



AN ANALYSIS OF THE INFLUENCE OF AGRICULTURAL POLICY ON CHANGING CROPPING PATTERN IN INDIA

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Abstract: *Agriculture is a way of life and a tradition for millions of cultivators in India for centuries. More than 60% of people depend on agriculture, directly or indirectly. Agriculture and allied sector accounted 13.9% of the GDP in 2013. Since independence, Indian agriculture has made rapid strides. At the time of independence India was facing the problem of food shortages. The annual food production at that time was 51 million tones. It increased to 259.32 million tones by 2011-12. The first National Agricultural Policy was announced by the Government of India during 2000, for the development of agricultural sector. Agricultural policies influence through their influence on prices of input and output. While self sufficiency in food grains was the objective of Agricultural policy in the initial years of planning in India, later it was shifted towards increasing the returns on investment in Agriculture. The Policies adopted by the Government of India resulted in attaining self sufficiency in food grains. After the introduction of agriculture policy, there is a shift in the cropping pattern resulting in the decline continuously in area under food crops and increase in the area under non- food crops continuously. This has an influence on the prices of food grains and the food security.*

In the present study analyzes the influence of agricultural policy on changing cropping pattern in India, before and after announcement of the Agricultural policy in India 2000. In analyzing the impact the study looks into the prospects for food security in India.

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INTRODUCTION

Agriculture is a way of life and a tradition for millions of cultivators in India for centuries. More than 60% of people depend on agriculture, directly or indirectly. Agriculture and allied sector accounted 13.9% of the GDP in 2013. Since independence, Indian agriculture has made rapid strides. At the time of independence India was facing the problem of food shortages. The annual food production at that time was 51 million tones. It increased to 259.32 million tons by 2011-12.

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Cropping pattern refers to the proportion of area under different crops at a particular period of time. A change in cropping pattern implies a change in the proportion of area under different crops. The cropping pattern in any area is determined by technical, institutional and agro climatic factors. The change in cropping pattern is the result of the adoption of new crops of and the intensification of cultivation through multiple cropping.

Food security refers to the availability of food and one's access to it. The world food summit of 1996 define food security as existing "When all people at all-time have access to sufficient, safe, nutritious, food to maintain a healthy and active life". There are so many factors which influence food security, changes in cropping pattern is one among those factors.

REVIEW OF LITERATURE

In a study on causes and consequences of changing cropping pattern in Kerala **Mahesh (1999)** identified the causes for changes in cropping pattern. They are- increase in land use for non agriculture purpose, technological change, increasing pressure on land, modernization and commercialization of agriculture, price factors, etc., The identified the consequence are changes in agriculture production, changes in farm income, decrease in women's participation, etc. The study also observed that there is a shift in the area from seasonal/ annual crops to high value/cash crops.



Uma H.R et al (2013) analyzed the impact of cropping pattern on food security in India. Based on the primary data collected from individual households with a focus on Hassan District, in Karnataka. The major finding of this study is that there is a shift in cropping pattern from food crops to commercial crops, and this has a direct impact on food security in future.

OBJECTIVE OF THE STUDY

The important objectives of this study are

1. To analyze the influence of agricultural policy on changing cropping pattern in India, before and after the announcement of the Agricultural policy in India of 2000.
2. To analyze the linkages between changing cropping pattern and food security in India.

METHODOLOGY

This study is based on purely secondary data. The data collected from the annual reports of Ministry of Agriculture and Co-operation. Twenty years data from 1990 to 2010 has been divided into two groups as before the introduction of Agriculture policy and after the introduction of the Agriculture policy in India.

AGRICULTURE POLICY

Governments implement agricultural policies with the goal of achieving a specific outcome in the domestic agricultural product markets. Outcomes can involve, for example, a guaranteed supply level, price stability, product quality, product selection, land use or employment.

Policy making in agriculture is set with several difficulties. The following are some of the problems in making agricultural policy. First, agriculture is an unorganized sector and therefore policy responses could not be predicted a priori with objective probabilities. Second, the information flow to agricultural sector is not as quick as it takes place in other sectors. The information asymmetry poses problems in predicting outcomes. Climatic differences and their influence agriculture is the third problem. The fourth significant factor is the income and asset distribution in the sector. Last, the sector has a strong link with consumers and other industries. The growth of the aggregate economy of any country is sensitive to the fluctuations in the sector.



