International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Effects of Indian Agricultural Reforms on an Agricultural Sector

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Abstract: ***The various economic reform strategies undertaken by government over a period of about three decades on the agricultural sector in India were the exploitative strategy, agricultural project strategy, direct production strategy and integrated rural development strategy. Overall, these economic reform strategies were geared toward the achievement of food self - sufficiency and food security, generation of gainful employment, increased production of raw materials for industries, increased production and processing of export crops, rational utilization of agricultural technologies for the improvement of life of its citizens. These strategies notwithstanding, government also pursued other on - going initiatives to step - up agricultural development across the country. The effects of economic reforms on the agricultural sector was examined alongside its fundamental roles of food security, supply of raw materials to industries, provision of market, employment and foreign exchange as well as generation of savings for investment in agriculture and other sectors. Agriculture contributed minimally during the period in terms of output, market, foreign exchange and capital formation or transfer as a result of policy instability, poor coordination of policies, poor implementation and mismanagement of policy instruments and lack of transparency. It is recommended that enduring genuine good governance should be allowed to thrive in India in order to achieve poverty reduction, sustainable livelihood and food security which will guarantee comprehensive economic development and attainment of the Millennium Development Goals (MDGs 2020).***

Keywords: Economic reforms, agricultural reforms, infrastructural development, crop insurance, stabilization

1. Introduction

India is an agrarian country with about 70% of her over 1.33 billion people engaged in agricultural production (NSSO, 2006) and provides subsistence for two - thirds (2/3) of Indians. India guarantees the production of cereals such as maize, millet, groundnut, wheat, rice, cottons and many more. In addition to crops, the country is also involved in the production of livestock, fisheries, forestry and wildlife.

India is generally endowed with abundant natural resources, numerous all - season rivers and a favorable tropical climate. Rainfall is generally adequate and fairly well distributed throughout the country. I**ndia's** arable **land area** of 159.7 million hectares (394.6 million acres) is the second largest in the world, after the United States. Its gross irrigated crop **area** of 82.6 million hectares (215.6 million acres) is the largest in the world.

2. The Problem

Although agriculture had remained the mainstay of the Indian economy, there has been declining contributions of agriculture to the gross domestic product (GDP) in the past three decades. This could be associated with the gross neglect of the agricultural sector. In the pre - and post - independence era (1930 to 1965), the Indian economy was predicated on agriculture. Agriculture employed about 70 to 80% of the country's labour and contributed 55% of the nation's gross domestic product (GDP) before 1947.

Services sector is the largest sector of India. Gross Value Added (GVA) at current prices for Services sector is estimated at 61.18 lakh crore INR in 2014 - 15. Services sector accounts for 52.97% of total India's GVA of 115.50 lakh crore Indian rupees. With GVA of Rs.34.67 lakh crore, Industry sector contributes 30.02%. While, Agriculture and allied sector shares 17.01% and GVA is around of 19.65 lakh crore INR.

In order to revamp the agricultural sector, the federal government had embarked on and implemented several agricultural policies and programmes some of which are defunct or abandoned, and some restructured while others are still in place. These include the farm settlement scheme, Gramin Bhandaran Yojana (2007), National Scheme on Welfare of Fishermen, Rashtriya krishivikasyojana (2007), Sampoorna Grameen Rozgaryojana, National Rural livelihood mission (NRLM), National food security mission.

In a historic move, the NDA Government has unveiled a pro - farmer Crop Insurance Scheme. "The Pradhan Mantri Fasal Bima Yojana" will replace the existing National Agricultural Insurance Scheme (NAIS) and Modified NAIS (MNIAS). Krishisinchaiyojana has been launched by Prime Minister Narender Modi to provide proper infrastructural facilities to enhance the irrigation facilities in areas which lack in it. Despite all the aforementioned reform policies and programmes, the performance of the sector had not fared better than it was before independence. It is against this background that this research was designed and considered imperative at this time in the nation's history.

3. Research Objectives

This study was therefore designed primarily to assess the performance and the effects of these government agricultural reforms and strategies on the agricultural sector.

Specifically the study sought to:
1) Review the various federal agricultural reforms, programmes and interventions designed and

implemented to restore agriculture to its prime position in the economy.
2) Determine the effects and nature of the individual contributions of these reforms and programmes on the agricultural sector.
3) Identify the problems and/or factors that militate against the achievement of the desired impact of these reform programmes/strategies on the agricultural sector.
4) Proffer recommendations for improvement based on findings.

