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An Analysis of Antecedent Causes of Agricultural Distress in Haryana

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ABSTRACT

Background: Haryana is an agricultural developed state of India but fluctuations in growth rate of agriculture and allied activities are very fast from last two decades. Some symptoms of agrarian distress have been observing in Haryana. In this paper a concrete analysis of prevalent situation to understand the antecedent causes of agriculture distress has been discussed.

Methods: The study has been made intensive reference to secondary data (from 1966 to 2018). The study has been descriptive in the nature and percentage method has been used to analysis the objectives of the study.

Result: The study has concluded that main causes of agricultural distress were cost of all main inputs increased over the long time, an imbalance generated in NPK ratio of consumption of fertilizer, not getting proper remunerative prices; poor infrastructure development process and only few crops were procured by government.

Key words: Agriculture sector, Distress, Fertilizer.

INTRODUCTION

Haryana is an agricultural developed state of India. Green Revolution positively affected agricultural production and productivity. The agricultural productivity for food grains in Haryana was much higher as compared to national level (3772 kg per hectare in 2014-15 as against 2070 kg per hectare at the national level). Despite this, the share of agricultural sector in the gross domestic product of the state has fallen from 60.7 per cent of GSDP in 1969-70 to 17.6 per cent of the gross state value added (at constant price of 2011-12) in 2017-18. The growth rate of agriculture and allied activities in Haryana is not stable from last two decades, fluctuations in growth rate are very fast and it came year after year. Agriculture sector is main sources of livelihood for more than 50 per cent of Workforce in Haryana. These fluctuations badly affected living standard of farmers at a large portion and the symptoms of agrarian distress have been observing in Haryana. The distress in agriculture did not arise suddenly; it takes long time duration to come in existence. Thus, the present paper attempts to analyze of antecedent causes of agricultural distress which arisen in development of agriculture sector in Haryana. So, on the basis of concrete analysis of prevalent situation, suitable suggestions for intervention at various levels have been taken.

Normally, it is understand that in the starting stage of development, agriculture sector play important role as surplus of agriculture sector transfer to industry sector in the form of primitive accumulation and create home market for manufacturing. In turn, industry provides market and inputs to agriculture sector so that productivity increased. Through this transfer process from pre capitalist to capitalist mode of production peasantry economy convert itself into capitalist agriculture. In this capitalist agriculture economy, productivity of agriculture products is very high and dependence of workforce on agriculture very low like this happened in most of developed countries.

In India capitalist industrialization had never been conditioned by increased productivity of agriculture sector. According to Utsa Patnaik, before the independence vast sections of peasantry were impoverished. The surplus was concentrated in few hands which was neither used for increasing productivity of agriculture, nor did it induce growth of manufacturing. Limited development of manufacturing and limited size of home market did not create sufficient job. So, most of workforce still depended on agriculture sector for livelihood. The farming was not capitalist as Utsa Patnaik clearly said because per capita production was very low due to skewed distribution of land and resources before independence (Patnaik, 1990).

After independence, it seems to be that the process of transforming of traditional agriculture to modern farming economy will be started in which per capita production will be very high and declined steeply the dependence of population on agriculture sector. For this, land reform was taken for equitable distribution of resources in rural India as first step which was important constituent of 'National Freedom Movement'. But, land reform had not succeeded in its objective because rich peasantry retained feudal

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dominance through political, administrative and judicial machination and ruling class formed alliances with dominant propriety classes. Only small share of land was redistributed and invariably it was barren and poor quality land. In Punjab consolidation of land was carried out efficiently, which was crucial for introduction of modern technology and mechanization (Bardhan 1984).

Green Revolution changed agriculture economy of Punjab, Haryana and Western Uttar Pradesh from the traditional farming with new technology (High Yielding Variety seeds) along with the accompanying input package of irrigation, fertilizers and pesticides. Productivity and investment both were increased in agriculture sector. In these regions reverse tenancy was found. The big farmers in these regions leased in land from small and marginal farmers to enlarge their farm size to inculcate the benefit of new technology. The small and marginal farmers also were benefited from new technology. The increasing productivity is accompanied by the mechanization of farm operations which reduced the labour requirement. The employment elasticity had been near zero or even negative in Punjab, Haryana and Western Uttar Pradesh. But, State policies in the 70s and 80s helped in containing the workforce in agriculture sector through various poverty alleviation programmes and small farmer-marginal farmer schemes that provide supplementary income opportunities (Mehta, 2004).

