

The Study of Agriculture Research and Education

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ABSTRACT

The history of **agriculture in India** dates back to the Rigveda Today, India ranks second worldwide in farm output. Agriculture and allied sectors like forestry and fisheries accounted for 13.7% of the GDP (gross domestic product) in 2013 about 50% of the workforce. The economic contribution of agriculture to India's GDP is steadily declining with the country's broad-based economic growth. Still, agriculture is demographically the broadest economic sector and plays a significant role in the overall socio-economic fabric of India. India is the world's second or third largest producer of several dry fruits, agriculture-based textile raw materials, roots and tuber crops, pulses, farmed fish, eggs, coconut, sugarcane and numerous vegetables. India ranked in the world's five largest producers of over 80% of agricultural produce items, including many cash crops such as coffee and cotton, in 2010. India is one of the world's five largest producers of livestock and poultry meat, with one the fastest growth rates, as of 2011.

FARM EQUIPMENT

"Mahindra" is the world's largest selling tractor brand, by volume and India's No.1 tractor maker for more than three decades now. We are the only tractor company to have won the Deming Prize and Japan Quality Medal. Our high quality, tough and durable tractors and implements raise productivity in farms across all continents on earth. Through a string of global tie-ups, most notably with Jiangsu Yueda Group in China and India

HISTORY OF AGRICULTURE

Special programmes were undertaken to improve food and cash crops supply. The Grow More Food Campaign (1940s) and the Integrated Production Programme (1950s) focused on food and cash crops supply respectively. Five-year plans of India oriented towards agricultural development soon followed. Land reclamation, land development, mechanisation, electrification, use of chemicals fertilisers in particular, and development of agriculture oriented 'package approach' of taking a set of actions instead of promoting single aspect soon followed under government supervision. The many 'production revolutions' initiated from 1960s onwards included Green Revolution in India, Yellow Revolution (oilseed: 1986-1990), Operation Flood (dairy: 1970-1996), and Blue Revolution (fishing: 1973-2002) etc. Following the economic reforms of 1991, significant growth was registered in the agricultural sector, which was by now benefiting from the earlier reforms and the newer innovations of Agro-processing and Biotechnology.

AGRICULTURAL RESEACH

The **Indian Agricultural Research Institute (IARI)** commonly known as Pusa Institute is India's premier national Institute for agricultural research, education and extension. Situated in Delhi, it is financed and administered by the **Indian Council of Agricultural Research (ICAR)**. The IARI was responsible for the research leading to the "**Green Revolution in India**" of the 1970s

It will serve the cause of science and society with distinction through first rate research, generation of appropriate technologies and development of human resources. In fact, the Green Revolution was born in the fields of IARI and its graduates constitute the core of the quality human resource in India's agricultural research and education. The Institute has all along been adjusting and improving its policies, plans and programmes to effectively respond to the needs and opportunities of the nation. During the fifties, the advancement of scientific disciplines constituted the core programme and provided the base for its fast expansion in the 1960s and 1970s in all its three interactive areas, namely, research, education and extension. Besides basic research, applied and commodity research gained great importance resulting in the development of several popular high yielding varieties of almost all major crops and their associated management technologies, which brought about an unprecedented increase in the national food and agricultural production.

The campus is spread over 500 hectares (5.0 km²), 8 km west of New Delhi Railway Station. This was initially outside Delhi, but over the decades the city has grown much beyond the campus. **Indian Agricultural Statistics Research Institute** is affiliated with and is located in the campus of the Indian Agricultural Research Institute.