Therefore, agricultural policies in India as well as many other countries have a strong state dependence. Policy formulation in India is largely from two sources namely the five-year plans and various schemes initiated by the development departments concerned.

EMERGENCE OF AGRICULTURAL POLICY

The emergence of agricultural policy in India began with the introduction of food grains policy committee of 1943. This committee focused on food availability, controlling prices, supplies and distribution. In 1947 the food grains policy committee under Thakur Das looked into the food distribution aspects and the committee recommended a revolutionary step to progressively decontrol food. Several committees have been appointed at different stages to formulate appropriate agricultural policies. Some of them are Maitra committee (1950), Mehta committee (1957), Venkatappaiah committee (1966), high power committee (1990). The Agricultural policy document of 2000 was the first complete attempt towards formulating a long-term policy for the sector.

NATIONAL AGRICULTURAL POLICY 2000

The first ever National Agriculture Policy was announced on 28th July, 2000. The National Policy on Agriculture seeks to utilize the vast untapped growth potential of Indian agriculture, strengthen rural infrastructure to support faster agricultural development, promote value addition, accelerate the growth of agro business, create employment in rural areas, secure a fair standard of living for the farmers and agricultural workers and their families, discourage migration to urban areas and face the challenges arising out of economic liberalization and globalization.

The salient features of the national agricultural policy are:

1. Price protection for farmers.
2. Dismantling of restrictions on movement of agricultural commodities throughout the country.
3. Rational utilization of country's water resources for optimum use of irrigation potential.
4. High priority to development of animal husbandry, poultry, dairy and aquaculture.
5. Capital inflow and assured markets for crop production.
6. Minimize fluctuations in commodity prices.
7. Continuous monitoring of international prices.



8. Plant varieties to be protected through legislation.
9. Adequate and timely supply of quality inputs to farmers.
10. High priority to rural electrification.
11. Setting up of agro-processing units and creation of off-farm employment in rural areas.

CHANGES IN AREA UNDER IRRIGATION AND DIFFERENT CROPS IN INDIA

Irrigation plays an important role in influencing the area under cultivation. In order to improve the irrigation facility several programmes were introduced through planning period. Watershed development is one of the programmes with a wider coverage. The efforts have resulted in the increase of area under irrigation and consequently total area under crops.

TABLE.1 CHANGES IN AREA UNDER IRRIGATION AND DIFFERENT CROPS IN INDIA

(Area in million Hectares)

Year	1990-91	2003-04	2009-10
Total area under crops	185.74	189.67	192.20
Net area sown	143.00	140.71	140.02
Cropping Intensity (percent)	129.89	134.60	137.26
Area under food crops	141.03	142.12	141.06
Area under non food crops	44.71	47.55	51.14
Net irrigated area	48.02	57.05	63.26
Total/gross irrigated area	63.20	78.04	86.42

(Sources: State of Indian Agriculture 2012-13 report)

Table 1 shows that total area under crops increased from 185.74 million hectares in 1990-91 to 192.20 million hectare by 2009-10. During the same period net area irrigated from 48.02 million to 63.26 million hectare. Cropping intensity also increased from 129.89 million to 137.26 million hectares between 1990-91 and 2009-10. Due to improved irrigation facility, though area under crops increased, net sown area decreased in 2009-10. While area under food crops remained constant, area under non- food crops increased from 44.71 million hectares in 1990-91 to 51.14 million hectares in 2009-10.

CHANGES IN CROPPING PATTERN

Cropping pattern refers to the proportion of area under different crops at a particular period of time. A change in cropping pattern implies a change in the proportion of area



under different crops. The change in cropping pattern is the result of the adoption of new crops of and the intensification of cultivation through multiple cropping.

Cropping pattern keeps on changing over years due to so many reasons. Cropping pattern is mainly decided by number of soil and climate parameters as well as on policies of government regarding Agriculture. As there are changes in the policies of government it influences the cropping pattern. With the emphasizing on commercialization and return on agriculture, the policy promotes non-food crops. If Crop pattern changes in favour of non-food crops it affects the food security. An analysis of Changes in the area under food and non-food crops gives us a clear idea about shifts in cropping pattern before and after the announcement of agriculture policy of India 2000.

