



A Comparative study of Modern and Traditional Agricultural System in India

Dr.D.Princy

Assistant Professor, Department of Business Economics, Ethiraj College for Women.

ABSTRACT

Indian agriculture is labour intensive, mostly subsistence farming, nearly 60% of its population is dependent on farming and most farms are rainfed. On the other hand, American farming is capital intensive, mostly commercial farming less than 3% of its population is dependent on farming and most farms are irrigated. Both countries give subsidies to their farmers but, US subsidies are more than India's, hence the Doha round dispute. For a number of obvious reasons, the pace and pattern of recent economic development in China and India invite a systematic comparison. It is always interesting to measure and compare the progress of these two great neighbours, comprising a large fraction of the world's poorest people, both having recently launched massive programmes of expansion and development after centuries of foreign domination, chaos and stagnation. Over and above that, the significant differences in the institutions and policies, the two countries have chosen to adopt for attaining broadly similar economic goals. This is particularly true with respect to agriculture. Although, in both countries the major emphasis is on rapid industrialization because of the predominantly agrarian nature of the economies, the agricultural sector provides the basic foundation for industrial expansion with supplies of food, raw materials, and labour, with markets for industrial goods and with foreign exchange earned through exports of primary products. In both countries the pace of industrial advance is severely constrained by the vagaries of agricultural production and dependence on agriculture as a direct source of income is also very substantial, even after all these years of industrialization. One should note here that the prices at which output is valued being more favourable to industry in China than in India, the relative share of modern industry in national income is larger in China. Both have traditionally been agrarian economies and well over half of their billion-plus people continue to depend on land for their livelihood. Given their large populations and histories of famine, India and China also share similar concerns on issues such as food security. However, while India's agricultural sector is growing by about 2.5 per cent; China's has been steadily growing at between 4 and 5 per cent over the last 15 years. By 2005, China had in fact emerged as the world's third largest food donor. China with lesser cultivable land produces double the food grains, at 415 million tons per year compared with India's 208 million tons per year. To conclude, in agriculture our yields per acre are well below the international norms. India could be a giant exporter of food, only if we could put our 'house in order' to near world class standards. China with lesser cultivable land produces double the food grains than us. God has been very kind to India with a lot of sunshine, rain, rivers, lakes, coastline and good hard working citizens. The Governance in India have not done enough to show the results that it is capable of achieving rate as the No.1 country in the world for potential vs performance. Indians score high marks on performance outside India. This is because the Governance is better outside. In countries where the Governance and Administration is poor, the performance of its citizens is also low.

Keywords: Indian Agriculture, Potential vs Performance, Administration, Industrialization

INTRODUCTION

Farming is an integral part of the Indian economy. With technological advancements and improvements in various structures, there has been a gone debate between traditional approaches to farming

and modern approaches to farming which leaves the farmers and consumers stuck. Agriculture is the industry that provides food, which is the most basic human necessity. Agriculture was closely associated with civilizations all over the world, and international economies were predominantly agricultural during the post-industrialization period. Although traditional agriculture is still practiced in some regions of the world, modernization has changed the face of agriculture. Traditional agriculture relies on outdated information, outdated tools, and organic fertilizers, whereas contemporary agriculture relies on technologically improved tools and machinery. Traditional farming practices and expertise become outdated as globalization and modernization forces increase. Due to these pressures, the food system has shifted from one dependent on millions of farmers to one dominated by a few agribusinesses. Production, capital gain, input intensity, and crop consistency are all important aspects of modern agricultural methods. Traditional agricultural practices, on the other hand, place a premium on localization, biodiversity, shared genetic resources, and a cultural appreciation for a diverse range of crops. Changes in agriculture from traditional to contemporary will have a substantial impact on the biodiversity of cultivated and wild plants. Agriculture must stay resilient in the face of global environmental concerns to sustain and expand food security. Agricultural resilience requires cultural and biological diversity; if one method or crop fails, there are many others to compensate. If the urge to modernize is minimized and the number of conservation projects continues to rise, cultural variety can help to preserve biodiversity.

The Indian civilization has always been agrarian. Right from the Vedic Saraswati civilization to the modern times, farmers have cultivated this rich land and cherished their bond with Mother Nature. It is no wonder then that India is a land of abundance and wisdom. Agriculture farming in India is a century-old activity, and is currently the highest contributor to the GDP of India. Agriculture remains the largest contributor to the country's GDP and farmers constitute 58% of India's population. It means much of India remains untouched by the mindlessness of consumerism. Under its Agriculture Export Policy, the Government of India aims to increase agricultural export by over \$60 billion by 2022. This means, the agricultural activity in India will be doubling. If we describe the farmers of India, they constitute 58% of the country's population. Agriculture is the primary source of income for the mentioned percentage of the population. The Indian food industry also aims to grow by leaps and bounds. Already, the Indian food market stands as the 6th-largest globally with food processing covering over 32% of the country's food industry. Thus, we see that India is enriched by both traditional and commercial forms of agriculture.

