of the persistent problems prevalent in the developing and under-developed countries of the world, to which India is no exception. Credit needs of the rural poor are perceived to be small, unpredictable, urgent and frequent in nature. The structure of rural financial market in India is dualistic consisting of both formal and informal financial intermediaries. The promotion of SHGs in India began in 1992 with the launch of the SHG bank linkage by National Agricultural and Rural Development (NABARD). The purpose of this programme is to improve rural poor access to formal credit system in a cost effective and sustainable manner by making use of SHGs. SHG has evolved as an accepted institutional framework to provide financial services to the poor. Further, it is regarded as better mechanism to reduce poverty gradually as against giving one time loan for productive assets which may or may not lead to sustained increase in income (Madheswaran and Dharmadhikary, 2001).

The concept of SHG originated from the Grameen Bank of Bangladesh started by Dr Muhammad Yunus in 1983 to bridge the gap between formal and informal system. SHGs are 'small socio-economically homogenous affinity groups of rural poor, voluntarily formed to save and mutually contribute a common fund to be lent to its members as per group decision'. They mutually agree to contribute a common fund and to meet their emergency needs on a mutual help basis. An economically poor individual gains strength as part of group. Besides, financing through SHGs reduces transaction costs for both lenders and borrowers. While lenders have to handle only a single SHG account instead of a large number of small-sized individual accounts, borrowers as part of a SHG cut down expenses on travel (to and from the branch and other places) for completing paperwork and on the loss of work days in canvassing for loans. The SHG-bank linkage programme (SBLP) has been accepted as an effective tool for inclusive growth by extending various services to the poor rural households. Since 1992, the SBLP has come a long way. Beginning with a modest number of 225 SHGs in 1992-93 in India, a total of 11.48 lakhs SHGs were credit linked with credit to the extent of ` 16535 crore in 2011-12. However, there is skewed growth of the SHGs across the regions of the country. The Southern region accounts for 46 per cent of the SHGs and 76 per cent of the SHG credit. While, the Northern region accounts a mere 5.1 per cent of the number of SHGs and only 2 per cent of the SHG credit (NABARD, 2012). Though the regional spread of the programme is highly skewed with highest concentration in the southern states, it has started picking up pace in other states. The Commercial Banks, Regional Rural Banks, Cooperative Banks and NGOs have contributed significantly to the rapid spread of the programme. Therefore, the present paper highlights the role of different agencies in growth of SHGs in India.

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II. Methodology

The present study is based on secondary data. Secondary data comprising chiefly of the number and agency-wise distribution of bank linked SHGs, their savings, loans, etc. were collected from various published sources of NABARD. Further, compound annual growth rate was calculated to analyze the pattern of growth of the SHGs in India.

III. Progress of SHG-bank linkage programme in India

The SHG-Bank linkage programme has grown at a tremendous pace during last two decades and emerged as the most prominent means of delivering micro-finance services in India. The programme, beginning with a modest number of 255 SHGs financed by banks in 1992-93, experienced a tremendous growth. Table 1 shows the trends in the number of SHGs financed by banks, amount of bank loans and amount of bank loan per SHG at the national level during the period 1992-93 to 2011-2012. The number of SHGs linked to banks increased to 149050 in 2000-01 and further to 1147878 in 2011-12 and cumulatively it recorded a compound annual growth rate of 75.20 per cent per annum during 1992-93 to 2011-12.

Table 1- Progress of SHG Bank Linkage Programme, India, 1992-93 To 2011-12

Year	No. of SHGs Financed		Bank Loan(` million)		Bank Loan per SHG (`)
	During the year	Cumulative	During the year	Cumulative	
1992-93	255	255	2.90	2.90	11372
1993-94	365	620	3.60	6.50	10484
1994-95	1502	2122	18.00	24.50	11546
1995-96	2635	4757	36.10	60.60	12739
1996-97	3841	8598	57.80	118.40	13771
1997-98	5719	14317	119.20	237.60	16596
1998-99	18678	32995	333.10	570.70	17297
1999-00	81780	114775	1359.10	1929.80	16814
2000-01	149050	263825	2879.20	4809.00	18228
2001-02	197653	461478	5454.00	10263.00	22239
2002-03	255882	717360	10224.00	20487.00	28559
2003-04	361731	1079091	18555.00	39042.00	36180
2004-05	539365	1618456	29942.60	68984.60	42624
2005-06	620109	2238565	44990.83	113975.43	50914
2006-07	1105749	3344314	65703.88	179679.31	53727
2007-08	1227770	4572084	88492.62	268171.93	63204
2008-09	1609586	6181670	122535.14	390707.07	53688
2009-10	1586822	7768492	144533.04	535240.11	68899
2010-11	1196134	8964626	145477.32	680717.43	75934
2011-12	1147878	10112504	165347.69	846065.12	83665
CAGR (% p.a)	60.95	75.20	85.59	97.63	12.69

Source: NABARD, Annual Reports, Various issues.

Registering a cumulative growth rate of 97.63 per cent per annum for the same period the amount of loans disbursed to SHGs during the year increased from ` 2.90 million in 1992-93 to ` 2879.20 million in 2000-01 further to ` 165347.69 in 2011-12. In 2011-12, the average bank loan disbursed per SHG was ` 83665 as against ` 11372 in 1992-93. While the number of SHGs grew at a rate of 60.95 per cent per annum, bank loan grew by 85.59 per cent per annum.

IV. Agency-wise distribution of SHGs in India

NABARD has been instrumental in promoting and nurturing SHGs by providing financial support to participating agencies in the SGH-Bank linkage programme. The participating agencies include commercial banks, regional rural banks (RRBs) and cooperative banks. These agencies have been effectively playing the role of promoting and nurturing SHGs. The agency-wise distribution of saving linked, loans disbursed to and loans outstanding against SHGs during the years 2007-08 to 2011-12 are given in Table 2, Table 3 and Table 4 respectively.

The agency-wise cumulative savings of SHGs with banks in India over the period 2007-08 to 2011-12 have been depicted in Table 2. A cursory glance of the Table revealed that on an average for the last five years (2007-08 to 2011-12), the number of SHGs linked to savings was 6701297 with saving amount of ` 58195 million per annum and the average saving per SHG amounted to ` 8632. Most of these SHGs were linked by commercial banks (57.76 per cent) followed by RRBs (26.70 per cent) and cooperatives (15.53 per cent). Similarly, the saving amount was mostly with the commercial banks (58.11 per cent), followed by RRBs (24.71 per cent) and cooperatives (17.18 per cent). But, the average savings per SHG were found to be the highest for cooperatives (` 9410) followed by commercial banks (` 8609) and RRBs (` 8222). The compound annual growth rates were found to be the highest for the saving amount (14.25 per cent) followed by number of SHGs linked (11.90 per cent) and saving per SHG (2.10 per cent).

Table 3 presents the agency-wise loans disbursed to SHGs in India during the last five years (2007-08 to 2011-12). It can be seen from the table that on an average ` 13277.20 million loans had been disbursed to 1353638 SHGs during the period 2007-08 to 2011-12 with average loan per SHG amounting to about ` 100991. Further, it may be observed that commercial banks had the highest share of SHGs credit linked (58.92 per cent) followed by RRB (25.29 per cent) and cooperative banks (15.79 per cent). Commercial banks also accounted for as high as 64.39 per cent of the average loans disbursed to SHGs followed by RRB with a share of 26.11 per cent and cooperatives with a share of 9.49 per cent only. The average loans per SHG had the highest compound annual growth rate of 20.36 per cent per annum followed by total loans disbursed to SHGs with 15.28 per cent per annum. But, the total number of SHGs credit linked had a negative compound annual growth rate of -4.22 per cent per annum.

The agency-wise cumulative loans outstanding against SHGs in India have been shown in Table 4 for the period 2007-08 to 2011-12. It can be observed that over the last five years; an average loan amount of ` 270558.40 were outstanding against 4368568 SHGs with average outstanding loan per SHG amounting to ` 61409. Commercial banks again had a major share to the total number of SHGs having outstanding bank loans (64.64 per cent) and amount of outstanding bank loans (70.58 per cent) followed by RRBs (25.33 per cent and 23.53 per cent) and cooperative banks (10.03 per cent and 5.89 per cent). Similarly, the average outstanding loans per SHG were highest for commercial banks (` 154390), followed by RRBs (` 56825) and cooperatives (` 36100). The overall compound growth rates in respect of the number of SHGs having outstanding bank loans, amount of outstanding loans and average outstanding loans per SHG were 5.03, 20.19 and 14.43 per cent per annum respectively.