4. Review of Literature

Government of India's Rural Development and Poverty Alleviation Programmes have been evaluated by various Government organizations viz. Programme Evaluation Organization of the Planning Commission, Concurrent Evaluations carried out by the Ministry of Rural Development with the help of reputed institutions located at the regional level, RBI, NABARD, IFMR, NIUA, NIRD and other organizations like Universities, Research Institutes, NGOs, and Individuals. Their approaches, conceptualization and methodology laid their focus on the success and shortfalls in terms of performance, as measured by income and employment generation or assets creation. But they have not attempted to quantify the negative externalities of the programmes, as their conceptualization (theoretical caveat) was limited in focus and was constrained by the immediate requirement of the policy makers.

Various studies undertaken by distinguished scholars have broadened the understanding of the related issues.

For example,
Hanumantha Rao (1994) inter - related the five themes viz., agricultural growth, rural poverty, environmental degradation, participatory rural development, and economic reforms in relation to agriculture. Both growth and poverty interact with environment in complex ways, each affecting the other. The author makes a critical appraisal of the participatory processes and also of some recent reforms – which have implications both for poverty and environment.

A similar study carried out by Manikkumaran (1997) in the State of Tamil Nadu. He has examined last 30 years secondary data from 1960 - 1990 and found that the agricultural growth is inversely related to rural poverty and directly related to environmental quality in the State of Tamil Nadu.

Bina Agarwal (1997) analyzed the interrelationships between gender, poverty and the environment in rural India, focusing especially on regional variations and temporal shifts over 1971 - 91. Briefly identifying the major factors underlying environmental degradation, the study traces why and how this degradation and the appropriation of natural resources by the state (statization) and by some individuals (privatization), tend to have particularly adverse implications for the female members of poor rural households. She further examined Governmental and community initiated attempts at environmental protection and regeneration and computed an aggregate index GEP (V) to address those issues.

The relationship between poverty, environment and development is quite complex and not amenable for easy generalization. There is a widely held view, particularly in the West; the poverty is the main cause of environmental deterioration, because the poor are not in a position to use natural resources sustainably (Duraippah 1996, Prakash 1997). The degradation in turn, it is believed leads to aggravation of poverty.

The poor in this view are perceived as having a short time horizon, discounting the future benefits from conservation rather heavily owing to the urgency to make a livelihood and avoid hunger. Such a time horizon leads to unsustainable use of natural resources (M. V. Nadkarni 2000).

5. Research Methodology

Study area
India was the focus of the study. It has an area of 3.287 million km2 and a population of over 1.33 billion people. India is home to an extraordinary variety of climatic regions, ranging from tropical in the south to temperate and alpine in the Himalayan north, where elevated regions receive sustained winter snowfall. The nation's climate is strongly influenced by the Himalayas and the Thar Desert. and agriculture is a major employer of labour, and the mainstay of the economy despite her dependence on service sector.

The approach used for this research were mainly desk study, data collection from secondary sources as well as analysis of data using descriptive statistics and other qualitative methods.

Data collection
This involved desk study and/or review of relevant literature such as journals, technical documents, government gazettes, RBI annual reports and bulletions, and published materials from the National Bureau of Statistics and the National Planning Commission (NPC), among others. Internet resources were also consulted.

This also involved the collection of time series data on gross domestic product (GDP), output of agricultural products, exports and revenues, etc. The study focused on data/information available from 1960 to 2011.

Data analysis
Data collected were analyzed using such descriptive statistics as percentages, means/averages, frequency tables, charts as well as cross tabulations.

6. Results and Discussion

Historical perspective of agricultural reforms/policies and programmes
India's perception of the place and role of agriculture in national development changed considerably over time. The affected policies, strategies and schemes used to address issues of the scheme equally changed. Different strategies adopted by the country shows dynamism and changing strategies that overlaps and cannot be appropriately segregated into time phases. Often it was a combination of

two or more strategies to implement agricultural policies designed at different time periods.

Introduction of New Agricultural Strategy:
The new agricultural strategy was adopted in India during the Third Plan, i. e., during 1960s. As suggested by the team of experts of the Ford Foundation in its report "India's Crisis of Food and Steps to Meet it" in 1959 the Government decided to shift the strategy followed in agricultural sector of the country.