Indian agriculture became non-viable after adoption neo-liberal policies in 90s. Food, fertilizer and credit subsidy was withdrawn after adoption of these policies. The prices Diammonium Phosphate (DAP) increased about 92.4 per cent, the prices of Potash increased by 162.1 per cent and the prices of urea increased by 67 per cent during 1991-92 to 2008-09. The imbalance in the consumption of nitrogen-phosphate-potash ratio was increased after decontrol of fertilizer that caused severe loss of fertility. In the consequences cost of production was increased along with decline the selling prices of agriculture products, credit and technology were poorly accessed by farmers (Narayanamoorthy 2007).

After introducing the neo-liberal policy, targeted public distribution system was adopted through which only below poverty holders can be benefited and remaining other section of rural economy excluded from this benefit. Thus Food Corporation of India required far less foodgrain than before. This follow the restricted purchase of grains from farmers and the government Mandis was dissolved through new amendments of Agricultural Produce Marketing Committee Act. This Act pushed the farmers towards corporate retail chain, which control villages supply chain with stringent terms and conditions (Mehta, 2005).

A change was observed in seed sector after introduction of new industrial policy of 1986, seed policy of 1988 and intellectual property right as private sector was allowed to produce seed. However, the changes did not bring about changes in production patterns as expected because private sector investment much affected the hybrid crops like maize and pearl millet, self-pollinated crops like wheat and rice were not affected (Ramakumar 2010).

The prices of all primary commodities had fallen due to remove import controls on agricultural commodities under trade liberalization policy. The government spending on infrastructure facilities was declined and many irrigation projects were incomplete due to paucity of funds. The growth rate informal credit market (moneylenders, traders *etc*.) was increased after changed the priority of banking sector to give direct advances to agriculture sector (Patnaik, 2002).

The share of private sector in total capital formation in agriculture and allied activities increased from 58.3 per cent (in 1980s) to 84 per cent in 2011 and share of public sector was shown falling trend. The rate of capital formation in agriculture had stagnated till 2000s, after then rate of capital formation increased from 8 per cent in1977-98 to 16.7 per cent by 2010-11. But, short term agriculture emphasized more than long term credit and portion of indirect credit was higher as compared to direct credit (directly given to produces). The agricultural loans made in urban/ metropolitan areas over rural/semi-urban areas in the 2000s as compared to the 1970s (Chavan, 2013).

It seems to be that from above discussion the agriculture sector might be come under distress if cost of product is very high, prices of product is very low and there may be poor infrastructure with low facility available after harvesting the crop for getting proper prices for the crop.

MATERIALS AND METHODS

The study has been made intensive reference to secondary data in trying to analysis the study objectives. Secondary data related to cost of inputs, prices of fertilizers, subsidies on fertilizers, consumption of fertilizers, harvesting prices have been collected mainly from the Statistical Abstract of Haryana, World Bank and Directorate of Economics and Statistics. The study has been descriptive in the nature and percentage method has been used to analysis the objectives of the study.

RESULTS AND DISCUSSION

Main inputs for any crop are seed, irrigation, fertilizer and insecticides. Fig 1 shows the trends related cost inputs of paddy crop in Haryana. It exhibits that cost of all inputs was increased. Out of all these inputs, cost of irrigation and fertilizers inputs were increased faster than other inputs cost. Fig 2 shows the trends related cost inputs of wheat crop in Haryana. The increasing trend in cost of all inputs was found in wheat crop also. Fertilizers and irrigation cost was increased faster rate as compared to other inputs. The insecticides were used more in paddy crop as compared to wheat crop. The cost of seed was also increased in paddy crop as well as in wheat crop. The percentage change in seed cost was higher in paddy crop as compared to wheat crop as it seen in Table 3. It seems to be that the private sector investment was more interested in the hybrid crops

and not much interested in wheat and paddy crops so, cost of seed will be stable for both of crops as mentioned by Ramakumar (2010) after implementation of Seed Policy 1988, but cost of seed increased for both of crops in Haryana.