Table 2-Agency-Wise Cumulative Saving of Shgs With Banks– India, 2007-08 to 2011-12

Year (as on 31st March)	Commercial Banks			RRBs			Cooperatives			Total		
	No. of SHGs Linked	Saving Amount (` million)	Average saving/ SHG (`)	No. of SHGs Linked	Saving Amount (` million)	Average saving/ SHG (`)	No. of SHGs Linked	Saving Amount (`million)	Average saving/ SHG (`)	No. of SHGs Linked	Saving Amount (` million)	Average saving/ SHG (`)
2007-08	2810750 (56.10)	20777.34 (54.89)	7392	1386838 (27.68)	11664.88 (30.82)	8411	812206 (16.21)	5411.67 (14.29)	6663	5009794 (100.00)	37853.89 (100.00)	7556
2008-09	3549509 (57.99)	27729.89 (50.00)	7812	1628588 (26.61)	19897.51 (35.88)	12218	943050 (15.41)	7828.78 (14.12)	8302	6121147 (100.00)	55456.18 (100.00)	9060
2009-10	4052915 (58.29)	36738.92 (59.27)	9065	1820870 (26.19)	12993.75 (26.58)	7136	1079465 (15.52)	12254.42 (15.48)	11352	6953250 (100.00)	61987.09 (100.00)	8915
2010-11	4323473 (57.94)	42300.64 (60.29)	9784	1983397 (26.58)	14353.97 (20.46)	7237	1155076 (15.48)	13508.42 (19.25)	11695	7461946 (100.00)	70163.03 (100.00)	9403
2011-12	4618086 (58.01)	41529.80 (63.39)	8993	2127368 (26.72)	13001.93 (19.85)	6112	1214895 (15.26)	10982.95 (16.76)	9040	7960349 (100.00)	65514.14 (100.00)	8230
Average	3870947 (57.76)	33815.32 (58.11)	8609.20	1789412 (26.70)	14382.41 (24.71)	8222.80	1040938 (15.53)	9997.25 (17.18)	9410.40	6701297 (100.00)	58194.87 (100.00)	8632.80
CAGR (% p. a)	12.64	19.81	6.37	11.10	-1.09	-10.97	10.61	21.67	9.99	11.90	14.25	2.10

Note: Figures in the parentheses indicate the per cent share of each agency to the total

Source: Status of Microfinance, NABARD 2007-08, 2008-09, 2009-10, 2010-11 and 2011-12

TABLE 3- AGENCY-WISE BANK LOANS DISBURSED DURING THE YEAR– INDIA, 2007-08 TO 2011-12

Year (as on 31st March)	Commercial Banks			RRBs			Cooperatives			Total		
	No. of SHGs Linked	Loans Disbursed (` million)	Average loan/ SHG (`)	No. of SHGs Linked	Loans Disbursed (` million)	Average loan/ SHG (`)	No. of SHGs Linked	Loans Disbursed (` million)	Average loan/ SHG (`)	No. of SHGs Linked	Loans Disbursed (` million)	Average loan/ SHG (`)
2007-08	735119 (59.87)	54039.00 (61.07)	73510	327650 (26.69)	26518.41 (29.97)	80935	165001 (13.44)	7935.17 (89.67)	48092	1227770 (100.00)	88492.62 (100.00)	72076
2008-09	1004587 (62.41)	80605.31 (65.78)	80237	405569 (25.20)	31934.90 (26.06)	78741	199430 (12.39)	9994.93 (8.16)	50117	1609586 (100.00)	122535.14 (100.00)	76128
2009-10	977521 (61.60)	97801.85 (67.68)	100051	376797 (23.74)	33332.01 (23.06)	88461	232504 (14.65)	13399.17 (9.27)	57630	1586822 (100.00)	144533.04 (100.00)	91083
2010-11	669741 (55.99)	97245.53 (66.84)	145199	296773 (24.81)	31976.16 (21.98)	107746	229620 (19.19)	16255.63 (11.17)	70794	1196134 (100.00)	145477.32 (100.00)	121623
2011-12	600807 (52.34)	99420.45 (60.13)	165478	304809 (26.55)	50260.51 (30.40)	164892	242261 (21.10)	15666.72 (9.47)	64669	1147878 (100.00)	165347.67 (100.00)	144046
Average	797555 (58.92)	85822.43 (64.39)	112894.90	342319.60 (25.29)	34804.40 (26.11)	104155	213763.20 (15.79)	12650.32 (9.49)	58260.40	1353638 (100.00)	133277.20 (100.00)	100991.20
CAGR (% p. a)	-7.78	15.11	24.81	-4.46	13.66	18.97	0.091	20.28	9.83	-4.22	15.28	20.36

Note: Figures in the parentheses indicate the per cent share of each agency to the total

Source: Status of Microfinance, NABARD 2007-08, 2008-09, 2009-10, 2010-11 and 2011-12

TABLE 4: AGENCY-WISE CUMULATIVE BANK LOANS OUTSTANDING AGAINST SHG–INDIA, 2007-08 TO 2011-12

Year (as on 31st March)	Commercial Banks			RRBs			Cooperatives			Total		
	No. of SHGs Linked	Loan O/S Amount(` million)	Average O/S loan/SHG (`)	No. of SHGs Linked	Loan O/S Amount(` million)	Average O/S loan/ SHG (`)	No. of SHGs Linked	Loan O/S Amount(` million)	Average O/S loan/ SHG (`)	No. of SHGs Linked	Loan O/S Amount (` million)	Average O/S loan/ SHG (`)
2007-08	2378847 (65.61)	114754.70 (67.50)	482340	875716 (24.15)	44210.45 (26.01)	50485	371378 (10.24)	11033.91 (6.49)	29711	3625941 (100.00)	169999.07 (100.00)	46884
2008-09	2831374 (67.02)	161494.28 (71.21)	57037	977834 (23.15)	52244.46 (23.03)	53429	415130 (9.83)	13059.98 (5.76)	31460	4224338 (100.00)	226798.42 (100.00)	53688
2009-10	3237263 (66.73)	201647.12 (71.92)	62289	1103980 (22.76)	61445.82 (21.91)	55658	510113 (10.51)	17289.86 (6.17)	33894	4851356 (100.00)	280382.81 (100.00)	57795
2010-11	3053472 (63.79)	218832.57 (70.09)	71667	1281493 (26.77)	74300.52 (23.80)	57980	451798 (9.44)	19078.56 (6.11)	42228	4786763 (100.00)	312211.65 (100.00)	65224
2011-12	2617199 (60.10)	258102.89 (71.02)	98618	1293809 (29.71)	86135.78 (23.70)	66575	443434 (10.18)	19161.35 (5.27)	43211	4354442 (100.00)	363400.02 (100.00)	83455
Average	2823631 (64.64)	190966.30 (70.58)	154390.20	1106566 (25.33)	63667.41 (23.53)	56825.47	438370.60 (10.03)	15924.73 (5.89)	36100.80	4368568 (100.00)	270558.40 (100.00)	61409.20
CAGR (% p. a)	2.70	21.22	-25.52	11.08	18.37	6.56	4.49	15.98	10.99	5.03	20.19	14.43

Note: Figures in the parentheses indicate the per cent share of each agency to the total

Source: Status of Microfinance, NABARD 2007-08, 2008-09, 2009-10, 2010-11 and 2011-12

V. **Regional disparities in SBLP**

Microfinance under the SHG-Bank linkage programme (SBLP) grew at a tremendous pace during the last two decades at the national level. However, there is skewed growth of the SHGs across the regions of the country. From its very inception, the programme has had major success in the southern region, while its performance has been very poor in the other regions, particularly in the northern, northeastern, central and western regions. The southern region continues to occupy the leading position in the programme in terms of its share in credit linked SHGs as well as loan disbursement and outstanding. Table 5 shows that the southern region only accounted for 61.45 per cent of SHGs and 76.58 per cent of the total loan disbursed with per SHG loan of ` 179492 in 2011-12. Similarly, the share of southern region was 54.10 per cent of the total number of SHGs having outstanding loan and 69.88 per cent of the total outstanding loan with per group outstanding loan of ` 107799. The shares of the remaining regions in the number of SHGs and total disbursed and outstanding loans were very low.