Thus, the traditional agricultural practices followed in India are gradually being replaced by modern technology and agricultural practices. This report afford Foundation suggested to introduce intensive effort for raising agricultural production and productivity in selected regions of the country through the introduction of modern inputs like fertilizers, credit, marketing facilities etc.

Accordingly, in 1960, from seven states seven districts were selected and the Government introduced a pilot project known as Intensive Area Development Programme (IADP) into those seven districts. Later on, this programme was extended to remaining states and one district from each state was selected for intensive development.

Accordingly, in 1965, 144 districts (out of 325) were selected for intensive cultivation and the programme was renamed as Intensive Agricultural Areas Programme (IAAP).

During the period of mid - 1960s, Prof. Norman Borlaug of Mexico developed new high yielding varieties of wheat and accordingly various countries started to apply this new variety with much promise. Similarly, in the kharif season in 1966, India adopted High Yielding Varieties Programme (HYVP) for the first time.

This programme was adopted as a package programme as the very success of this programme depends upon adequate irrigation facilities, application of fertilizers, high yielding varieties of seeds, pesticides, insecticides etc. In this way a new technology was gradually adopted in Indian agriculture. This new strategy is also popularly known as modern agricultural technology or green revolution.

In the initial stage, HYVP along with IAAP was implemented in 1.89 million hectares of area. Gradually the coverage of the programme was enlarged and in 1995 - 96, total area covered by this HYVP programme was estimated 75.0 million hectares which accounted to nearly 43 per cent of the total net sown area of the country.

As the new HYV seeds require shorter duration to grow thus it paved way for the introduction of multiple cropping, i. e., to have two or even three crops throughout the year. Farmers producing wheat in Punjab, Haryana, Western Uttar Pradesh, Rajasthan and Delhi started to demand heavily new Mexican varieties of seeds like Lerma Rojo, Sonara - 64, Kalyan and PV. - 18.

But in case of production of rice, although new HYV varieties of seeds like TN. - l, ADT - 17, Tinen - 3 and IR - 8 were applied but the result was not very much encouraging. Some degree of success was only achieved in respect of IR - 8.

The basic elements of the growth strategy adopted in the earlier phases of agricultural development are as follows:

1) Extensive Cultivation:
A major plan of the government policy was to bring more land under cultivation. It was hoped that this would help in increasing agricultural production. The objective was sought to be realized by reclaiming fallow and water - logged lands and making the non - cultivable land suitable for cultivation. The result of efforts would be seen from the fact that the index number of areas under cultivation went up from 400 in 1950 - 51 to 122.8 in 1966 - 67. But the country was faced with a dead - end, i. e. there was no more area of land available for reclamation. The futility of depending on this policy measure in the long run was soon realised. It began to be appreciated that agricultural development policies will have to emphasise the adoption of 'intensive cultivation' practices which became a major component of the new strategy.

2) Institutional Reforms:
It is universally accepted that agriculture responds to two sets of measures, viz.
a) Institutional reforms, and
b) Technological reforms.

Institutional reforms refer to such measures as are designed to change the land relations system and the size of land holdings. It also incorporates infrastructural facilities like finance and marketing. Technological reforms, on the other hand, are concerned with improvements in agricultural practices and techniques. In the earlier period of development, the state relied almost exclusively on institutional reforms, to a near total neglect of the technological reforms.

The state had come to adopt the basic principle of 'land to the tiller' as the hallmark of its land reform policy. In pursuance of this policy, a land reform programme of such policy measures as abolition of all intermediaries' interest on land, grant of protection to tenants, etc. were taken.

Similarly, legislation enacted to fix a ceiling on land holdings and consolidated of holdings designed to change the ownership pattern of land were also not of much use. Rural finance was sought to be provided through the agency of cooperatives.

At a later stage of the programme, even marketing was assigned to the co - operatives. But the institutional reforms of all these types were slow to come in. Steps related to technological reforms did find a place in the 'earlier growth strategy'.

3) Increased Availability of Traditional Inputs:
A third major component of the government policy related to the availability of inputs. The traditional inputs of agriculture – seeds, manure and water, received much attention. Arrangements were made to make available seeds

to the farmer at his doorstep through various agencies, especially the co - operatives. Similarly, a number of irrigation schemes - both major and minor - were initiated during the First and Second Five Year Plans, so as to raise the irrigation potential.