The cost of fertilizers might be increased due to increase the international prices of fertilizers and withdrawal of subsidy on fertilizers. India mainly depends on import for 25 per cent of Urea requirement, 90 per cent of Phosphates either as raw material or finished fertilizers and 100 per cent in case of Potash. So, if there is change in International prices of fertilizers then it has direct impact on domestic prices and consequently subsidy. The trend in international prices of fertilizer is shown by Fig 3 and trend in subsidy on fertilizers shown by Fig 4.

Fig 3 shows that prices of MOP, DAP and Urea fertilizers have upward trends. International prices trends of DAP and MOP fertilizers were higher as compared to Urea. These types of trends create imbalance in consumption ratio of Urea, phosphate and potash. The Fig 4 shows that trends in subsidy on fertilizers. The trends in total subsidy on fertilizers have shown the same pattern as it was seen in international prices. But, opposite trends were found in subsidy on P & K (phosphate and potash) and Urea due to decontrol of phosphate and potash fertilizers and move from 'flexible subsidy-fixed prices' policy to 'fixed subsidy-fluctuate prices' on nutrient based subsidy. But, Urea subsidy was not declined instantly as so much as recommended by the policy because consumption of Urea was still used in a larger ratio as compared to phosphate and potash. Thus, due to increasing international prices of phosphate and potash as compared to Urea and declined trend in subsidy on phosphate and potash, the fertilizers cost increased as well as distort the soil fertility and these types of trends in prices and subsidy on fertilizers provided more fuel to worse the NPK ratio. The trends in NPK ratio shows in Table 1 which

Table 1: Trends in NPK ratio in Haryana.

Year	N	P	K
1990-91	88	27	1
1995-96	186	42	1
2000-01	74	21	1
2005-06	30	9	1
2010-11	20	7	1
2015-16	53	15	1
2016-17	24	7	1
Standard Ratio	4	2	1

Source: Various issues of Statistical Abstract of Haryana, Govt. of Haryana, Chandigarh.

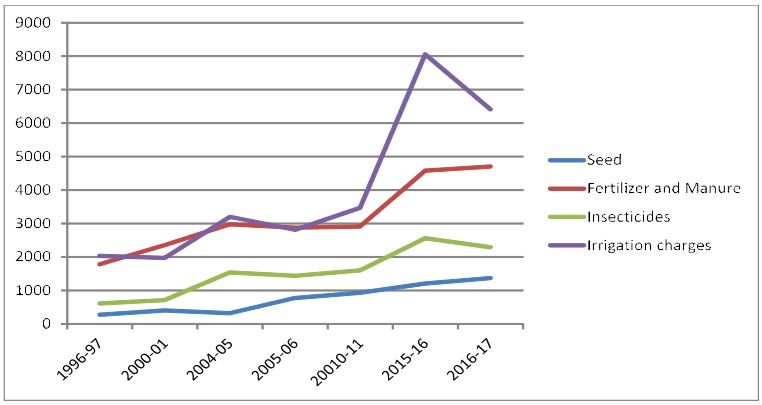

Fig 1: Trends in Input Cost of Paddy crop in Haryana (in rupees per hectare).

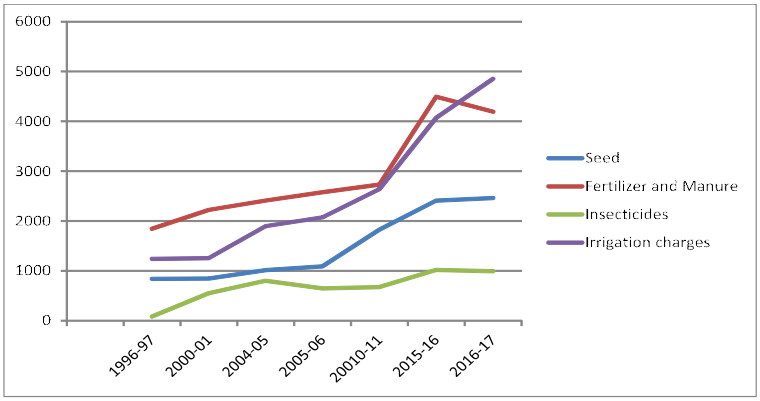

Fig 2: Trends in Input Cost of Wheat crop in Haryana (in rupees per hectare).