VI. **Non-governmental organizations and SHG-bank linkage programme**

The role and participation of non-governmental organisations (NGOs) in micro credit programme in India needs special focus. Year after year the number of NGOs participating in the programme shows an increasing trend. NGOs play a vital role in rural reconstruction, agricultural development and rural development in our country. With the introduction of microfinance through Self-Help Groups (SHGs), they penetrated into each and every corner in India and actually the NGOs were responsible for converting the pilot project of microfinance into a major programme. NGOs have a crucial role in group formation, nurturing SHGs in the pre-microenterprise stage, capacity building and enhancing credit absorption capacities. NGOs have achieved significant success as promoters and not as providers (Padhi, 2003). Table 6 shows the number of NGOs participating in the SBLP for a period from 2007-08 to 2011-12. The table reveals that the number of NGOs participating in the programme is increasing since the last five years. It increased from 1646 in 2007–2008 to 3013 in 2011–2012 with a cumulative annual growth rate of 15.26 per cent. An average of ` 353.81 million grants were released to an average of 2764 NGOs in India for promotion of SHGs. The table further revealed that an average of 220725 SHGs and 152159 SHGs promoted by the NGOs had been saving linked and credit linked respectively.

Table 5: Region-Wise Progress of SHG-Bank Linkage Programme

Region	Bank loan disbursed to SHGs during 2011-12			Bank Loans outstanding against SHG as on 31 March 2012		
	No. of SHGs Linked	Loans Disbursed (` million)	Loans Disbursed per SHG (`)	No. of SHGs Linked	Loan O/S Amount(` million)	Loan O/S Amount per SHG (`)
Northern	30751 (2.68)	3354.32 (2.03)	109080	212041 (4.87)	11782.75 (3.24)	55568
North Eastern	51003 (4.44)	4512.87 (2.73)	88482	159416 (3.66)	9932.68 (2.73)	62307

Table 5: Region-Wise Progress of SHG-Bank Linkage Programme-*Contd*

Eastern	201201 (17.53)	16240.61 (9.82)	80718	985329 (22.63)	46297.98 (12.74)	46987
Central	58460 (5.09)	7093.68 (4.29)	121342	352452 (8.09)	27802.91 (7.65)	78884
Western	101044 (8.80)	7528.57 (4.55)	74508	289472 (6.65)	13637.83 (3.75)	47113
Southern	705419 (61.45)	126617.63 (76.58)	179492	2355732 (54.10)	253945.86 (69.88)	107799
All India (Total)	1147878 (100)	165347.69 (100)	144046	4354442 (100)	363400.02 (100)	83455

Note: Figures in the parentheses indicate the per cent to the total.
Source: Status of Microfinance, NABARD 2011-12.

Table 6- Grant Support Sanctioned to Non Governmental Organisations (Ngos) Working as Shpis, India, 2007-08 To 2011-12

Year	No. of Beneficiary NGOs	Grant Released (` Million)	No. of SHGs Saving Linked by NGOs	No. of SHGs Credit Linked by NGOs
2007-08	1646	209.31	162471	111828
2008-09	2723	277.39	187203	134861
2009-10	3078	346.97	232217	157831
2010-11	3363	447.14	254581	175080
2011-12	3013	488.23	267152	181196
Average	2764	353.81	220725	152159
CAGR (% p.a)	15.26	24.25	13.91	13.04

Source: Status of Microfinance, NABARD, Various issues.

Conclusion

Self-help groups are fast emerging as powerful tool of socio-economic empowerment of the poor in our rural areas. SHG bank linkage programme (SBLP) has witnessed phenomenal growth in India in the past years since its inception in 1992. SBLP aims at bringing about financial inclusion, mainly through establishing linkage, between formal institutions and informal groups which have the potential to overcome the hurdles faced by the poor in accessing financial services from formal financial institutions. Over 103 million rural households have now access to regular savings through 7.96 million SHGs linked to banks in India. Commercial banks, regional

rural banks, cooperative banks and NGOs have contributed significantly towards the rapid spread of the programme. Though the regional spread of the programme has been highly skewed with highest concentration in the southern region, it has started picking up pace in other regions. A key requirement in achieving the goals of SBLP is the successful formation and nurturing of SHGs which would require emergence of effective Self help promoting institutes (SHPIs). Lack of uniform and co-ordinated efforts by various agencies like government, NABARD, banks and NGOs involved in different stages of the linkage programme is one of the major reasons for the variation in the growth of SHPIs and in turn of the programme. Co-ordination between key agencies is necessary so that the programme spreads in a more balanced way in the country. The SBLP has been accepted as an effective tool for inclusive growth by extending various services to the poor rural households Studies showed that this programme is helping the poor in many ways. SHG has enabled the rural poor to earn their own livelihood besides participating in the process of development. However, the focus remained on expanding the outreach of the programme with little attention on its depth, quality and viability. The blind strategy of making more and more groups without any qualitative inputs will certainly create problems and risks. Therefore, presently all efforts should be concentrated on nurturing and strengthening of existing groups. Governments should play a facilitating role, should not be target oriented and should restrain from enlarging the agenda of the SHGs. There is a need for micro-level planning to identify key livelihood activities.

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Impact Study of the National Horticulture Mission Scheme in Bihar*

1.1 Introduction

India is the second largest producer of fruits and vegetables in the world after China. Till 1980, the main focus of the country was on cereals' production. During 1980-92, efforts began for consolidation of institutional support and planned process for the development of horticultural sector. In post 1993 period, focused attention was given on horticulture development by increasing plan allocations. Despite that the yield of the horticultural crops increased marginally during1991-92 to 2006-07. It rose from 7.5 MT/ha in 1990-91 to 11.00 MT/ha in 2010-11. In fact the horticulture sector is facing severe constraints like low crop productivity, limited irrigation facilities and underdeveloped infrastructure support. With a view to promote holistic growth of horticulture sector, the Department of Agriculture & Co-operation, Ministry of Agriculture, Government of India has launched a centrally sponsored scheme of "National Horticulture Mission" (NHM) in April 2005 in all the states and union territories except north-eastern states. The main objective of the NHM is to promote area based regionally differentiated cluster approach for development of horticultural crops having comparative advantage. Since then the scheme is in operation, so it would be necessary to analyze its impact. It is therefore, the Ministry of Agriculture, Government of India assigned to its Agro-Economic Research Centres/Units to carryout crop based impact evaluation study across the states. Accordingly, Agro-Economic Research Centre for Bihar & Jharkhand, T M Bhagalpur University has undertaken this study in Bihar. Bihar, endowed with very fertile land and sub-tropical climate, holds a vast potential for growing a large variety of horticultural crops. Fruits and vegetables crops cover about 1.11 million hectare (2008-09) accounting for 19.73 per cent of the net sown area and 14.39 per cent of gross cropped area of the state. The state ranks 4th in fruit and 3rd in vegetable production in the country. The state contributes nearly 7.00 per cent of the country's total fruit production (62.85 MT in 2007-08). Mango is the most important crop with the largest acreage (49.56%) and production (35.72%). The yield rate of mango is 9.23 MT/ha, lower than the national average of 11.93 MT/ha. As regards the litchi, about 2/3 of its total production is produced in the state. Guava, banana (2nd most important crop), citrus fruits (lime, lemon and pummeloes), pineapple, coconut, papaya, jackfruit, custard apple, aonla, bael, ber, pomegranate, peach, sapota, jamun, karonda, mulberry, khirni, amra, etc are also grown in the state. Besides the state has also a long tradition of growing large number of vegetables due to diversified agro-ecological situations. The total area under vegetable production is about 827 thousand hectare with annual production of 13386 MT. The average productivity is 16.19 MT/ha. Root and tuber crops are the third most important food crop after cereals and legumes. The total area under spice crops is about 10.80 thousand hectare with annual production of about 57 thousand MT. The state is not producing enough flowers to meet its domestic requirements. The area under cultivation of flowers is very limited. Due to government support and some

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other initiative, the area under floriculture in the state has now gone up to 593 hectare. As regards the medicinal and aromatic plants, the exact area is not known but its plantation is becoming popular amongst the farmers and the area under these crops is gradually increasing. Among the plantation crops coconut has expanded to about 15000 hectare. Tea plantation has also come up in Kishanganj and its adjoining areas.

1.2 Objectives of the Study

The study has following objectives:

i. Assess the impact in terms of increase in area, production and productivity of identified horticultural crops covered under NHM, keeping 2004-05 as the base year in the state in general and for the identified crops/ districts in particular.

i. Extent to which the scheme has helped in creating employment opportunities and enhancement of income of the farmers, and,

ii. Suggest measures in improving the implementation strategy.

1.3 Data base and Methodology

This study has been undertaken in Bihar. It is based on intensive sample survey.

