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# ROLE OF MODERN TECHNOLOGY ON GROWTH TRENDS IN INDIAN AGRICULURE

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***Abstract***

*Agriculture is the backbone of Indian economy because of its high share in employment and livelihood creation. The share of agriculture in the gross domestic product has registered a steady decline yet this sector provides direct employment to more than fifty percent of total workforce in the country and a large proportion of the population depends upon agro-based industries and trade of agriculture products. It is also an important source of raw material and demand for many industrial products, particularly fertilizers pesticides, agricultural implements and a variety of consumer goods contribute significantly to the exports. However, the growth of agriculture over a period of time remained lower than the growth in non-agriculture sectors. Information of the required quality always has the potential of improving efficiency in all spheres of agriculture. The emerging scenario of a deregulated agriculture, thanks to WTO, has brought in a greater 'need' and urgency to make it an integral part of decision making by Indian agricultural community. Modern Technology like Bio technology, precision agriculture technology, Information Technology (IT), Green revolution technology has a major role to play in all facets of Indian agriculture. In addition to facilitating farmers in improving the efficiency and productivity of agriculture and allied activities, the potential of IT lies in bringing about an overall qualitative improvement in life by providing timely and quality information inputs for decision making. This paper studies the performance of Modern technology in the development of Agriculture sector of India in the various forms.*

***Key words: Modern technology, Development of agriculture, National Government Policies, Information Technology, Modern machines, Productivity, Economic growth.***

## Introduction

**A**gricultural growth is critical for sustainable and inclusive economic growth in India, as the vast majority of the population depends on the agricultural sector for their livelihood. The human civilization began with agriculture. Our nomadic ancestors who depended on hunting and fishing for living slowly learnt to grow their own food. This metamorphosed the human society forever. Villages, towns and cities begin to flourish. This led man to advance in several branches of knowledge. Technology has played a big role in developing the agricultural industry. Today it is possible to grow crops in a desert by use of agricultural biotechnology. With this technology, plants have been engineered to survive in drought conditions. Through genetic engineering scientists have managed to introduce traits into existing genes with a goal of making crops resistant to droughts and pests. . The invention of this technology is being used in developing countries to grow cash crops like cotton, since this genetically engineered cotton plants are pest resistant, they grow better than the normal cotton plants hence yielding good results.

The lack of the agricultural technology in the developing countries, the food production cannot be sustainable, because the growing number of population and less food production will cause huger, vast starvation among the poor communities, as they remain food dependency, therefore this is cannot be overcome unless the under-developing countries have enough financial support for reaching the advanced agricultural technology; so they can sustain their agricultural production and relief their food aid dependency. Therefore the historic agricultural development that has been achieved for the last two centuries were discussed many different agricultural books.

The most important we can recall here is that the traditional or the shifting cultivation system into rotational fallow toward permanent cultivation; Green Revolution, Gene Technology. The poverty in the developing countries can be reducing through a proper agricultural modern technology. The proper agricultural modern technology is not only the machines but also biotechnology and other modern knowledge that are applicable to increase the agricultural productivity so as to reduce the poverty and starvation. The Green Revolution is very much a product of technological innovation in the international public domain where Western and Third World governments, public supported non-profit national and international agricultural research institutions, universities, multilateral aid agencies, and Western charitable organizations collectively worked together to increase agricultural productivity. Since the Green Revolution era, India has achieved impressive growth in agricultural production, boosting national food security and reducing poverty.

## Historical Growth Trends in Agriculture

Indian agriculture has witnessed wide variations in growth performance during a span of six decades after independence. The variability is particularly pronounced due to the subsistence nature of farming in India and the sector's heavy dependence on monsoon and other climatic parameters. In the initial years after the inception of planned development, it was the green revolution technologies that fired up growth in the sector for nearly three decades. The impact of green revolution tapered off gradually towards the later years of the last century. Economic reforms initiated in early nineties had a significant impact on agricultural sector, primarily due to the opening up of economy to external competition, liberalization of trade and deregulation of input and other sub-sectors. Analyzing the year-on-year growth in Agricultural GDP for the entire period is cumbersome and such growth figures are subject to sharp inter-year fluctuations that make it difficult to identify any structural breaks or secular acceleration/deceleration. In order to overcome this problem and to capture the effects of major changes in technologies and policies on the sector in various phases, an analysis based on decadal trend growth rates is attempted here. The GDP-Agriculture series was first smoothened by taking 2-year moving averages to remove the effects of abrupt weather variations and other shocks. Further, trend growth rates were estimated by fitting semi-log trend to the smoothened data. The series begins with 10-years period from 1950-51 to 1960-61 and is extended up to the latest decade ending with the year 2010-11. Five distinct phases of growth were identified and are outlined below:

