ABSTRACT

Agriculture covers something more than the mere operation on a farm. Today, marketing, processing, distributions of agricultural products etc. all are accepted as a part of modern agriculture. Agriculture being a biological activity is totally influenced by nature. The vagaries of weather like erratic rainfall, temperature etc blunt the efforts of farmers to derive expected results. Given the influence of vagaries of nature, the farmer has hardly any control over results of his efforts. Consider the basic premise of biotechnology: the least expensive and most renewable source of energy on Earth is the sun and the most abundant and predictable mechanism to convert the energy from the sun to useable energy is photosynthesis -- biotechnology has enabled methods to direct abundant natural energy to new more efficient or unique food products. In this paper author would like to compare traditional and modern agriculture.

Keywords: Agriculture; Marketing; Biological; Biotechnology; Photosynthesis

INTRODUCTION

Agriculture, for decades, had been associated with the production of basic food crops. Agriculture in its widest sense is the cultivation and / or production of crop plants or live stock products. Agriculture and farming were synonymous. At present agriculture besides farming includes forestry, fruit cultivation, dairy, poultry etc. Agriculture covers something more than the mere operation on a farm. Today, marketing, processing, distributions of agricultural products etc. all are accepted as a part of modern agriculture. Agriculture being a biological activity is totally influenced by nature. The vagaries of weather like erratic rainfall, temperature etc blunt the efforts of farmers to derive expected results. Given the influence of vagaries of nature, the farmer has hardly any control over results of his efforts. The production of agricultural commodities and their varieties are limited by the specificity of the season. Paddy is grown in early kharif, late kharif, and rabi seasons. Wheat is confined to rabi season only. Ground nut is cultivated both in kharif and rabi. Green gram is grown in kharif and rabi. Fruits are seasonal in nature and so also certain vegetables. Production of agricultural commodities is not uniform throughout the year. The storage period of farm commodities ranges from few hours as in the case of flowers to few days in respect of fruits and vegetables and few years for cereals, pulses, oilseeds etc. These characteristics of the farm products results in price variations in the same day, in the same season and among the different seasons in a year. To produce agricultural products, the farmer has to use a number of inputs such as seeds, fertilizers, pesticides, labour, machinery, irrigation etc. Underutilization of resources or misutilization of resources may result in high cost of production and thus lower the efficiency of agriculture.

In the last ten decades, agriculture means only producing goods or commodities with human efforts. Human beings prepare the land, sowing the seed, manures and fertilizer application, weeding, irrigation, threshing, winnowing and other activities. They produce with their own efforts either for
their own use or for selling in local markets. Traditional Agriculture comprises of families with older couples and children living on farms. Although over-represented in having children aged from 5 to 14, the most common family structure in Traditional Agriculture is for married couples without children. Many households provide accommodation for farm labourers and seasonal workers. Although mid-range household incomes are common, Traditional Agriculture are also likely to report a nil or negative income, and females are likely to perform domestic duties at home. Traditional Agriculture includes the property owners along with farm workers and labourers. The owners classify themselves as managers or small business owners. They have business and public liability insurance to cover their large investments and valuable assets, and self-managed superannuation is common. While they find it difficult to get to many forms of entertainment, Traditional Agriculture enjoy going to the racetrack and betting through bookmakers. Other pastimes include gardening and dressmaking. They prefer traditional meals at home as opposed to going out to restaurants. They are generally light spenders however have high grocery bills. People found living in this segment are generally not fashion conscious. Although largely limited to dial-up Internet, they do like to get onto the Internet a few times every month, where they often check weather conditions. They prefer to read regional newspapers and tabloids, and magazines about gardening and country lifestyle, as well as magazines such as their life. They tend to watch television programs targeted to country viewers, such as Landline, as well as shows about gardening, current affairs and mysteries. When listening to the radio, they tend to listen to ABC Radio National. These households will generally read addressed mail from retailers and political parties, in the form of a magazine and catalogue.

OBJECTIVES OF THE STUDY
1. To understand the importance of technology in agriculture.
2. To compare traditional agriculture and modern agriculture.

Traditional Agriculture

Traditional agriculture means production of agricultural commodities for self sufficiency and not for sale. In traditional agriculture there is no any technologies are used, mainly depend on human beings or animals for production.

Advantages of Traditional Agriculture

- Use of production for self sufficiency as farmers do not export their crops to markets, if they do, it is in small quantities.
- A gradual degradation of natural resources.
- Inefficiency of rural markets and lack of access to crop price information
- The absence of machinery, most chores are performed by hand or by animals, increasing the probability of low productivity
- Farm ownership, organization, and production is organized at tribe or familial level i.e., work is performed by multiple parties, by women in particular.
- Use of poly-culture, to enable the production of various products and various types of crops to meet the needs of the family or group.
- Extensive but not intensive agriculture
- Lack of modern technical and practical knowledge on the part of farmers.