OBJECTIVES

- ❖ To study the various techniques and methods used in Traditional and Modern Agricultural Practices in India.
- ❖ To study the difference and problems faced by Traditional and Modern Agriculture in India.

REVIEW OF LITERATURE

- **Badgley et al. (2007)** initially attempted to analyze the yield comparison between organic and modern agriculture practices at the global scale and documented a large output of organic practices over conventional practices. This study was adequately performed on 34 crop species covering 62 sites and 316 case studies. Another study revealed that organic-based agriculture had a 25% lower average yield than modern practices. When the yield comparison was made with best practices and high performing varieties, it exhibited that the production was nearly 13% lower than modern practices.
- **Sofia et al (2006)** Traditional agriculture is nearly 4000 years old. Indian agriculture comprises a mosaic of diverse TAPs which is the result of its various agro-climatic conditions, soil type and vegetation resulting in heterogamous farming. Apart from ecological adaptation, the source of economy, survival capability, religious and cultural aspect also plays a significant role in traditional crop diversification. Agriculture is the cornerstone of the Indian economy, which contributed about 50% workforce and 17–18% of gross domestic product (GDP) as reported in the economic survey report of India for the year 2017–2018. Presently, two-thirds of Indian agriculture is rainfed which produces almost half of the total production of the country. This rainfed farming has remained unaffected to the detrimental effect of the green revolution. Indian agriculture is based on the monsoon cycle where variable climatic conditions make it more diverse in the different parts of the country.

AGRICULTURAL METHODS OF THE INDIAN FARMER

Agriculture farming in India is the oldest activity and has been the major livelihood for farmers. Over the years, farming methods in India have changed, thanks to the technology invention making the lives of farmers easy. Socio-cultural practices, climatic conditions, and other aspects have also contributed to the innovation in Indian farming. Currently, both traditional farming methods in India and modern farming are practiced.

TRADITIONAL FARMING

Traditional farming is defined as a primitive way of farming that involves the use of labour-intensive, traditional knowledge, tools, natural resources, organic fertilizer, and old customs and cultural beliefs of the farmers.

➤ TRADITIONAL FARMING PRACTICES DEFORESTATION.

Deforestation is the process of cutting down trees for agricultural and productive activities. It is the process of removing a forest or a stand of trees from a piece of land to convert it into farms, pastures, or urban usage. Tropical rainforests have the highest concentration of deforestation. Slash and burn agriculture, commonly known as shifting cultivation, is a type of primitive subsistence agriculture. Crops are planted at predetermined intervals, frequently in between other plants, so that the crop can be staggered to provide sustenance throughout the year.

➤ DEPLETION OF THE NUTRIENT CONTENT OF THE SOIL.

Slash and burn farming depletes the organic matter in the soil and increases the nutrient content of the soil taken up by the crops in a short period. As a result, the farmers are forced to relocate their farming operations to a new location.

➤ AGROFORESTRY

Agroforestry blends agricultural and forestry themes. The idea behind this strategy is to grow trees that can give acceptable climatic conditions for the crops in their area. It controls the temperature, the amount of sunlight, and the wind. We profit from this method on our Cow Farm in Chennai since it prevents soil erosion and improves soil quality. This strategy provides a favourable microclimate for the crops, allowing them to produce more

➤ CROP ROTATION

Crop rotation is practiced for planting a variety of crops on the same land at different times of the year. This type of agriculture boosts the land's output. Without the use of herbicides or pesticides, we may increase our production.

➤ MIXED CROPPING

In such circumstances, mixed cropping is used. On farms, two or more crops are planted together. Row cropping, in which a single crop is cultivated in each row on the farm, is also an option for farmers.

➤ PRIMITIVE FARMING

One of the oldest techniques in India, primitive farming is practiced in small farms with traditional instruments like a hoe, digging sticks, etc. Farmers depend upon soil fertility, environmental conditions and other factors like heat for the harvest. This method is usually employed by those who use the output for their consumption. This technique is also called "Slash and Burn" farming where farmers burn the land once the crops have been harvested.

➤ SUBSISTENCE FARMING

Cultivation takes places across wide and larger land areas with two types of crops: wet and dry. Wet crops include paddy and dry crops grown are wheat, maize and pulses. This method demands extensive use of chemical fertilizers and different methods of irrigation.

➤ **COMMERCIAL FARMING**

This technique is a modern day farming method where the farmers use a variety of new-age tools for surplus profits. Insecticides and fertilizers are also used because the crops grown are spread across large patches of land. It contributes a great percentage to the country's GDP. While farmers in Haryana, Punjab and West Bengal practice commercial farming techniques, farmers of Orissa continue to prefer subsistence farming for large productions.