**(i) Phase I**: Pre-green revolution Period (1950-51 to 1967-68)
**(ii) Phase II**: Early green revolution period (1968-69 to 1985-86)
**(iii) Phase III**: Period of wider dissemination (1986-87 to 1996-97)
**(iv) Phase IV**: Post-Reform Period (1997-98 to 2005-06)
**(v) Phase V**: Period of Recovery (2006-07 to 2009-10/2010-11)

The pre-green revolution period (1950-51 to 1967-68) was characterized by steep decline in growth in GDP agriculture, with decadal growth rates found to plummet sharply from 2.78 per cent to 1.06 per cent between the period 1950-51 and 1967-68. The green revolution was kick started from the year 1966 and the effects of adoption of superior technology and institutional reforms were found to manifest from 1968-69 onwards. The subsequent period is classified as early green revolution period and a visible reversal of growth in GDP agriculture was observed. The decadal growth rate reached near 3 per cent by the decade ending with 1985-86. The period of wider dissemination of technology was characterized by sustained growth in the sector for over a decade peaking at the year 1996-97. The deceleration of growth was started from 1997-98 onwards and a clear indication of slumping of the agricultural sector was visible till the year 2005-06. This slump is widely perceived as an outcome of substantial diversion of resources away from agriculture to other sectors of the economy, a point which is elaborated in subsequent sections. However, a significant recovery of growth was observed in the last few years that has pushed the decadal growth rates above 3 per cent. In nutshell, the growth series clearly establish the sharp deceleration of the agricultural sector in the post-reforms period and an unambiguous turnaround in the last five years, which also happens to be the 11th five year plan period.

**Literature Review**
Growth in the agriculture sector may well be judged by the increase in agricultural production over time. A number of studies on the measurement of productivity have been carried out for India.

Evenson et al. (1999) have analysed the trends and sources of Total Factor Productivity (TFP) growth in India's agriculture, and have shown that the gains in productivity had contributed about 1.1 per cent per annum since 1956. The TFP and conventional inputs contribute roughly 2.3 per cent growth rate per annum in total crop output. Fan et al. (1999) have computed TFP for the agriculture for India and different states of India for the period 1970 to 1995. Five major crops (rice, wheat, sorghum, pearl millet and maize), 14 minor crops (barley, cotton, groundnut, other grains, other pulses, potato, rapeseed, mustard, sesame, sugar, tobacco, soybeans, jute, and sunflower), and 3 major livestock products (milk, meat, and chicken) were included in the measurement of output index. Five inputs (labour, land, fertilizer, tractors, and buffalos) were included in the measurement of input index. TFP for India grew at an average annual rate of 1.8 per cent. During the 1970s, TFP growth rate was 1.6, but it grew fast during the 1980s, at 2.5 per cent per annum. Since 1990, TFP growth in Indian agriculture has continued to grow but at a little slower rate (2.3% per annum), but still it is at a high level. Modern inputs such as HYV seed, fertilizer and irrigation were major contributors to TFP growth in Indian agriculture. Rapid adoption of new technologies and improved rural infrastructure induced productivity growth. The government spending on productivity-enhancing investments (especially agricultural research and extension), rural infrastructure (especially roads and education), and rural development targeted directly to the rural poor, all contribute to the growth in agricultural productivity.
Avila and Evenson (2004) have utilized FAO published data on cropland, pastureland, labour used in agriculture, fertilizer, seeds, tractors and combine harvesters and animal stocks for measuring the changes in TFP for crop production, livestock production and aggregate agricultural production for two periods, 1961-1980 and 1981-2001. Owing to the limitation of data on factor shares, the TFP growth rates seem to be on a higher side. Modern varieties of the Green Revolution increase in the

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education level of labour force, and increases in dietary energy have been reported as sources of TFP growth in the paper. Modern varieties contributed maximum (64%) to TFP growth, followed by Schooling (22 %) and nutrition (14 %).