The main reliance is on primary data. To obtain primary data, first of all, on the advice of the Ministry of Agriculture, Govrernment of India, 2 districts have been selected. These are Muzaffarpur and Vaishali. From each selected district, 2 villages

have been selected one on the basis of near the periphery of district headquarters and another from a district place so as to realize the effect of distance factor. Lohsarai (Bochhan block) and Amnor (Oraie block) villages in Muzaffarpur district and Satpura (Bhagwanpur block) and Katarmala (Gouraul block) villages in Vaishali district have been selected. To select the bottom unit of the sample, lists of the beneficiaries under the programme, mainly the area expansion scheme of the sample villages, have been obtained from the concerned DHO offices. Thereafter, the beneficiaries have been classified in different categories of farms and social sections, so that outreach of the scheme could be reflected in the study. Two villages from each of the selected districts and 25 beneficiaries from each of the selected villages, taken together 100 beneficiaries' households form the size of the sample. Mango and litchi crops have been covered for the purpose of the study. The reference periods of the study are 2004-05 (pre-project) and 2005-06 to 2008-09 (implementation of the programme).

1.4 Area, Production and Productivity of Horticultural Crops in the State

The state has 9359.57 thousand hectares of geographical area and out of it 71.08 per cent is cultivable. It has 11.78 per cent horticultural area to the cultivable area. Analysis reveals that both fruits and vegetables signify a steady growth in terms of increase area and production from 1990-91 to 2009-10. The production of fruits grew by 1.4 times, whereas that of vegetables by 1.69 times during the same period. During 2000-01 to 2009-10, area under fruits grew by 1.09 times while vegetables by 1.46 times and species by 44 per cent. During the same period, the area and production of commercial flowers increased by 4 times and 6 times respectively. Growth analysis reveals that fruits' area and yield grew by 8.82 per cent and 24.95 per cent during 2000-01 to 2009-10. Growth rates for fruits area and vegetables indicate 1.72 per cent and 31.80 per cent respectively during the period of 2004-05 to 2009-10. Similarly for vegetables sub-sector 46.19 per cent and 24.71 per cent respectively during the period of 2000-01 to 2009-10, while these are 71.05 per cent and 12.11 per cent for the period of 2004-05 to 2009-10. Growth in area and yield of species and flowers sub-sector recorded 43.96 per cent & 14.56 per cent and 389.36 per cent & 20.77 per cent

respectively for the period of 2004-05 to 2009-10. The district wise growth analysis of horticultural crops for TE 2004-05 to TE 2008-09 reveals that the area and yield of fruits sub-sector has recorded fall in area by 0.04 per cent and increase in yield rate by 6.93 per cent, 16.84 per cent and 1.21 per cent respectively for vegetables sub-sector, 10.58 per cent and 3.50 per cent respectively for total (fruits + vegetables) and 52.75 per cent and (-) 4.10 per cent respectively for floriculture sub-sector at aggregate levels. The growth of area and yield of mango crop have been recorded at 0.842 per cent and 5.017 per cent respectively during the period of 2004-05 to 2009-10. Similarly in case of litchi crop, it has been recorded at 1.549 per cent and 0.995 per cent respectively during the same period. The average annual growth in terms of area and yield of mango crop has been found 0.715 per cent and 12.34 per cent respectively during 2004-05 to 2008-09 whereas that of 1.847 per cent and (-) 0.35 per cent respectively in case of litchi crop during the same period. The preceding analysis clearly reveals that NHM programme has made tremendous success in increasing area of mango and litchi crops. In case of yield rate the average annual growth of mango was recorded at 12.34 per cent but it fell by 0.35 in litchi crop at the aggregate levels.

Table No. 1.1: Growth in Area and Yield of Horticultural Crops (In %)

Year	Fruits		Vegetables		Spices, Garden & Plantation		Commercial Flowers		Medicinal & Aromatic	
	A	Y	A	Y	A	Y	A	Y	A	Y
1990-91 to 2000-01	1.87	0.95	-31.44	-20.55	0.00	0.00	0.00	0.00	0.00	0.00
2000-01 to 2009-10	8.82	24.95	46.19	24,71	0.00	0.00	0.00	0.00	0.00	0.00
2000-01 to 2004-05	6.99	-5.20	-14.53	11.24	0.00	0.00	0.00	0.00	0.00	0.00
2004-05 to 2005-06	0.00	9.37	0.81	-0.45	13.19	2.91	34.04	56.03	0.00	0.00
2004-05 to 2006-07	-4.12	22.43	66.80	6.93	20.88	7.67	2006.38	-85.77	0.00	0.00
2004-05 to 2007-08	-74.91	-0.20	66.80	10.56	34.07	12.62	33275.89	-98.72	0.00	0.00
2004-05 to 2008-09	-0.34	28.02	67.41	4.86	39.56	13.59	318.44	32.44	0.00	0.00
2004-05 to 2009-10	1.72	31.80	71.05	12.11	43.96	14.56	389.36	20.77	0.00	0.00

Table No. 1.2: Growth rate in Area and Yield Rate of selected Horticultural Crops In Bihar (In %)

Year	Crop - I	'Mango)	Crop - 2	(Litchi)
	Area	Yield	Area	Yield
1990-91 to 2000-01	NA	NA	NA	NA
2000-01 to 2008-09	0.351	0.610	9.82	-8.60
2000-01 to 2004-05**	(-) 0.352	0.973	7.420	(-) 3.413
2004-05 to 2005-06**	0.071	41.301	0.000	(-) 2.342
2004-05 to 2006-07**	0.249	25.490	0.528	1.708
2004-05 to 2007-08**		0.181	1.643	2.977
2004-05 to 2008-09**	0.714	13.410	1.848	1.464
2004-05 to 2009-10**	0.842	5.017	1.549	0.995

** *Growth rates are based on annual averages.*

1.5 Household Characteristics, Cropping Pattern and Production Structure

This chapter is dealt on household characteristics, cropping pattern and production structure of the sample respondents. The sample size is 100 farm households constituting 17.00 per cent by marginal farms, 22.00 per cent by small farms, 43.00 per cent by medium farms, 18.00 per cent by large farms. The net operated area is 4.73 acre/household and the GCA is 7.03 acre/household on overall farms. The overall cropping intensity is 14.94 per cent. Out of the total operated area, the study finds that tube well provides irrigation to about 84.90 per cent constituting 74.70 per cent from diesel run tube well and 10.20 per cent by electricity run tube well. Tanks and other sources contribute only 98.0 per cent irrigation to the net operated area. Rainfed area is about 5.30 per cent of the net operated area. It reveals that the major source of the irrigation is tube well in the study area. As regards the availability of credit, it is observed that a sum of Rs. 3829.20/household on overall farms. Out of it, 55.24 per cent is obtained from institutional sources. Similarly the availability credit is Rs. 809.52/acre on overall farms. Out of it, institutional sources contribute 55.24 per cent. It reveals that nearly more than half of the total available credit is met by institutional sources. It is to be noted here that out of per household total available credit, 57.93 per cent is used for productive purposes on overall farms. It is further observed that each household owes productive assets for a total value of Rs. 37027 at current level of prices whereas that of Rs. 5284/acre. The analysis of nature of tenancy in leasing-in land is in terms of fixed rent comprising cash (36.17%) and kind (63.83%). The area under HYV seeds are 30.18 per cent for paddy and 89.09 per cent for maize in kharif 2008; 49.78 per cent for wheat, 4.27 per cent for pulses and 3.20 per cent for oilseeds in rabi 2008 and 15.33 per cent for mango, 7.87 per cent for litchi crops, 12.72 per cent for total vegetables and 11.08 per cent for others in horticultural crops during 2008-09. The analysis of area under

HYV seeds reveals that it is higher in maize crop followed by wheat and paddy. Pulses and oilseeds are mainly grown by traditional varieties of seeds due to lack of improved/ HYV seeds. The analysis of cropping pattern of the selected farmers reveals that kharif crops occupy 41.96 per cent, rabi crops 31.01 per cent and horticultural crops 27.03 per cent of the GCA. Staple food crops like paddy, wheat and maize together occupy 65.15 per cent of the GCA. The overall value of the output is estimated at Rs. 67087/household and Rs. 9637/acre. The overall cost of production is calculated at Rs. 5563/acre constituting 71.49 per cent for materials and 28.51 per cent for labour component. The overall net returns are Rs. 61524/household and Rs. 4278/acre. Rs. 5701/household is the overall non-farm income and the total income is traced out at Rs. 67225/household on overall farms.

1.6 Production Structure and Resource use under Horticultural Crops

There is no doubt in the fact that an analysis of the economics of production of the selected horticultural crops provides us with a deeper insight relating to the impact of NHM. The findings on production structure and resource use of the selected horticultural crops reveal that in case of mango, total revenue accrued per acre of land stands quite high (as also the cost of production), thereby generating higher net returns. In sharp contrast to this, total revenue accrued per acre of land from litchi cultivation comes to be lower than mango cultivation (as also the costs of production). Again a comparison of net returns from horticultural and non-horticultural crops reveal that net return per unit of land from selected horticultural crops (viz., mango and litchi) turns out to be much higher than the net return per farm from kharif and to some extent rabi crops. However, net return per unit of land from mango cultivation turns out to be more than double than from litchi.