Efforts were also made to spread the use of underground water sources like wells. The nucleuses of the government policy in this sphere again were the institutional reforms to arrange for the supply of these inputs. No attention was paid towards evolving better seeds or more superior production inputs. It was only in the later years that these aspects began to get the attention that was due to them.

4) Community Development Programme and Extension Services:

The community development (CD) programme was seen as the most significant device for the development and welfare of rural India. By community development is meant the upliftment of the rural community with the combined efforts of the government and the people using the resources of the community as a whole. For carrying out the national programme of community development, the country was divided into 6, 265 development blocks.

Each of these blocks was expected to be supplied with the basic infrastructure required for agricultural growth. However, as the experience later was to prove, the CD programme turned out to be very ambitious in terms of its content and coverage. It was realized that it would have been better has small blocks with the best growth potential been selected and helped with the required infrastructural facilities before a national programme was implemented.

Effects of agricultural reforms, policies and programmes on the agricultural sector:

The assessment of the effects of the agricultural reforms and policies on the agricultural sector is with respect to the fundamental roles, of agriculture, namely;

a) Provision of adequate food for a growing population and raw materials for industries.
b) Provision of an expanding market for non - agricultural products
c) Generation of savings for investment in agriculture as well as other sectors and release of surplus or under - utilized resources to other sectors.
d) Generation of foreign exchange.

These are discussed in line with the historical periods of the various policy reforms and programmes as follows:

In the past agriculture has played and will continue to play a dominant role in the growth of Indian economy in the foreseeable future. It represents the largest sector producing around 28 percent of the GDP, is the largest employer providing more than 60 percent of the jobs and is the prime arbiter of living standards for seventy percent of India's population living in the rural areas. These factors together with a strong determination to achieve self - sufficiency in food grains production have ensured a high priority for agriculture sector in the successive development plans of the country.

An important facet of progress in agriculture is its success in eradication of its critical dependence on imported foodgrains. In the 1950's nearly 5 percent of the total foodgrains available in the country were imported. This dependence worsened during the 1960's when two severe drought years led to a sharp increase in import of foodgrains. During 1966 India had to import more than 10 million tonnes of food grains as against a domestic production of 72 million tonnes. In the following year again, nearly twelve million tonnes had to be imported. On the average well over seven percent of the total availability of foodgrains during the 1960s had to be imported. Indian agriculture has progressed a long way from an era of frequent droughts and vulnerability to food shortages to becoming a significant exporter of agricultural commodities. This has been possible due to persistent efforts at harnessing the potential of land and water resources for agricultural purposes. Indian agriculture, which grew at the rate of about 1 percent per annum during the fifty years before independence, has grown at the rate of about 3 percent per annum in the post independence era. (Table - 1)

Agriculture – sub - sectors:

Indian agriculture broadly consists of four sub - sectors. Agriculture proper including all food - crops oilseeds, fiber, plantation crops, fruits and vegetables is the largest accounting for nearly 70 percent of the agriculture sector as a whole. The rapid growth in this sub - sectorthrough exploitation of wastelands, fallows, spread of irrigation and adoption of production enhancing technologies was critical in transforming India from a country vulnerable to food shortages to one of exportable surplus. Although this sub - sector has made impressive progress its share in the sector as a whole has declined from 78 percent in 1960 - 61 to less than 70 percent by early 90s.

Correspondingly the share of livestock sector has increased considerably. The livestock industry has grown from Rs.15 billion in early 1960s to Rs.100 billion by 1980 - 81 and Rs.672 billion by 1993 - 94. In nominal terms the sector grew at almost 15 percent per annum during 1980s. Milk production, which was almost stagnant for two decades ending 1970, grew by over 5 percent per annum in the 80s. Similarly, production of eggs increased at the rate of about 6.5 percent during the same period. As a result the share of livestock increased from about 17 percent till early 80s to 25 percent by 1993 - 94.

Though it plays relatively a minor role within the sector as a whole, fishing sub - sector activities have been on the rise. The sub - sector has grown from only Rs.3 billion in 1970 - 71 to nearly Rs.90 billion in 1993 - 94. The growth was particularly rapid in 70s and 80s. Value added increased at over 5 percent per annum during this period.

In real terms forestry and logging activities have been on the decline since mid seventies. As of 1993 - 94, the size of the industry in terms of value of output was 103 billion.