Birthal et al. (1999) have analyzed the trend in TFP for the livestock sector in India. The livestock output grew at the rate of 2.6 per cent per year over the period 1950-51 to 1995-96. The input index increased by 1.8 per cent per year and the TFP grew at about 0.8 per cent, implying that technical change contributed about 30 per cent to the overall growth over the past 45 years. Period-wise results were more revealing. There was no TFP growth during the first period (1950-51 to 1970-71), implying no progress in productivity. The real swing started during the 1980s when the sector's output touched nearly 4 per cent and the TFP growth jumped to nearly 1.8 per cent, contributing 45 per cent to the total output growth. Avila and Evenson (2004) have also reported the accelerating growth in the livestock TFP, growing at the rate of 2.7 per cent per year during 1981-2001 period, contributing 69 per cent to the total livestock output growth.

Kumar et al. (2004) have analysed the trend in TFP for the aquaculture and marine sector of India. The TFP indices for aquaculture have revealed that the TFP indices grew by 4.4 per cent annually and accounted for two thirds of the output growth. The growth in aquaculture was mainly technology driven. The TFP growth of fish in the marine sector moved with 2.0 per cent annual growth and accounted for half of the output growth in the marine fisheries. Most studies have focused on the estimates of the effect of technological change for agriculture as a whole or total crop production. Owing to non-availability or under-estimate the TFP for the crop sector to the extent that rates of technical change differ across crops. Thus, the assessment of TFP change which is one of the most important factors influencing crop production ought to be studied for individual crops. With the availability of micro-level farm data in India, few crop-specific TFP studies have emerged since 1992 (Pinstrup et al., 1991; Sindhu and Byerlee, 1992; Kumar and Mruthyunjaya, 1992; Kumar and Rosegrant, 1994; Jha and Kumar, 1998; Kumar et al. 1998; Kumar, 2001; Joshi et al., 2003). The present analysis covered all the major crops grown in various states of India.

**Objectives of the Study**
In this background, the present study is framed on the basis of the following objectives,

1. To study the performance of Modern technology in Agriculture sector in the various forms.
2. To reveal the Government policies to implement Modern technology policy in Agriculture sector in India
3. To examine the development of Agriculture farming in the context of using Modern technology.
4. To know the impact of Modern technology in Agriculture sector.

**Methodology of the Study**
**Research Design**
The Data required for the study has been collected from secondary sources.
**Secondary data:** Secondary data for this study was collected from various Government of India Reports, RBI reports, Ministry of Agriculture reports, books, articles, journals, news papers, magazines, Economic Survey of India and website.

**Role of Modern Technology in Agriculture**
The history of agriculture is the story of man's progress in controlling for his own advantage the plants that make products useful to him by applying his knowledge. The country has also one of the largest agricultural areas in the world. The green revolution in India initiated as technology mission to increase agricultural productivity during 1960s. The food grain production no doubt has increased to comfortable level but there are serious limitations to the seed fertilizer technology. It has also not solved the problems like low yields and crop imbalances. The ecological dimensions of the new agricultural technology need to be carefully evaluated, thus a revolution in agricultural technology in the need of the times. Although agricultural productivity is vital but environmental protection is equally important. Also technology must be both affordable by, and geared to the needs of the poor and under nourished people. As a factor in farm and rural development, infusion of two apparently disparate technologies i.e. agricultural biotechnology and information technology is expected to catalyse programme changes.

Agricultural biotech and InfoTech together are helping to create new tools to attack the problem of rural poverty, generate employment of farm productivity and production, improvement quality and explore marketing and income generating opportunities in newer days. However, the technological changes in Indian agriculture started in 1960s when access to modern inputs, especially high yielding variety of seeds, fertilizers, mechanization, credit and marketing facilities improved. The central government also introduced intensive area development programme in 1960. New yielding varieties of wheat developed in Mexico and the rice developed in Philippines were brought to India. In addition to HYV sees, chemicals, fertilizers and pesticides were also introduced and irrigation facilities improved and expanded. The widespread adoption of high yielding variety of wheat, Jawar maize increased their production. The machanisation of farm which introduced during the green revolution period is slowly making inroads ever since its inception in 1960s. But the pace of farm mechanization has been more spectacular in the states like Punjab, Haryana, and Western Uttar Pradesh. The most remarkable achievement of the new technologies is the substantial increase in the production and productivity of food grains. As a result to improvement in High yielding seeds varieties the wheat has registered six fold increase in the production and rice recorded nearly threefold increase. Consequently the country is self sufficient in food grains. But there is still need to improve the quality of seeds, irrigation technology, food grain storage technology etc.