➤ **PLANTATION FARMING**

It is another subset of commercial farming. It makes use of both labour and technology to ensure the process is sustainable as plantations are spread across huge patches of land. It includes both agriculture and industry because of the nature of the crops grown.

MODERN FARMING

Modern farming methods refer to a type of agricultural production that involves a lot of money, manpower, and a lot of farm equipment like threshers, winnowing machines, and harvesters, as well as a lot of technology like selective breeding, insecticides, chemical fertilizers, and pesticides. Besides the above-mentioned farming techniques in India, there are other methods followed in different regions of the country. Much of these don't fall under traditional farming methods in India.

➤ **AEROPONICS SYSTEM**

Aeroponics is a method of growing plants without the use of soil in an air or mist environment. It is a subtype of hydroponics that works by suspending the plant root in the air. Farmers will have more control over the amount of water they consume if they utilize this strategy. Aeroponics is the process where plants are grown in the air or mist environment without the use of soil. It is the subset of hydroponics, and suspends the plant root in the air to work. Farmers, by using this method will have better control over the amount of water to use.

➤ **AQUAPONICS**

Aquaponics is a closed-loop system that relies majorly on the symbiotic relationship between aquaculture and agriculture for fertilization. This farming method combines conventional aquaculture with hydroponics.

➤ **HYDROPONICS**

The hydroponics method of farming uses less soil and does not require any form of soil. The process requires growing healthy plants without the use of solid media, employing nutrients such as a mineral-rich water solution. Hydroponic farming is a subset of hydroculture, and the nutrients employed in these systems come from a variety of places. Growing healthy plants without the inclusion of solid medium using nutrients including water solution which is mineral-rich. Hydroponic farming is the subset of hydroculture, and the nutrients used in hydroponic farming systems have different sources.

➤ **MONOCULTURE**

This approach requires the cultivation of a single crop in a specified farming region. In a country like India, however, the Monoculture farming approach isn't extensively used. Monoculture refers to indoor farming, such as the cultivation of therapeutic plants. Monoculture is a modern agricultural approach in which only one crop or plant is produced. In plain words, monoculture is a modern agriculture practice where a single crop or plant is grown.

➤ **MODERN FARMING LEADS TO SOIL EROSION**

Soil erosion is the removal of the top fertile layer of the soil. Modern farming leads to soil erosion as repeated deep ploughing is used to turn over the ground, and heavy rains can carry the top fertile soils leaving the ground unfit for cultivation.

➤ **MODERN FARMING EVOKES THE PRODUCTION OF FUELS**

Modern methods of farming use chemical fertilizers for the yields to grow which on the other hand leads to a rise in having fuels that cause greater damage to the environment.

➤ ANIMALS LIFE'S ARE AT STAKE

All animals are packed together indoors on most "modern" farms. Feeding them necessitates complex machines, while disease prevention necessitates constant treatment. The cruelty involved in today's farm animal management, breeding, growing, and murdering is utterly ugly and horrible.

MAJOR DIFFERENCES BETWEEN TRADITIONAL AND MODERN FARMING

TRADITIONAL FARMING	MODERN FARMING
Traditional farming is mainly based on labour-intensive.	Modern farming is entirely based on capital intensive.
Crop rotation, agroforestry, slash, and burn cultivation are some of the techniques which are practiced under traditional farming	Mono-cropping, and precision agriculture is some of the techniques practiced under modern farming.
The traditional method of farming is environment friendly as natural manure is used as fertilizers	Modern method of farming is not environment friendly as chemical fertilizers and pesticides are used.
Traditional farming takes a longer duration for a crop to yield as a result the rate of production is low	Modern farming is a fast method of farming as it yields the crop at a faster duration, as a result, the rate of production is high.
Under traditional farming, high inputs are required	Under modern farming low inputs are required.

CONCLUSION

Modern agriculture uses advanced technology, it is less labour intensive than traditional agriculture, and the yield quantity is larger because there is a focus on maximizing production and maintaining a consistent quality. Modern agriculture uses advanced technology, such as plant breeding techniques and pesticides. Seeds that are hybrids may be used and other gene editing techniques applied. Modern agriculture is less labour intensive than traditional agriculture because there is a greater reliance on machinery. This is in terms of both harvesting and growing the plants but also in cases where one is applying fertilizers and pesticides. Production is greater in modern agriculture than traditional agriculture. There is usually an emphasis on producing consistent products with modern agriculture also. For example, a tomato that grew in an atypical shape may be tossed out rather than brought to market. Note that product quality is often higher in traditional agriculture.

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