Sources: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Govt. of India.

depend on consumption pattern of Urea, phosphate and potash fertilizers. Table 1 shows that NPK ratio in Haryana was much higher as compared to standard ratio of NPK. According to study of Indian Institute of Soil Science (2000), this type of consumption relation of fertilizers will be adversely impacted productivity, fertility and sustainability in the long term.

Next important input of cost of production is irrigation. The trend in net irrigated area under tubewells and canals is shown in the Fig 5. Fig 5 shows that the cost of irrigation was increased due to net irrigated area under tubewell were increased faster rate that area under canal and canals irrigated area declined over the period.

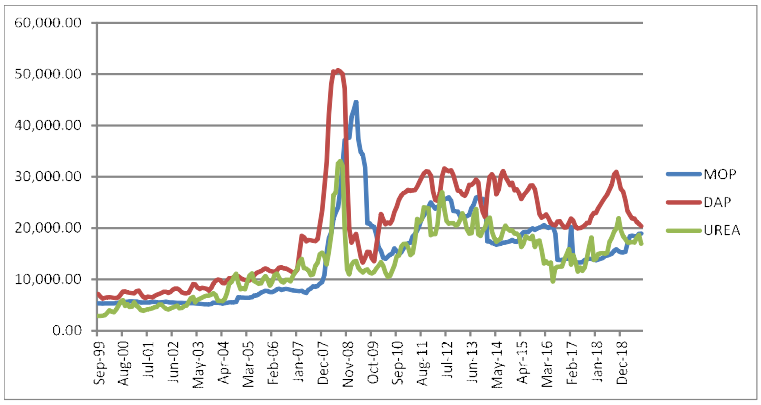

Fig 3: Trends in International Prices of Urea, DAP and MOP (in Indian rupees per Metric ton).
Source: World Bank.

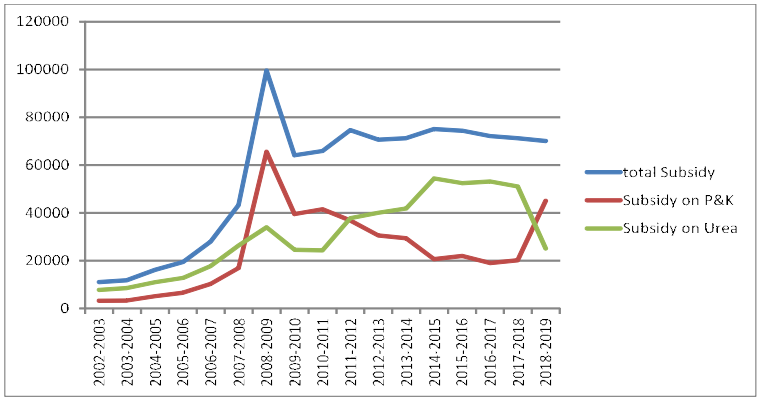

Fig 4: Trends in Subsidy on Fertilizers (in Rupees crore).
Source: Various issues of Statistical Abstract of Haryana, Govt. of Haryana, Chandigarh.

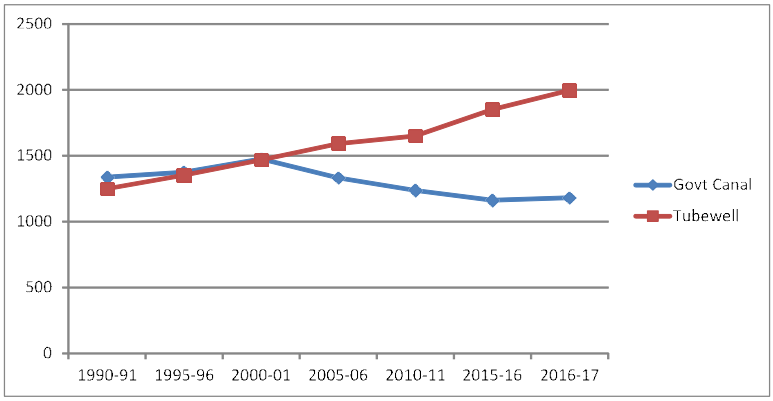

Fig 5: Trends in Net Irrigated area under Government Canals and Tubewells (in 000 hectares).
Source: Various issues of Statistical Abstract of Haryana, Govt. of Haryana, Chandigarh.