TABLE.2 TRENDS IN AREA UNDER FOOD CROPS AND NON FOOD CROPS

(Area in Million Hectares)

Before announcement of Agriculture Policy						After announcement of Agriculture Policy					
Year	Food crops	% to total	Non food crops	% to total	Total crops	Year	Food crops	% to total	Non Food crops	% to total	Total crops
1990-91	141.03	75.92	44.71	24.07	185.74	2000-01	138.49	74.72	46.84	25.27	185.33
1991-92	136.03	74.64	46.20	25.35	182.23	2001-02	141.06	75.03	46.94	24.96	188.00
1992-93	139.01	74.89	46.60	25.10	185.61	2002-03	132.24	76.05	41.64	23.94	173.88
1993-94	138.75	74.36	47.84	25.63	186.59	2003-04	142.12	74.93	47.53	25.06	189.65
1994-95	140.54	74.73	47.51	25.26	188.05	2004-05	139.85	73.18	51.25	26.81	191.1
1995-96	138.27	73.75	49.19	26.24	187.46	2005-06	141.16	73.24	51.56	26.75	192.72
1996-97	140.15	73.96	49.34	26.03	189.49	2006-07(p)	142.13	73.87	50.25	26.12	192.38
1997-98	140.79	74.10	49.19	25.89	189.98	2007-08(p)	144.55	74.04	50.66	25.95	195.21
1998-99	142.55	74.38	49.10	25.61	191.65	2008-09(p)	143.02	73.23	52.28	26.95	195.3
1999-00	140.51	74.58	47.88	25.41	188.39	2009-10	141.06	73.39	51.14	26.76	192.2
Average	139.76		47.75			Average	140.56		49.00		

Source: Directorate of Economics & Statistics, Ministry of Agriculture.

(P- Provisional) (Food crops= total cereals & millets, total pulses, sugarcane, total condiments & spices, total fruits & vegetables, other food crops) (Nonfood crops= total oilseeds, total fibres, indigo, opium, tobacco, tea, coffee, fodder crops, other nonfood crops)

Table 2 shows the area under food crops and non food crops in India. According to available statistics there is a shift in the area in favour of non food crops from food crops. Before the announcement of agriculture policy the average area under food crop was 139.76 million



hectares and it has increased to 140.56 million hectare. On the other hand the area under average non food crops was 47.75 million hectare before the announcement of Agriculture policy and it has risen to 49.00 million hectares after the announcement of Agriculture policy. The area under food crops has registered an increase of only 0.8 million hectares, where as the area under non food crops has registered an increase of 1.25 million hectare. Index numbers show real changes in the area under food and non food crops. Table 3 gives the index number of food crops and non food crops with a base period of triennium ending 1981-82.

TABLE.3 CHANGES IN THE AREA UNDER FOOD CROPS AND NON FOOD CROPS

(In Index Numbers with a base period of triennium ending 1981-82)

(In Million tones)

Year	Food Crops	Non-food Crops
1990-91	100.7	120
2000-01	95.4	127
2005-06	95.8	140.9
2006-07	97.5	143
2007-08	97.7	145.3
2008-09	96.8	148.7
2009-10	95.6	143.4
2010-11	99.1	150.1

(Source: Directorate of Economics & Statistics, Ministry of Agriculture)

The data shows that there is a decline in the area under food crops continuously and increase in the non food crops. Compared to the base year of 81-82, area under food crops declined marginally points by 2010-11. But the area under non food crops increased by 150.1 points. This clearly shows the shift in the area under cultivation towards non food crops.

FOOD SECURITY

Food security has different meanings for different people. The International Conference on Nutrition (ICN), held in Rome in 1992, defined food security as "access by all people at all times to the food needed for a healthy life".

GLOBAL FOOD SECURITY

According to Global food security Index 2012 calculated by Economics Intelligence Unit, United States of America is ranking one in overall index. European countries are in the next seven positions after USA. Canada and Germany are in the ninth and tenth positions. Out of



the 105 countries, India is at the 66th position. In terms of scoring, India's score is 45 indicating that only 45 percent of the population haven overall food security, i.e. in food affordability, availability, quality and safety. While the score is 71 in food affordability, it is 52 in food availability and 73 in food quality and safety. This shows that though there is a better affordability and quality food, food availability is less.

TABLE.4 GLOBAL FOOD SECURITY INDEX RANKING

(Rank out of 105 countries)

Rank	Country	Score/100
1	USA	89.5
2	Denmark	88.1
3	Norway	88.0
4	France	86.8
5	Norway	86.7
6	Netherlands	85.6
7	Australia	83.7
8	Switzerland	83.4
9	Canada	83.1
10	German	83.0
66	India	45.0

(Source: <http://foodsecurityindex.eiu.com/Country>)

Food security at the national level refers mainly to availability in the country of sufficient stock in food to meet their domestic demand.