**Modern Biotechnology**

Modern biotechnology has offered opportunities to produce more nutritious and better tasting foods, higher crop yields and plants that are naturally protected from disease and insects. Modern biotechnology allows for the transfer of only one or a few desirable genes, thereby permitting scientists to develop crops with specific beneficial traits and reduce undesirable traits. Benefits can also be seen in the environment, where insect-protected biotech crops reduce the need for chemical pesticide use. Insect-protected crops allow for less potential exposure of farmers and groundwater to chemical residues, while providing farmers with season-long control. Also by reducing the need for pest control, impacts and resources spent on the land are less, thereby preserving the topsoil. Governments also rely on scientific research because they are responsible for setting health and safety standards regarding new developments. National governments and international organizations support food biotechnology as a means to avoid global food shortages. Many policy making bodies are also trying to balance support of the food biotechnology industry with public calls for their regulation. Such regulations are necessary to protect public health and safety, to promote international trade, conserve natural resources, and account for ethical issues.

**Precision Agriculture Technology**

Today, technological progress in communication, along with the information revolution made possible the revival of such a concept, as well as its applicability on a larger scale. Precision farming popular in developed countries, the widespread use of IT to make a direct contribution to agricultural productivity. Precision agricultural technologies, such as Global Positioning Systems (GPS), Geographic Information Systems (GIS), remote sensing, yield monitors, and guidance systems for variable rate application, made it possible to manage within-field variation on large scales. The GPS is one of the key elements of PA and is used to determine the agricultural operator's exact geographic position in the field for operations like field mapping, soil sampling, yield monitoring, or variable rate seed or nutrient application. Tailoring soil and crop management to match varying conditions (soil texture, moisture and nutrient status, seeding, etc.) within a field is not entirely new to farmers around the world. After the industrial revolution and the intensification of chemical fertilizer used on larger fields, the concept was temporally retired in industrial countries.

**Modern Technology for Vegetable Production**

The Institute has developed improved technology for vegetable production like low-cost polyhouse for raising off-season nursery, low-cost polyhouse cultivation technology for high-value vegetable crops, easy and economical hybrid seed production technology in important cucurbitaceae vegetables, onion production technology in *kharif* season, cauliflower cultivation in different seasons, cultivation of unusual exotic vegetables etc. Growth of the seed industry in the country has been possible mainly due to the availability of high quality breeder seed of more than 160 varieties of field and vegetable crops developed by IARI.

**Information Technology**

Information Technology (IT) to improve decision making in agriculture for long has been viewed as having great potential. IT is connected to the global world and the dynamic is changing our life style and social consciousness. In all phases of agriculture, industry, information technology management and business is essential for success. Agriculture has also been greatly influenced by IT. Information technology quickly and agricultural society is becoming more and more visible. IT information we communicate to people how we compute information and how we use the information refers to. People must have a computer and information technology. Part of a person, the process of assembling, and the agricultural industry must have the ability to manipulate information to make informed decisions.

In the agriculture context, decisions which will have a positive impact on related activities are conducted. Satellite technology, geographic information systems, remote sensing, using the techniques of agronomy and soil science is to increase agricultural production. Including large tracts of land where this approach is capital intensive and useful. As a result, it is more suitable for the cultivation taken on corporate lines. Significant indirect benefits of IT in the power of the Indian

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farmer, and remains to be exploited. Indian farmers urgently take the necessary decisions in a timely and reliable source of information inputs. Currently, farmers are slow and unreliable; trickling down from the traditional sources of inputs depends on the decision. Faced by Indian farmers to remain competitive in this changing environment is not only useful, but not required, making information.