Table 1.3: Net returns (gross value of output - total cost) from horticultural and non-horticultural crops (crop wise Rs per acre)

Name of the crop	Marginal	Small	Medium	Large	Total
Kharif crops during 2008					
Paddy	8910.93	8330.77	11138.87	10752.63	9252.23
Maize	6614.57	7913.36	7491.50	9317.00	7430.77
Rabi crops during 2008					
Wheat	8927.94	8267.21	10121.45	11351.82	9209.72
Lentil	9206.07	12244.13	11174.09	13059.11	10906.48
Gram	5597.98	6165.18	6778.95	7073.68	6176.52
Horticultural crops during 2008.09					
Mango	25827.00	25937.30	24503.00	22622.00	23247.35
Litchi	11839.80	10348.30	9171.00	10828.80	9999.92

As regards human labour application per unit of land, it has been observed that the application of human labour (including family labour) remains much higher for mango and litchi crops as compared to traditional kharif and rabi crops.

A more detailed crops specific activities wise analysis of use of human labour reveals that in case of mango cultivation, a major part of human labour has been expended in weeding and inter-cultural operations and harvesting and collection followed by application of manure and fertilizer and providing irrigation. In particular about 68.32 per cent of total human labour is expended on recurring activities undertaken annually and 31.68 per cent on fixed activities undertaken during the plantation year on total farms. Almost same trend was indicated across the farm sizes. In case of litchi cultivation, about 66.37 per cent of total human labour is expended on recurring activities and 33.62 per cent on fixed activities undertaken during the plantation year on total farms. However, a major part of human labour has been expended on harvesting and collection followed by application of fertilizer and manure, weeding cultural operation etc. which are somewhat different compared to mango cultivation for recurring activities. Farm wise analysis reveals almost the same trend.

In case of marketing of the produce; it is hard to find that in case of both mango and litchi, there has been a complete absence of formal marketing channels like government agencies, cooperatives to the relief of the farmers. As such most of the produce is sold to the merchant/ trader on pre-arranged contract followed by the wholesale market, local market, directly to the villagers and intermediaries at farm gate.

Moreover, it is extremely unfortunate to observe that none of the sample beneficiary farmers are involved in on-farm processing activities. In fact, there is complete absence of mango or litchi processing plants in the regions concerned. As such, output is sold in raw form. There is no value addition in either of the sample produces.

1.7 Impact of NHM on the Expansion of Horticultural Crops

An analysis of the subjective perceptions of the farmers in general and the beneficiaries owing to implementation of this mission is particular brings out some interesting observations. While analyzing the impact of NHM on area and yield of selected horticultural crops viz., mango and litchi during a period of 2004-05 to 2009-10, it was found that the extent of expansion of area was impressive but the overall in yield was not satisfactory in case of both the crops, which may be due to gestation period of the new cropped area. In case of mango crop, the average area increased from 0.26 per household during 2004-05 to 0.75 acre per household during 2009-10, indicating 2.88 times increase during 2009-10. Similarly, the average area of litchi crop has increased from 0.069 acre per household during 2004-05 to 0.280 acre per household during 2009-10, indicating 4.06 times increase during 2004-05 to 2008-09. The yield rate actually declined in case of mango crop from 59.14 quintals per acre in 2004-05 to 45.74 quintals per acre in 2009-10. However, in case of litchi crop, it increased sharply from 32.17 quintals per acre in 2004-05 to 38.08 quintals per acre in 2009-10.

Table 1.4: Impact of NHM on Area and Yield - of Mango and Litchi

Year	Area cultivated in acres per household					Yield rate obtained quintals per acre				
	Marginal	Small	Medium	Large	Total	Marginal	Small	Medium	Large	Total
Crop - I (Mango										
2004-05	0.05	0.12	0.19	0.78	0.26	56.30	57.70	60.12	61.22	59.14
2005-06	0.05	0.12	0.19	0.78	0.26	55.00	52.00	58.30	59.40	56.55
2006-07	0.18	0.36	0.63	2.03	0.75	29.10	38.70	39.40	42.30	38.02
2007-08	0.18	0.36	0.63	2.03	0.75	31.30	40.20	40.60	42.80	39.16
2008-09	0.18	0.36	0.63	2.03	0.75	40.40	43.20	44.30	48.20	43.40
2009-10	0.18	0.36	0.63	2.03	0.75	42.00	47.00	45.00	49.50	45.74
Crop - 2 (Litchi)										
2004-05	0.002	0.038	0.092	0.113	0.069	28.20	30.50	32.90	36.20	32.17
2005-06	0.002	0.038	0.092	0.113	0.069	29.10	30.80	32.60	35.80	32.19
2006-07	0.012	0.149	0.274	0.711	0.280	19.30	30.20	23.40	25.50	32.38
2007-08	0.012	0.149	0.274	0.711	0.280	22.20	24.70	23.50	26.70	24.12
2008-09	0.012	0.149	0.274	0.711	0.280	25.40	26.20	25.4O	28.30	26.10
2009-10	0.012	0.149	0.274	0.711	0.280	40.00	38.75	36.25	39.80	38.08

As far as the area under rejuvenation/ protection, resources procurement through NHM and the resulted increase in production is concerned, no cases of rejuvenation are found in case of both the sample crops. The state annual action plan of NHM for the years 2006-07 and 2007-08 relating to rejuvenation also shows that the level of financial achievement is just 15.00 per cent. It is further at the low ebb during 200809 and 2009-10.

As regards the NHM reaching to the households with resource provision, it is found that about 71.00 per cent of total NHM resource procurement by the sample households was through state department of horticulture followed by 21.00 per cent through private nurseries and 8.00 per cent through fellow/progressive farmers. The majority of sample farmers were benefitted through various promotional activities undertaken through NHM. About 45.00 per cent farmers said that they established new garden. About 27.00 per cent farmers told that they made use of available good quality planting material like nursery through NHM. Nearly 26.00 per cent were found promoted of INM/IMP, 25.00 per cent said that their capacity builded through training made under NHM and 24.00 per cent said that they were helped for organic farming. Not a single farmer was found benefitted under rejuvenation, upgraded issue culture unit, mother stock block maintenance under poly cover to protect from adverse weather conditions, raising root stock seedling under net house conditions, ploy house with ventilation, insect proof nettings, fogging and sprinkler irrigation, pump house to provide sufficient irrigation, soil sterilization, protected

cultivation and of course, post harvest management. However, it is true that these components of the NHM scheme were either not adopted under NHM or did not qualify the eligibility criteria to avail such facilities.

The subsidy was also provided to the sample farmers. Cent per cent sample farmers were found to receive the subsidy made under NHM scheme. The average aggregate amount of subsidy was Rs. 24345.40 per household. However, it varies from Rs. 5316.40 per household to Rs. 65382.50 per household across the farm sizes. The percentage of subsidy as a percentage of total investment was indicated at 61.02 per cent comprising 14.44 per cent on account of supply of sapling and 46.58 per cent under the cash benefit.

Since capacity building is an integral part of NHM scheme so it was found that the training was provided to the sample farmers through various sources. It was just 1.33 times per household per year received from the state department of horticulture followed by SAU (0.04 time), others (0.03 time), KVK (0.02 time) and input dealers (0.01 time). The training sessions arranged for 0.59 day per household per year by the state horticulture department followed by 0.04 day each by SAU and KVK and 0.01 day each by input dealers and others.

The perceptions of the beneficiary farmers about their experiences in cultivating horticultural crops with the help of NHM assistance are very helpful in analyzing the performance of NHM scheme. Cent per cent of sample farmers told that NHM helped them by providing seedling nursery for increasing the area under horticultural crops. On an average 48.00 per cent expressed that NHM helped in capacity building by providing training. Cent per cent opined that financial assistance made under the programme is a good point, 54.00 per cent expressed about subsidy provision and 48.00 per cent for training. Regarding the increased employment opportunities, 54.00 per cent of sample households said that by increasing area under horticultural crops employment opportunities have increased. About 31.00 per cent of sample households have reported that their income has increased up to 20.00 per cent after adopting horticultural crops with the help of NHM. About 17.00 per cent reported about increase in income by 20 to 40 per cent and 11.00 per cent by 40 to 60 per cent.