The trends in total cost of Paddy and Wheat crops show in the Fig 6 shows percentage change in cost of paddy crop and wheat crop over the period of 1996-97 to 2016-17. The Fig 6 shows that cost of production both crops increased and both cost curves have upward trends. In the last decade (2005-06 to 2016-17) cost of production increased more sharply, its means agricultural distress increased in the last decade.

The agriculture distress might be increased in sufficient prices is not given to farmers for agriculture products. So, harvesting prices of main crops of Haryana was study after adjusting the agriculture inflation that harvesting prices increased sufficiently or not. Table 2 shows that harvesting prices were decreased after adjusting agriculture inflation in the form of implicit price deflators. In absolute term harvesting prices increased but it were less than their real values of harvesting prices. So, sufficient prices were not gotten by farmers and it enlarges the size of agriculture distress in Haryana.

The next sub part deals with infrastructure development in agriculture. The Fig 7 reveals that revenue expenditure increased over the time period but capital expenditure not increased even it declined over the time period of 1985-86 to 2015-16. The declining trends in the capital expenditure showed that development of infrastructure in the agriculture sector was not the priority of Haryana government policy. These trends may affect the overall long term development of agriculture sector in Haryana. Thus, development of agriculture sector was not achieved its sustainability because overall trends in expenditure on agriculture and allied activities was declining. So, the agrarian stress increased in Haryana due to non-sustainability of agriculture sector.

Table 3 shows the government purchased of *Rabi* and *Kharif* crops in the form of procurement by all government agencies. Government agencies purchased only wheat crop from *Rabi* season and Paddy crop from *Kharif* season. Mustard crop from *rabi* season and Bajra crop from *Kharif* season also purchased for the time being by government agencies. Remaining other crops of both seasons was not purchased by government agencies. So, this behavior of government pushed the farmers towards corporate retail chain, which control villages supply chain with stringent terms and conditions. In this way, farmers might not sell their products on remunerative prices, even some time agricultural products of those crops remains unsold. Thus, no assurance was provided by government to purchase of both season crops except wheat and paddy crops and

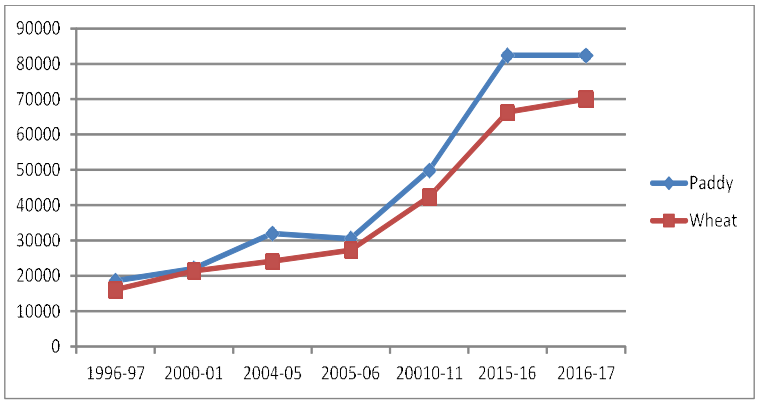

Fig 6: Trends in total cost of Paddy and Wheat crops in Haryana (in rupees per hectare).
Sources: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Govt. of India.

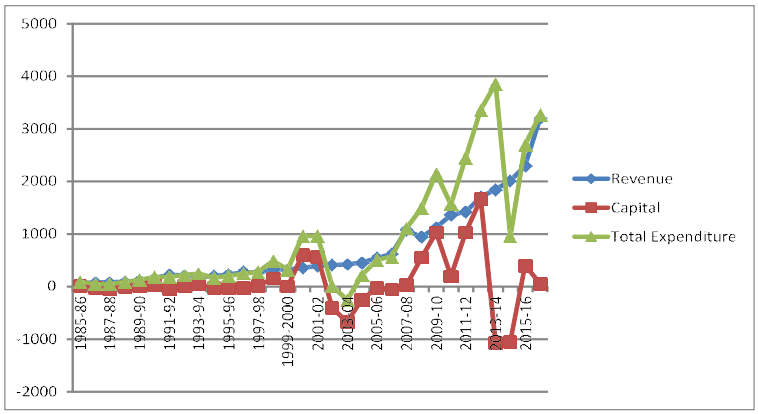

Fig 7: Trends in Agriculture Expenditure in Haryana.
Source: Various issues of Statistical Abstract of Haryana, Govt. of Haryana, Chandigarh.