Over the past three decades, the country has successfully transformed itself from a food deficit economy to one which is essentially self sufficient in availability of foodgrains and other essential commodities, albeit only at the prevailing level of effective demand.

Regional Rural Banks were established under the provisions of an Ordinance passed on September 1975 and the RRB Act.1976 to provide sufficient banking and credit facility for agriculture and other rural sectors. These were set up on the recommendations of The M. Narasimham Working Group [1] during the tenure of Indira Gandhi's government with a view to include rural areas into economic mainstream since that time about 70% of the Indian Population was of Rural Orientation. The development process of RRBs started on 2 October 1975 with the forming of the first RRB, the Prathama Bank with authorised capital of Rs.5 crore at its starting. Also on 2 October 1976 five regional rural banks were set up with a total authorised capital Rs.100 crore ($10 Million) which later augmented to 500 crore ($50 Million). The Regional Rural Bank were owned by the Central Government, the State Government and the Sponsor Bank (There were five commercial banks, Punjab National Bank, State Bank of India, Syndicate Bank, United Bank of India and United Commercial Bank, which sponsored the regional rural banks) who held shares in the ratios as follows Central Government - 50%, State Government - 15% and Sponsor Banks - 35 [2]%. . Earlier, Reserve Bank of India had laid down ceilings on the rate of interest to be charged by these RRBs.

Gramin Bhandaran Yojana was launched on 31st March 2007. Creation of scientific storage capacity with allied facilities in rural areas to meet the requirements of farmers for storing farm produce, processed farm produce and agricultural inputs. Improve their marketability through promotion of grading, standardization and quality control of agricultural produce.

Percentage Share of Different Sectors in GDP at Cost (At Constant 2004 - 05 Prices) (TABLE - 1)

Sector	1950 - 51	1990 - 91	2010 - 11
Agriculture and Allied Activities	56.1	33.3	16.8
Industry	14.4	24.1	25.6
Services	29.5	42.6	57.6
Total	100	100	100

Problems/ Challenges of the agricultural reforms, policies and programmes

A critical examination of the reforms/policies and their implementation over the years show that policy instability, policy inconsistency, lack of policy transparency, poor coordination of policies as well as poor implementation and mismanagement of policy instruments constitute major obstacles to the implementation and achievement of the goals and objectives of these policies.

Policy instability and lack of policy transparency are not unconnected with political instability and bad governance. At the federal and state levels, the then Ministers and Commissioners of Agriculture were changed several times on the average of one per two years. Several policy measures were initiated and changed without sufficiently waiting for policy effects or results. At one time or the other, agricultural production passed through periods of protection and unbridled opening up for competition. Also, it passed through era of “no government” and “less. These could all be attributed to poor coordination and Faulty implementation of policies as well as mismanagement of policy instruments.

Agriculture contributed 42% of India’s gross domestic product (GDP) in 2008 (National Bureau of Statistics). However, despite having grown at an annual rate of 6.8% from 2002 to 2006, 2.8% higher than the sectors annual growth between 1997 and 2001, food security remains a major concern due to the subsistence nature of the country’s agriculture.

Many of the strategies used to improve agricultural growth in the past have failed because the programmes and policies were not sufficiently based on in - depth studies and realistic pilot surveys. This could be attributed to lack of public participation in the design, formulation, implementation and evaluation of policies as well as limited implementation capacity within the sectoral ministries and a poor understanding of the details and specifics of polices by implementers.

The main factors that influenced the effectiveness of policies on agriculture include high demand for agricultural produce, availability of improved technology, efficient dissemination of information by the ADPs and value added leading to improved income. On the other hand, the common factors responsible for the ineffectiveness of policies and regulations, especially on the downstream segment of agriculture, include instability of the political climate, insecurity of investment, non - standardized product quality, non - competitive nature of agricultural products from the country in the export market due to high cost of production and lack of adequate processing facilities.

7. Conclusions and Recommendations

In conclusion, the effects of economic reforms on the agricultural sector can be said to be unsatisfactory in view of its minimal contributions to the sector. In order to stem the aforementioned identified problems and weaknesses of these agricultural policies/reforms in the context of their contributions to the agricultural sector, genuine democracy and good governance should be allowed to thrive in India. This will guarantee poverty reduction, sustainable livelihood and enhanced food security which will lead to a comprehensive agricultural development as well as the attainment of the Millennium Development Goals (MDGs) and sustainable development goals in India.

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