Table 1.5: Perception *of* households about the **NHM** (% ***of* households saying 'Yes')**

Details of training	Marginal	Small	Medium	Large	Total
A. How NHM has helped you **to** increase your area under horticultural crops					
By providing seedling/nursery	17.00	22.00	43.00	18.00	100.00
By providing material inputs	0.00	0.00	0.00	0.00	0.00
By capacity building (providing training)	8.00	12.00	22.00	6.00	48.00
By providing processing facilities	0.00	0.00	0.00	0.00	0.00
By providing market for our end product	0.00	0.00	0.00	0.00	0.00
By providing procurement facility	0.00	0.00	0.00	0.00	0.00

B. What are the good points in the policy towards NHM					
Financial assistance	17.00	22.00	43.00	18.00	100.00
Building infrastructure	0.00	0.00	0.00	0.00	0.00
Capacity Building (awareness camps / training etc)	8.00	12.00	22.00	6.00	48.00
Subsidy provision	12.00	11.00	24.00	7.00	54.00
Any other	0.00	0.00	0.00	0.00	0.00
C. Do you think NHM has increased employment opportunities for the farmers and agricultural Labourers, How?					
By increasing area under horticultural crops that are manually operated	7.00	14.00	26.00	7.00	54.00
By establishing horticultural processing units in the local areas	0.00	0.00	0.00	0.00	0.00
By providing subsidy to those who have d iversified their crops from field to horticultural crops	4.00	6.00	12.00	13.00	35.00
No NHM has not increased employment in any way	10.00	8.00	17.00	11.00	46.00
D. Do you think your Income has grown up after adopting horticultural crops with the help of NHM. If yes how much					
less than 20 %	6.00	9.00	11.00	5.00	31.00
20 to 40 %	5.00	3.00	3.00	6.00	17.00
40 to 60 %	1.00	4.00	2.00	4.00	11.00
60 to 100 %	0.00	0.00	0.00	0.00	0.00
No increase at all	5.00	6.00	27.00	3.00	41.00
E. Are farmers in your village aware about the National Horticulture Mission, How?					
They have actively benefited from the subsidies provided by the NHM	8.00	7.00	20.00	7.00	42.00
They actively participate in the training In the training programmes provided by the NHM	3.00	5.00	11.00	3.00	22.00
They have benefited from the infrastructural building up being done by the NHM	0.00	0.00	0.00	0.00	0.00
They have been able to raise their area under horticultural crops with the help of NHM	4.00	4.00	3.00	6.00	17.00
No they stand aloof and completely unaware about the activities of NHM	6.00	11.00	13.00	5.00	35.00

F. What changes do you suggest to make NHM more effective - mention					
Irrigation Facilities	11.00	13.00	22.00	7.00	53.00
Fencing Provisions be made	8.00	7.00	11.00	3.00	29.00
Increase in Project costs & subsidy	6.00	8.00	7.00	6.00	27.00
Research/Inventions in case of Litchi crops be made in view of climate change	3.00	7.00	11.00	4.00	25.00
Original medicines for spraying the plants be made available	0.00	0.00	7.00	6.00	13.00
Power supply should be increased	3.00	9.00	14.00	7.00	33.00

1.8 Policy Suggestions

Bihar has excellent development potential of horticultural sector despite several constraints. The efforts over the last some years made for systematic and planned development of horticultural sector have started gaining responses from the producers. However, there are several challenges, which are required to be addressed seriously. Moreover, based on the findings and observations of the present study, the following are the suggested policy measures to mitigate the problems relating to performance of the NHM. The specific policy suggestions may be presented hereunder:

i. For expansion of area under horticultural crops, irrigation is most important input, so irrigational is required, which can be ensured by re-starting non-functional tube wells and facilities of micro-irrigation may be provided. So, 53.00 per cent of the sample farmers suggested for making them available of irrigational facilities *(Attention: Directorate of Agriculture, Government of Bihar).*

i. Since irrigational facility is related to the un-interrupted power supply, so 33.00 per cent of the sample farmers suggested for increase in power supply in the region. Though, the state government is contemplating the efforts for separate power grid or transmission line for

the rural areas, which may be expedited *(Attention: Bihar State Power (Holding) Company Ltd, Government of Bihar).*

ii. Cattle grazing is largely found in the study region/area, so, 29.00 per cent of the sample farmers suggested for fencing of the new gardens, which may be met by RKVY or other related schemes *(Directorate of Horticulture, Government of Bihar).*

ii. Due to soaring of input prices, 27.00 per cent of the sample farmers suggested to increase the costs of project and the amount of subsidy *(Ministry of Agriculture, Government of India).*

V. Adverse impact of climate change was also found in the study area particularly on litchi crop, so 27.00 per cent of the sample farmers suggested the need of new researches and inventions, particularly suited to the litchi crop *(ICAR & SA U).*

vi. Attack of insects and pests was found in the study area on the sample crops, so 13.00 per cent of the sample farmers suggested ensuring original medicines for spraying the plants *(Directorate of Agriculture, Government of Bihar).*

vii. It was observed that there is insufficient monitoring and supervision
personnel of the new gardens by the extension staff of the NHM scheme,
which may be due to lack of sufficient staff and providing facilities for the
same. To meet such limitations, outsourcing of the field staff may be done
(Directorate of Horticulture, Government of Bihar).

D. Commodity Reviews

(i) Foodgrains

During the month of November,2013 the Wholesale Price Index (Base 2004-05=100) of pulses, foodgrains and cereals increased by 0.35%, 0.26% and 0.22% respectively over the previous month.

All India Wholesale Prices Index (WPI) Number

Commodity	Weight (%)	WPI for the Month of November 2013	WPI for the Month of October 2013	WPI A year ago	Percentage change during A month	A year
1	2	3	3	5	6	7
Rice	1.793	232.5	234.5	202.7	-0.85	14.70
Wheat	1.116	217.1	213.6	198.0	1.64	9.65
Jowar	0.096	247.1	240.8	234.6	2.62	5.33
Bajra	0.115	251.0	251.6	221.0	-0.24	13.57
Maize	0.217	250.7	246.0	232.2	1.91	7.97
Barley	0.017	216.5	214.7	198.4	0.84	9.12
Ragi	0.019	336.2	330.1	284.8	1.85	18.05
Cereals	3.373	230.1	229.6	205.0	0.22	12.24
Pulses	0.717	228.6	227.8	256.5	0.35	-10.88
Foodgrains	4.09	229.8	229.2	214.1	0.26	7.33

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 October, 2013.

Commodity	Main Trend	Rising	Falling	Mixed	Steady
Rice	Steady	Rajasthan		U.P.	Gujarat
					Haryana
Wheat	Rising	Gujarat			
		Haryana	Karnataka	U.P.	
		Jharkhand			
		Rajasthan			
Jowar	Mixed	Gujarat	Maharashtra	A.P.	Karnataka
				Rajasthan	
Bajra	Rising	Gujarat	Karnataka	Maharashtra	A.P.
Maize	Rising & Steady	Gujarat	A.P.	Rajasthan	Karnataka
		Jharkhand			U.P.

Procurement of Rice

3.09 million tones of Rice(including paddy converted into rice) was procured during Nov. 2013 as against 3.77 million tones of rice (including paddy converted into rice) procured during Nov.2012 The total procurement of Rice in the current marketing season i.e 2013-14, up to 29.11.2013 stood at 11.01 million tonnes, as against 11.07 million 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		Corresponding		Marketing Year			
	2013-14		Period of last Year		(October-September)			
	(upto 29.11.2013)		2012-13		2012-13		2011-12	
	Procure-ment	%age to Total	Procure-ment	%age to Total	Procure-ment	%age to Total	Procure-ment	%age to Total
1	2	3	4	5	6	7	8	9
Andhra Pradesh	344	3.10	388	3.31	6464	19.00	7548	21.53
Chhatisgarh	15	0.14	0	0.00	4804	14.12	4115	11.74
Haryana	2394	21.59	2556	21.83	2609	7.67	2007	5.72
Maharashtra	11	0.10	14	0.12	192	0.56	190	0.54
Punjab	8083	72.88	8485	72.47	8558	25.16	7731	22.05
Tamil Nadu	52	0.47	1	0.01	481	1.41	1596	4.55
Uttar Pradesh	94	0.85	159	1.36	2286	6.72	3357	9.58
Uttarakhand	19	0.17	46	0.39	497	1.46	378	1.08
Others	79	0.71	59	0.50	8129	23.89	8138	23.21
Total	11091	100.00	11708	100.00	34020	100.00	35060	100.00

Source: Department of Food & Public Distribution.

Procurement of Wheat

The total procurement of wheat in the current marketing season i.e 2013-2014 upto August, 2013 is 25.09 million tonnes against a total of 38.11 million tonnes of wheat procured during corresponding last year. The details are given in the following table.