The GIS is a software application that is designed to provide the tools to manipulate and display spatial data (Blackmore). It enables the farm operator to computerize maps, display and analyze diverse types of spatial data (soil types, ponds, fences, etc), land topography, or spatial variability of soil characteristics (N, P, K, pH, compaction, etc). Finally, sensing technologies can be used to obtain various layers of information about soil and crop conditions. These technologies allow detection and/or characterization of an object, series of objects, or the landscape without having the sensor in physical contact (Viacheslav et al.). Remote sensing uses, aerial or satellite imaging to sense crop vegetation and identify crop stresses and injuries or pest infestation. As an application of the new information technology adapted to agriculture, the essence of this technology is based upon the availability of data and the use of this data in the decision-making process (Lowenberg-DeBoer, 1997a). Data collected from soil sampling, yield monitoring, crop scouting, remote sensing, and satellite imaging are used to create maps. For example, yield map data can reveal a low yielding area. Remote sensing imaging techniques can highlight crop stress, disease and other field or crop characteristics. Many of these maps can be overlaid to look at interactions between yield and topography or yield and soil N content for example. It is the specific ability to process multiple layers of spatial data (yield maps, soil maps, or topography maps) that makes PA a powerful management and decision tool. The availability of historical data combined with multiple layers of information for a farmer engaged in PA improves the quality of inputs recommendations and management decisions. The effectiveness of the decision making however, will depend on a quick and accurate analysis of temporal and spatial data. In this context, precision farming technologies are widely known to assist growers in making informed decisions. By helping in making informed management decisions, PA could be used by producers as an effective management and risk management tool.

**Irrigation Technology**

A breakthrough in increasing irrigation efficiency was achieved through techniques developed at IARI. The Institute has developed and popularized the High Density Polyethylene (HDPE) pipe-based sprinkler unit. The drip irrigation system developed and popularized by the Institute is contributing significant increases in the area under fruits and vegetables and their production every year. The Institute has designed a prefabricated concrete lining technology suitable for several irrigation projects for the sandy and sandy loam areas of northern India. This technology has the potential to save 5 million ha-m of surface water, which will irrigate 10 m ha of additional crop area and increase food grain production by 10m t annually in the country.

The initial increase in production was centred on the irrigated areas of the Indian states of Punjab, Haryana and Western Uttar Pradesh. With both the farmers and the government officials focusing on farm productivity and knowledge transfer, India's total food grains production soared. A hectare of Indian wheat farms that produced an average of 0.8 tons in 1948 produced 4.7 tons of wheat in 1975 from the same land. Such rapid growths in farm productivity enabled India to become self-sufficient by the 1970s. It also empowered the smallholder farmers to seek further means to increase food staples produced per hectare. By 2015, Indian farms were adopting wheat varieties capable of yielding 6.456 tons of wheat per hectare. This High yield of wheat only after adoption of scientific farming techniques by Agricultural Technology Management Scheme (ATMA) of department of agriculture, which helped the farmers learn farming innovations.

**Green Revolution Technology**

With agricultural policy success in wheat, India's Green Revolution technology spread to rice. However, since irrigation infrastructure was very poor, Indian farmer innovated with tube-wells, to harvest ground water. When gains from the new technology reached their limits in the states of initial adoption, the technology spread in the 1970s and 1980s to the states of eastern India-Bihar, Orissa and West Bengal. The lasting benefits of the improved seeds and new technology extended principally to the irrigated areas which account for about one-third of the harvested crop area. In the 1980s, Indian agriculture policy shifted to "evolution of a production pattern in line with the demand pattern" leading to a shift in emphasis to other agricultural commodities like oilseed, fruit and vegetables. Farmers began adopting improved methods and technologies in dairying, fisheries and livestock, and meeting the diversified food needs of India's growing population. As with Rice, the lasting benefits of improved seeds and improved farming technologies now largely depend on whether India develops infrastructure such as irrigation network, flood control systems, reliable electricity production capacity, all season rural and urban highways, cold storage to prevent food spoilage, modern retail, and competitive buyers of produce from the Indian farmer. This is increasingly the focus of Indian agriculture policy.

**Technology and the Increasing Role of the Corporate Sector**

After the green revolution in wheat and rice during the late 1960s and early 1970s, which was driven largely by the government, if there is any other crop that has registered a phenomenal growth during the last 6-7 years, it is cotton. Cotton production in India has doubled, from 15.8 million bales in 2001-02 to 31.5 million bales in 2007-08, and is expected to hit 32.2 million bales in 2008-09 (Cotton Advisory Board, 2009) the result of introducing Bt (Bacillus thuringiensis) technology in cotton. This new technology was formally released in 2002, although it had sneaked into farmers' fields in Gujarat somewhat surreptitiously in 2001. The farmers in Gujarat and elsewhere in India, who used Bt seeds of cotton, found dramatic turnaround in their yields, almost doubling over the period 2000-01 to 2008-09 (see figure 2). Not only they gained in terms of yields, but there was a substantial reduction in the use of pesticides, which augmented their net incomes. This increased their profitability leading to almost a scramble for new technology, which spread like wild fire. Within seven years, more than 80% of the cotton area has come under Bt the highest ever export of cotton from India during the last sixty years. This was achieved when the global economy was in upswing and textile sector was doing very well, and even China started importing raw cotton from India for its textile and garment sector.