Table 2: Deflated harvesting prices of Wheat and Paddy crops in Haryana.

Years	Harvesting prices (per quintal)		Agriculture inflation	Deflated harvesting prices		Difference	
	Wheat	Rice		Wheat	Rice	Wheat	Rice
2005-06	756.91	613.19	5.82	800.96	648.88	-44.05	-35.69
2006-07	856.07	644.65	11.10	951.09	716.21	-95.02	-71.56
2007-08	1000.00	716.14	17.97	1179.70	844.83	-179.70	-128.69
2008-09	1081.89	907.56	17.17	1267.65	1063.39	-185.76	-155.83
2009-10	1100.00	963.67	12.58	1238.38	1084.90	-138.38	-121.23
2010-11	1173.76	1056.57	10.58	1297.94	1168.36	-124.18	-111.79
2011-12	1289.50	1280.00	7.24	1382.86	1372.67	-93.36	-92.67
2012-13	1350.00	1436.00	12.69	1521.32	1618.23	-171.32	-182.23
2013-14	1430.00	1,533.06	9.09	1559.99	1672.42	-129.99	-139.36
2014-15	1486.49	1565.00	4.14	1548.03	1629.79	-61.54	-64.79
2015-16	1533.94	1570.00	1.95	1563.85	1600.62	-29.91	-30.62
2016-17	1626.39	1620.13	2.72	1670.63	1664.20	-44.24	-44.07
2017-18	1744.20	1650.42	3.73	1809.26	1711.98	-65.06	-61.56

Sources: Calculated through various Statistical Abstract of Haryana.

Table 3: Procurement of *Rabi* and *Kharif* Crops in Haryana.
(In Percentage of total production)

Year	*Rabi* crops		*Kharif* crops	
	Wheat	Mustard	Paddy	Bajra
2000-01	46.70	4.30	33.72	-
2001-02	66.30	6.43	38.49	-
2002-03	62.39	9.42	41.60	-
2003-04	55.75	-	24.37	19.83
2004-05	56.44	-	34.87	17.37
2005-06	50.00	37.08	48.93	0.72
2006-07	25.18	57.97	41.48	-
2007-08	33.32	-	32.93	12.09
2008-09	51.18	-	36.82	28.56
2009-10	60.95	-	48.44	8.28
2010-11	60.52	-	47.75	6.23
2011-12	59.84	-	52.42	1.48
2012-13	66.69	-	64.60	-
2013-14	48.36	-	61.02	-
2014-15	52.57	-	51.54	-
2015-16	59.39	-	69.04	-
2016-17	56.77	-	-	-

Sources: Food Civil Supplies and Consumer Affairs Department, Government of Haryana.

diversification of crops was not possible without assurance of government.

CONCLUSION

On behalf of the above discussion, it was observed that cost of all main inputs increased over the long time. Fertilizers cost increased due to increase international prices, decontrol of potash and phosphate fertilizers and adopted fixed subsidy with flexible prices policy. An imbalance also generated in NPK ratio of consumption of fertilizers which was harmful for soil fertility. Irrigation cost also increased due to over use of tubewell resources for irrigation as compared to canal resources. Overall all components of cost showed increasing trends. But the remunerative prices for the crops were not received by farmers because real value of harvesting prices was declined. Only wheat and paddy crops were procured by government from both seasons, remaining other crops were not procured by government agencies. So, no proper assurance to purchase of crops other that wheat and paddy was given by government. In case of infrastructure development in agriculture sector, capital expenditure was decline over the time period of 1985-86 to 2015-16. Thus agriculture distress was enlarging due to increasing cost conditions, not getting proper remunerative prices and poor infrastructure development process. For controlling the distress in agriculture sector government should take up following step:

a) Irrigation should be increased through canals.
b) More subsidies should be given to phosphate and potash fertilizers so that standard NPK fertilizers consumption ratio can be achieved.
c) Fertilizers prices should be sold in control market.
d) Deflated Harvesting prices should be given to the farmers so that income of the farmers increased.
e) Most of crops of Rabi and Kharif season should be procured by government agencies.
f) Capital expenditure agriculture and allied activities should be increased so that proper infrastructure development possible.

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