Procurement of Wheat

(In Thousand Tonnes)

State	Marketing Season		Corresponding Period of last Year		Marketing Year		(April-March)	
	2013-14 (upto 01.08.2013)		2012-13		2012-13		2011-12	
	Procure-ment	%age to Total	Procurement	%age to Total	Procure-ment	%age to Total	Procure-ment	%age to Total
1	2	3	4	5	6	7	8	9
Haryana	5873	23.41	8666	22.74	8665	22.71	6928	24.45
Madhya Pradesh	6355	25.33	8507	22.32	8493	22.26	4965	17.52
Punjab	10897	43.43	12836	33.68	12834	33.64	10958	38.67
Rajasthan	1268	5.05	1964	5.15	1964	5.15	1303	4.60
Uttar Pradesh	683	2.72	5063	13.29	5063	13.27	3461	12.21
Others	16	0.06	1071	2.81	1129	2.96	720	2.54
Total	25092	100.00	38107	100.00	38148	100.00	28335	100.00

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 203.9 in December, 2013 showing an increase of 2.6 percent. However, it remained unchanged over the previous month. The Wholesale Price Index (WPI) of all individual oilseeds showed a mixed trend. The WPI of Soyabean (6.7percent), Copra (9.4 percent), Gingelly seed (23.0 percent), Niger seed (1.9 percent), Safflower (3.1 percent), Sunflower (0.5 percent) and Rape & Mustard (3.2 percent) increased over the previous month. However, the WPI of Groundnut seed (9.8 percent) and Cotton Seed (1.8 percent) decreased over the previous month. The Wholesale Price Index (WPI) of Edible Oils as a group stood 147.8 in December, 2013 showing an increase of 0.1 percent over the previous month. However, it decreased by 1.2 percent over the previous year. The WPI of Sunflower Oil (4.3 percent), Cottonseed Oil (1.7 percent), Copra oil (3.5 percent), Soyabean Oil (0.4 percent) and Groundnut Oil (1.8 percent) decreased over the previous month. However, the WPI of Gingelly Oil (9.3 percent) and Mustard Oil (1.8 percent) increased over the previous month.

Fruits & Vegetable: The Wholesale Price Index (WPI) of Fruits & Vegetable as a group stood at 236.7 in December, 2013 showing a fall of 16.3 percent over the previous month. However, it increased by 30.8 percent over the previous year.

Potato: The Wholesale Price Index (WPI) of Potato stood at 270.8 in December, 2013 showing an increase of 17.0 percent and 54.7 percent over the previous month and year, respectively.

Onion: The Wholesale Price Index (WPI) of Onion stood 434.3 in December, 2013 showing a fall of 47.5 percent over the previous month. However, it increased by 39.6 percent over the previous year.

Condiments & Spices: The Wholesale Price Index (WPI) of Condiments & Spices (Group) stood at 263.2 in December, 2013 showing an increase of 9.3 percent and 25.4 percent over the previous month and over the previous year. The WPI of Black Pepper, Chillies (Dry) and Turmeric increased by 8.9 percent, 12.8 percent and 0.2 percent over the previous month.

Raw Cotton: The Wholesale Price Index (WPI) of Raw Cotton stood at 229.1 in December, 2013 showing a fall of 8.5 percent over the previous month. However, it increased by 14.2 percent over the previous year.

Raw Jute: The Wholesale Price Index (WPI) of Raw Jute stood at 271.6 in December, 2013 showing an increase of 4.6 percent and 13.6 percent over the previous month and over the previous year.

Wholesale Price Index Of Commercial Crops For The Month Of December, 2013

(Base Year : 2004-05=100)

Commodity	Latest	Month	Year	% Variation Over	
	Dec,13	Nov,13	Dec,12	Month	Year
OIL SEEDS	203.9	198.7	204.0	2.6	0.0
Groundnut Seed	194.1	215.3	253.7	-9.8	-23.5
Rape & Mustard Seed	195.5	189.5	222.6	3.2	-12.2
Cotton Seed	181.1	184.4	165.3	-1.8	9.6
Copra (Coconut)	133.6	122.1	95.4	9.4	40.0
Gingelly Seed (Sesamum)	486.8	395.8	337.4	23.0	44.3
Niger Seed	178.4	175.1	182.4	1.9	-2.2
Safflower (Kardi Seed)	159.9	155.1	150.4	3.1	6.3
Sunflower	196.0	195.1	198.2	0.5	-1.1
Soyabean	223.8	209.8	203.0	6.7	10.2
EDIBLE OILS	147.8	147.7	149.6	0.1	-1.2
Groundnut Oil	175.8	179.1	197.6	-1.8	-11.0
Cotton Seed Oil	181.5	184.7	184.7	-1.7	-1.7
Mustard & Rapeseed Oil	156.2	153.4	155.8	1.8	0.3
Soyabean Oil	159.4	160.1	161.9	-0.4	-1.5
Copra Oil	119.7	124.0	114.8	-3.5	4.3
Sunflower Oil	129.1	134.9	139.4	-4.3	-7.4
Gingelly Oil	191.9	175.6	185.3	9.3	3.6
FRUITS & VEGETABLES	236.7	282.8	181.0	-16.3	30.8
Potato	270.8	231.4	175.1	17.0	54.7
Onion	434.3	826.7	311.2	-47.5	39.6
CONDIMENTS & SPICES	263.2	240.7	209.9	9.3	25.4
Black Pepper	596.4	547.6	522.9	8.9	14.1
Chillies(Dry)	289.8	257.0	234.9	12.8	23.4
Turmeric	213.1	212.6	171.8	0.2	24.0
Raw Cotton	229.1	250.3	200.7	-8.5	14.2
Raw Jute	271.6	259.6	239.0	4.6	13.6

PART- II--Statistical Tables

A. Wages

1. Daily Agricultural Wages In Some States (Category-Wise)

State	District	Centre	Moth & Year	Daily Normal Working Hour	Field Labour		Other Agri. Labour		Herdsman		Skilled Labour		
											Carpenter	Black Smith	Cobbler
					M	W	M	W	M	W	M	M	M
Andhra Pradesh	Krishna	Ghantasala	May,13	8	250	150	NA	NA	NA	NA	NA	NA	NA
	Guntur	Tadikonda	May,13	8	NA	NA	NA	NA	200	NA	NA	NA	NA
	Rangareddy	Arutala	May,13	8	225	175	NA	NA	NA	NA	NA	NA	NA
Karnataka	Bangalore	Harisandra	June,13	8	225	175	225	150	250	150	300	250	NA
	Tumkur	Gidlahali	June,13	8	168	160	180	180	180	180	180	180	NA
Maharashtra	Nagpur	Mauda	Feb,12	8	100	100	NA	NA	NA	NA	NA	NA	NA
	Ahmednagar	Akole	Feb,12	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jharkhand	Ranchi	Gaitalsood	April,12	8	100	100	NA	90	90	NA	58	58	NA

1.1 Average Daily Agricultureal Wages In Some States (Operation-Wise)

(in Rs.)

State	District	Centre	Month & Year	Type of Labour	Normal Daily Working Hours	Ploughing	Sowing	Weeding	Harvesting	Other Agri Labour	Herdsman	Skilled Labours		
												Carpenter	Black Smith	Cobbler
Assam	Barpeta	Loharapara	March, 12	M	8	180	180	180	180	180		180	180	180
				W	8	NA	NA	160	160	160	NA	NA	NA	NA
Bihar	Muzaffarpur	Bhalui Rasul	April to June, 12	M	8	130	120	80	130	150	120	200	180	250
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Shekhpura	Kutaut	May & June,12	M	8	NA	NA	185	NA	185	NA	245	NA	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chhattisgarh	Dhamtari	Sihaba	Oct, 13	M	8	NA	NA	NA	100	80	80	250	100	80
				W	8	NA	NA	NA	80	70	80	150	80	NA
Gujarat	Rajkot	Rajkot	Jan,13	M	8	209	225	150	170	147	150	360	360	240
				W	8	NA	169	150	179	145	142	NA	NA	NA
	Dahod	Dahod	Jan,13	M	8	100	100	100	100	100	NA	200	144	150
				W	8	NA	100	100	100	100	NA	NA	NA	NA
Haryana	Panipat	Ugarakheri	March, 13	M	8	180	180	180	200	180	NA	400	400	NA
				W	8	NA	150	150	180	150	NA	NA	NA	NA
Himachal Pradesh	Mandi	Mandi	Sep,13	M	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA

1.1 Average Daily Agricultureal Wages In Some States (Operation-Wise)-*Contd*

(in Rs.)