The next crop to experience Bt technology maybe eggplants (brinjals). Monsanto/ Mahyco's Bt brinjal has gone through several hops, ranging from laboratory stage, to green house trials, to confined field trials, to multi-location research trials, to large scale field trials, and now is in seed production stage. There are several other biotech crops that are food crops such as cabbage, cauliflower, okra, potato, tomato, groundnuts, corn and even rice. If India succeeds in having more drought tolerant rice and maize, there could be major gains in staple crops, and hence food security of a large mass of people can be ensured. In any case, the stage seems to be getting ready for the next technological infusion in Indian agriculture, and much of this has been triggered by the private sector, although lately Government of India is also increasing its investments in biotechnology, though nowhere near what China is planning in this field.

**Technology on Modern Machines in Agriculture**

The machines are elements that are used to direct the action of forces based energy work, for his part in the agricultural, motor mechanisms used in this work lighten the production and improve farming techniques. Among the most widely used agricultural machines working in the fields mentioned:

- **Tractor:** is a very useful agricultural machine, with wheels or designed to move easily on the ground and pulling power enabling successful agricultural work, even in flooded fields. It has two brake pedals and is preparing to pull sledges. There are two types of tractors: the track of stability and strength, and wheels, able to travel to by road, has a higher speed than the track.
- **Walking Tractor:** agricultural machine is a single axle and is operated by handles, have median motor power and strength led to horticultural and ornamental work, can work in strong fields, but is preferably used in construction of gardens.
- **Combine**: or mower is a powerful engine agricultural machine, comb cutter to cut the plants mature grain and a long rake that goes before the machine and rotates about a horizontal axis.
- **Plough:** agricultural equipment is designed to open furrows in the earth consists of a blade, fence, plough, bead, bed, wheel and handlebar, which serve to cut and level the land, hold parts of the plough, set shot and to serve as handle.
- **Drag:** agricultural equipment is designed to break up the parts and parcels of land that have been removed by the plough, are composed of a frame, which can be made of wood and metal teeth and the latch that attaches to tractor.
- **sprayer:** it is a farm equipment designed to spray, is composed of a liquid tank, pressure pump, cap, mouth, tank and pressure valve, belts, hose, faucet and nozzle where the liquid to spray out, is insecticide, fungicide or herbicide. The hand sprayer is placed in the back of the sprayer and this has placed in the mouth and nose a special mask to prevent strong odours dismissed by the substance that expels the sprayer will harm.
- **Tillage planter:** is a machine to place the seeds on the seedbed without prior tillage.
- **Fertilizer:** agricultural equipment is designed to distribute fertilizer is composed of three main parts: the hopper or storage of fertilizer, the drop tube of fertilizer and fertilizer distributor.
- **Packing:** agricultural equipment is designed for packaging or packing cereal straw or other baled forage grasses (also called bales or alpacas).

**Conclusion and Suggestions**

This paper evaluates performance and progress of Indian Agriculture since Independence. In addition, this paper also analyzes sources of agricultural growth and determinants of agricultural production through Modern technology. Technology has played a big role in developing the agricultural industry. Agricultural Modern technology innovations aimed directly

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towards consumers, sometimes collectively referred to as output traits, have been a longer time in development. As the technology advances and we learn more about the genes and biochemical pathways that control those attributes that could offer more direct consumer benefits, the long-awaited promise of genetically engineered food with more direct consumer benefits moves closer to reality. Biotechnology could help solve many problems limiting crops and livestock production in developing countries. The development of genetically modified foods and other agricultural Modern technology products has generated significant in Agricultural development.

Modern Technology is expanding rapidly and touches almost all areas of human activity. The Study identifies ways to use Modern Technologies actively and effectively to uplift the Indian agriculture. It is clear that the importance of Modern Technologies is not the technology as such, but it's enabling function in access to knowledge, information and communications. It is increasingly becoming the important elements in today's economic and social interaction. In the span of one generation, Modern Technology has brought about a lot of changes globally. The study therefore suggests that technological development is an urgent requirement for Indian agriculture.

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