AVAILABILITY OF FOOD

Per capita net availability of food is a proxy indicator for the food security and trends in the availability of food and non food items are presented in table 4.

TABLE.5 PER CAPITA NET AVAILABILITY (In grams per day)

Before Announcement of Agriculture Policy			After Announcement of Agriculture Policy		
Year	Cereals	Pulses	Year	Cereals	Pulses
1991	468.5	41.6	2001	386.2	30
1992	434.5	34.3	2002	458.7	35.4
1993	427.9	36.2	2003	400.8	29.1
1994	434	37.2	2004	426.9	35.8
1995	457.6	37.8	2005	390.9	31.5
1996	442.5	32.7	2006	412.8	32.5
1997	466	37.1	2007	407.4	35.5
1998	414.2	32.8	2008	394.2	41.8
1999	429.2	36.5	2009	407	37
2000	422.7	31.8	2010	407	31.6
Average	439.71	35.8	Average	409.19	34.02

(Source: Directorate of Economics & Statistics, Ministry of Agriculture)



The table 5 shows that the average quantity of cereals and pulses available per capita per day decreased after the announcement of Agriculture policy when compared to the before announcement of Agriculture policy. Before the announcement of Agriculture policy the average quantity of cereals was 439.71 grams and pulses is 35.8 grams. After the announcement of Agriculture policy the average total cereals decreased to 409.19 grams and pulses to 34.02 grams. There is a decline of 30.52 grams in cereals and decline of 1.78 grams in pulses after the announcement of Agriculture policy. There is significant decrease in cereals than pulses.

CONCLUSION

Agriculture is the main occupation of Indian population. There are more than 60% of people depend directly or indirectly in agriculture sector. But the agriculture sector facing many problems. Keeping these issues in view the government of India has announced the National Agriculture Policy 2000. The main aim of the policy is achieving their specific objectives. Cropping Pattern has also changed after the announcement of Agriculture policy, by the analysis of available data it is evident that there is a significant increase in the production and area under non food crops, but production of food crops has declined and there is slight improvement in the area under food crops. Per capita net availability of cereals and pulses declined after the announcement of Agriculture policy. The main reason for this phenomenon is an increase in the area under non food crops, it directly affects food security. The major reasons behind the increase in non food crops are the profitability of non food crops than food crops. Though there is an increase in net irrigated area as well as total irrigated area, there are no improvements in the production of food crops.

REFERENCES

1. **Acharya (2009)** Food Security and Indian Agriculture: Policies, Production Performance and Marketing Environment, Agricultural Economics Research Review Vol. 22 January-June 2009 pp 1-19.
2. **Birner et al (2011)** The Political Economy of Agricultural Policy Reform in India. International Food Policy Research Institute, Washington, D.C. 2006-1002, U.S.A.
3. **Bidyut kumar ghosh (2011):** Determinants of changes in cropping pattern in India: 1970-71 to 2006-07, Bangladesh development studies, vol. xxxiv, No.2.



4. **Deshpande and Prachitha (2006)** Agricultural policy in India, Agricultural Development and Rural Transformation Centre (ISEC).
5. **Indian Agricultural policy review (2008)**: Agriculture and Agri – food Canada, Vol.4, No. 3
6. **Mahesh. R (1999)**: Causes and Consequences of Change in cropping patter: A location – specific study, Discussion paper No.11, ISBN No: 81-87621-10-9.
7. **National Rain fed Area Authority (NRAA) 2011**: Challenges of food security and its management. Published by NRAA, position paper 5.
8. **Singh et al (2002)** Small Holder’s farmers in India: Food security and agricultural policy. FAO RAP (Regional Office for Asia and the Pacific) publication: 2002/03.
9. **Uma H.R et al (2013)**: Changing Cropping Pattern: A Boon or A bane to food security, International journal of humanities and social science invention, volume 2, Issue 8, PP No 07-11.

INTERNET SOURCES

- [http://www. Ministry of agricultural and co operation department](http://www.Ministryofagriculturalandcooperationdepartment)
- [http://www. FAO.org](http://www.FAO.org)
- [http://www. Indiastat.com](http://www.Indiastat.com)