State/	District	Centre	Month & Year	Type of Labour	Normal Daily Working Hours	Ploughing	Sowing	Weeding	Harvesting	Other Agri Labour	Herdsman	Skilled Labours		
												Carpenter	Black Smith	Cobbler
Kerala	Kozhikode	Koduvally	Sep,13	M	4-8	920	550		550	710	650	NA	NA	NA
				W	4-8	NA	NA	450	450	500	NA	NA	NA	NA
	Palakkad	Elappally	Sep,13	M	4-8	400	350	NA	400	400	500	NA	NA	NA
				W	4-8	NA	NA	250	300	250	NA	NA	NA	NA
Madhya	Hosang-abad	San-garkhera	Oct,13	M	8	150	130	150	150	125	100	300	300	NA
				W	8	NA	130	150	150	125	100	NA	NA	NA
	Satna	Kotar	Oct,13	M	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Shy-opurkala	Vijaypur	Oct,13	M	8	NA	200	200	250		150	250	250	NA
				W	8	NA	200	200	250	NA	NA	NA	NA	NA
Odisha	Bhadrak	Chandbali	July,13	M	8	NA	NA	NA	160	175	NA	NA	NA	NA
				W	8	NA	NA	NA	120	140	NA	NA	NA	NA
	Ganjam	Aska	July,13	M	8	200	150	150	NA	225	100	300	300	200
				W	8	NA	100	100	NA	110	100	NA	NA	NA
Punjab	Ludhiyana	Pakhowal	June,08	M	8	NA	NA	90	95	NA	99.44	NA	NA	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rajast-han	Barmer	Vishala	June,13	M	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Jalore	Panwa	June,13	M	8	NA	NA	NA	NA	NA	200	350	300	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tamil Nadu*	Thanjavur	Pulvarna-tham	Sep,13	M	8	257	294	NA	300	297.93	NA	NA	NA	NA
				W	8	NA	NA	119.29	112.5	126.43	NA	NA	NA	NA
	Tirunelveli	Malay-akulam	Sep,13	M	8	NA	NA	NA	300	388.71	NA	NA	NA	NA
				W	8	NA	NA	140	132	NA	NA	NA	NA	NA
Tripura	State Average		March, 12	M	8	238	201	203	209	207	199	253	235	240
				W	8	NA	154	152	154	154	149	NA	NA	NA
Uttar Pradesh*	Meerut	Ganesh-pur	Jan,13	M	8	205	207	206	204	206	NA	320	NA	NA
				W	8	NA	180	180	180	180	NA	NA	NA	NA
	Aurraiya	Aurraiya	Jan,13	M	8	150	193	192	150	193	NA	300	NA	NA
				W	8	NA	160	167	120	167	NA	NA	NA	NA
	Chandauli	Chandauli	Jan,13	M	8	150	150	125	125	125	NA	271	NA	NA
				W	8	NA	150	125	125	125	NA	NA	NA	NA

M-Man W-Woman NA- Not Available

NR- Not Reported * States reported district average daily wages

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	Dec-13	Nov-13	Dec-12
Wheat	PBW 343	Quintal	Punjab	Amritsar	NA	NA	1450
Wheat	Dara	Quintal	Uttar Pradesh	Chandausi	1600	1550	1450
Wheat	Lokvan	Quintal	Madhya Pradesh	Bhopal	1750	1727	1550
Jowar	-	Quintal	Maharashtra	Mumbai	2550	2450	1950
Gram	No III	Quintal	Madhya Pradesh	Sehore	2400	3651	3200
Maize	Yellow	Quintal	Uttar Pradesh	Kanpur	1425	1275	1310
Gram Split	-	Quintal	Bihar	Patna	4670	4675	5410
Gram Split	-	Quintal	Maharashtra	Mumbai	5000	5100	6800
Arhar Split	-	Quintal	Bihar	Patna	6740	6800	5750
Arhar Split	-	Quintal	Maharashtra	Mumbai	6800	6600	6500
Arhar Split	-	Quintal	NCT of Delhi	Delhi	6355	6350	6350
Arhar Split	Sort II	Quintal	Tamil Nadu	Chennai	6400	6600	5600
Gur	-	Quintal	Maharashtra	Mumbai	3400	3400	3450
Gur	Sort II	Quintal	Tamil Nadu	Coimbatore	4300	4000	3200
Gur	Balti	Quintal	Uttar Pradesh	Hapur	2375	2150	2575
Mustard Seed	Black (S)	Quintal	Uttar Pradesh	Kanpur	3300	3270	4110
Mustard Seed	Black	Quintal	West Bengal	Raniganj	3900	3850	4800
Mustard Seed	-	Quintal	West Bengal	Kolkata	4200	4200	4600
Linseed	Bada Dana	Quintal	Uttar Pradesh	Kanpur	4160	4110	4380
Linseed	Small	Quintal	Uttar Pradesh	Varanasi	3670	3680	3680
Cotton Seed	Mixed	Quintal	Tamil Nadu	Virudhunagar	1500	1900	1400
Cotton Seed	MCU 5	Quintal	Tamil Nadu	Coimbatore	1550	1550	1550
Castor Seed	-	Quintal	Andhra Pradesh	Hyderabad	3600	3300	3200
Sesamum Seed	White	Quintal	Uttar Pradesh	Varanasi	5680	6560	5900
Copra	FAQ	Quintal	Kerala	Alleppey	7300	7900	4575
Groundnut	Pods	Quintal	Tamil Nadu	Coimbatore	3800	3800	3850
Groundnut	-	Quintal	Maharashtra	Mumbai	6400	7000	8450

2. Wholesale Prices of Certain Agricultural Commodities and Animal Husbandry Products at Selected Centres in India-*Contd*

Month end Prices in Rupees

Mustard Oil	-	15 Kg.	Uttar Pradesh	Kanpur	1230	1166	1355
Mustard Oil	Ordinary	15 Kg.	West Bengal	Kolkata	1275	1230	1440
Groundnut Oil	-	15 Kg.	Maharashtra	Mumbai	1230	1275	1875
Groundnut Oil	Ordinary	15 Kg.	Tamil Nadu	Chennai	1260	1350	1875
Linseed Oil	-	15 Kg.	Uttar Pradesh	Kanpur	1290	1262	1328
Castor Oil	-	15 Kg.	Andhra Pradesh	Hyderabad	1245	1170	1140
Sesamum Oil	-	15 Kg.	NCT of Delhi	Delhi	1375	1380	1700
Sesamum Oil	Ordinary	15 Kg.	Tamil Nadu	Chennai	3075	3000	2880
Coconut Oil	-	15 Kg.	Kerala	Cochin	1553	1650	998
Mustard Cake	-	Quintal	Uttar Pradesh	Kanpur	1850	1800	2180
Groundnut Cake	-	Quintal	Andhra Pradesh	Hyderabad	2571	2857	3000
Cotton/Ka-pas	NH 44	Quintal	Andhra Pradesh	Nandyal	4300	4000	3750
Cotton/Ka-pas	LRA	Quintal	Tamil Nadu	Virudhunagar	-	NT	-
Jute Raw	TD 5	Quintal	West Bengal	Kolkata	2900	2740	2425
Jute Raw	W 5	Quintal	West Bengal	Kolkata	2850	2690	2425
Oranges	-	100 No	NCT of Delhi	Delhi	458	NA	542
Oranges	Big	100 No	Tamil Nadu	Chennai	480	520	480
Oranges	Nagpuri	100 No	West Bengal	Kolkata	-	-	430
Banana	-	100 No.	NCT of Delhi	Delhi	250	250	175
Banana	Medium	100 No.	Tamil Nadu	Kodaikkanal	445	432	338
Cashewnuts	Raw	Quintal	Maharashtra	Mumbai	57000	58000	50000
Almonds	-	Quintal	Maharashtra	Mumbai	60000	58000	45000
Walnuts	-	Quintal	Maharashtra	Mumbai	65000	66000	60000
Kishmish	-	Quintal	Maharashtra	Mumbai	13000	14000	11000
Peas Green	-	Quintal	Maharashtra	Mumbai	4500	4600	3300
Tomatoes	Ripe	Quintal	Uttar Pradesh	Kanpur	1600	3350	700
Ladyfinger	-	Quintal	Tamil Nadu	Chennai	2600	2400	1900
Cauliflower	-	100 No.	Tamil Nadu	Chennai	1300	2000	1400
Potatoes	Red	Quintal	Bihar	Patna	1280	1425	800

C. Crop Production

3. Sowing and Harvesting Operations Normally in Progress During February, 2014

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

(K) — Kharif (R) — Rabi

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