LIMITATIONS OF TRADITIONAL AGRICULTURE
1. Take long time for harvest the products
2. The products produced are of low quality
3. Plants may not appear healthy due to the use of pesticides.

4. They mainly rely on rainfall to water the plants, so draught was a common problem

Modern Agriculture

Modern agriculture is a term used to describe the wide majority of production practices employed by America’s farmers. More than 90% of farmers today embrace using the most innovative practices and growing techniques to produce enough food, fuel and fiber for a growing world, while minimizing their environmental footprint at the same time. The term “modern agriculture” depicts their commitment to innovation, stewardship and meeting the global food challenge all at once – there is nothing conventional about that. In light of this challenge, modern agriculture enables farmers to utilize new innovations, research and scientific advancements to produce safe, sustainable and affordable food. Intensive scientific research and robust investment in modern agriculture during the past 50 years has helped farmers double food production while essentially freezing the footprint of total cultivated farmland. This allows for responsible food production: new technologies help farmers use precise applications and fewer inputs, leading to increased productivity and higher yields, and creates an affordable supply of nutritious food and produce for those who need it most.

Classifications of Modern Agriculture

Modern agriculture may be classified into:

1. Agribusiness: in agriculture, agribusiness means the business of agricultural production. It includes crop production, seed supply, agrichemicals, farm machinery, distribution, processing, marketing and retail sales. Examples of agribusiness include seed and agrichemical producers Dow AgroSciences, DuPont, Monsanto Company.

2. Industrial Agriculture: Industrial agriculture treats the farm as a factory, with "inputs" (pesticides, fertilizers) and "outputs" (crops). The end-objective is increasing yields while controlling costs — usually by exploiting economies of scale i.e. making a lot of one thing, or "monocropping", and by replacing solar energy and manual labor with machines and petro-chemicals like pesticides and fertilizers.

3. Intensive farming: intensive farming means agricultural production system and the high use of inputs such as capital, labour or heavy use of pesticides and fertilizers relative to the land area. The methods of modern intensive farming include innovations in agricultural machinery and farming methods.

4. Organic farming: Organic farming is a form of agriculture that relies on techniques such as crop rotation, green manure, compost and biological pest control. Organic farming uses fertilizers and pesticides which include herbicides, insecticides and fungicides but excludes or strictly limits the use of manufactured fertilizers, pesticides plant growth regulators such as hormones etc.

5. Sustainable agriculture: Sustainable agriculture is the act of farming using principles of ecology the study of relationships between organisms and their environment. It Enhance environmental quality and the natural resource base upon which the agricultural economy depends.

Advantages of Modern Agriculture

- Modern agriculture was very successful in meeting a growing demand for food by the world's population.
- Yields of primary crops such as rice and wheat increased dramatically
- The price of food declined
- The rate of increase in crop yields generally kept pace with population growth
The number of people who consistently go hungry was slightly reduced
Large numbers of irrigation systems are constructed.
Developed new crop varieties.

Disadvantages of Modern Agriculture

- Excessive reliance on monoculture farming and agro industrial inputs, such as capital-intensive technology, pesticides, and chemical fertilizers, has negatively impacted the environment and rural society.
- A number of ecological diseases have been associated with the intensification of food production.
- Chemical fertilizers can also become air pollutants, and have recently been implicated in the destruction of the ozone layer and in global warming.
- Their excessive use has also been linked to the acidification/salinization of soils and to a higher incidence of insect pests and diseases through mediation of negative nutritional changes in crop plants.
- Use of fertilizers can alter the biology of rivers and lakes.

FINDINGS OF THE STUDY

- Technology has/will increase agricultural productivity.
- Technology development has/has been/will/will be sustainable.
- Technology is, therefore, the basis for Sustainable Agriculture.

CONCLUSION

Food is subject to the economic principles of scarcity. Unlike the artificial value of scarce items such as gold, an adequate supply of food is paramount to population survival and skill diversification, making agriculture a first level priority. Technology has enabled human civilization to leave the "Hunter / Gatherer" paradigm of existence and concentrate labor and land to the sole purpose of food production on an ever-increasing scale. These early applications of technology have not only increased food production in real terms, but have dramatically reduced the number of individuals directly involved in food production/processing -- enabling the diversification of society to address social issues not directly related to "survival", but generally seen to increase the quality of life. To a large extent, the rate of technology development and the degree of innovation in future technologies will greatly influence the stability, and certainly the productivity, of agriculture Technology, in the classical sense, includes the development and use of nutrients, pest control products, crop cultivars, and farm equipment; but it also includes the vision of genetically modified crops providing greater nutritional efficiency (more calories per yield, or more yield), manipulation of natural pest control agents, and use of farm management techniques that focus on whole-farm productivity over time, not just annual production per hectare. Consider the basic premise of biotechnology: the least expensive and most renewable source of energy on Earth is the sun and the most abundant and predictable mechanism to convert the energy from the sun to useable energy is photosynthesis -- biotechnology has enabled methods to direct abundant natural energy to new more efficient or unique food products.

REFERENCES