1. OBJECTIVES

- To study the agriculture research activity in India.
- To study the modern agriculture activities India.
- To study the future development of agriculture activities in India

THE AGRICULTURE RESEARCH ACTIVITY IN INDIA

In the years since its independence, India has made immense progress towards food security. Indian population has tripled, and food-grain production more than quadrupled. There has been a substantial increase in available food-grain per capita. Before the mid-1960s India relied on imports and food aid to meet domestic requirements. However, two years of severe drought in 1965 and 1966 convinced India to reform its agricultural policy and that they could not rely on foreign aid and imports for food security. India adopted significant policy reforms focused on the goal of food grain self-sufficiency. This ushered in India's **Green Revolution**. It began with the decision to adopt superior yielding, disease resistant wheat varieties in combination with better farming knowledge to improve productivity. The state of Punjab led India's green revolution and earned the distinction of being the country's bread basket.

The initial increase in production was centred on the irrigated areas of the states of Punjab, Haryana and western Uttar Pradesh. With the farmers and the government officials

focusing on farm productivity and knowledge transfer, India's total food grain production soared. A hectare of Indian wheat farm that produced an average of 0.8 tonnes in 1948, produced 4.7 tonnes of wheat in 1975 from the same land. Such rapid growth 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 2000, Indian farms were adopting wheat varieties capable of yielding 6 tonnes of wheat per hectare.

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, Odisha 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 a growing population. As with rice, the lasting benefits of improved seeds and improved farming technologies now largely depends 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 spoilage, modern retail, and competitive buyers of produce from Indian farmers. This is increasingly the focus of Indian agriculture policy. Agricultural scientist **MS Swaminathan** has played a vital role in the green revolution. In 2013 NDTV awarded him as 25 living legend of India for outstanding contribution to agriculture and making India a food sovereign country.

THE MODERN AGRICULTURE ACTIVITY INDIA

Agriculture is the cultivation of animals, plants, fungi and other life forms for food, fiber, biofuel, medicinal and other products used to sustain and enhance human life. Agriculture was the key development in the rise of sedentary human civilization, whereby farming of domesticated species created food surpluses that nurtured the development of civilization. The study of agriculture is known as agricultural science. The history of agriculture dates back thousands of years, and its development has been driven and defined by greatly different climates, cultures, and technologies. In the civilized world, industrial agriculture based on large-scale monoculture farming has become the dominant agricultural methodology.

Selective breeding and modern practices in animal husbandry have similarly increased the output of meat, but have raised concerns about animal welfare and the health effects of the antibiotics, growth hormones, and other chemicals commonly used in industrial meat production. Genetically modified organisms are an increasing component of agriculture, although they are banned in several countries. Agricultural food production and water management are increasingly becoming global issues that are fostering debate on a number of fronts. Significant degradation of land and water resources, including the depletion of aquifers, has been observed in recent decades, and the effects of global warming on agriculture and of agriculture on global warming are still not fully understood.

THE FUTURE DEVELOPMENT OF AGRICULTURE ACTIVITIES IN INDIA

As per the 2010 FAO world agriculture statistics, India is the world's largest producer of many fresh fruits and vegetables, milk, major spices, select fibrous crops such as jute, staples such as millets and castor oil seed. India is the second largest producer of wheat and rice, the world's major food staples. India is the world's second or third largest producer of several dry fruits, agriculture-based textile raw materials, roots and tuber crops, pulses, farmed fish, eggs, coconut, sugarcane and numerous vegetables. India ranked in the world's five largest producers of over 80% of agricultural produce items, including many cash crops such as coffee and cotton, in 2010. India is one of the world's five largest producers of livestock and poultry meat with one of the fastest growth rates, as of 2011.

One report from 2008 claimed India's population is growing faster than its ability to produce rice and wheat. Other recent studies claim India can easily feed its growing population, plus produce wheat and rice for global exports, if it can reduce food staple spoilage, improve its infrastructure and raise its farm productivity to those achieved by other developing countries such as Brazil and China

In fiscal year ending June 2011, with a normal monsoon season, Indian agriculture accomplished an all-time record production of 85.9 million tonnes of wheat, a 6.4% increase from a year earlier. Rice output in India hit a new record at 95.3 million tonnes, a 7% increase from the year earlier. Lentils and many other food staples production also increased year over year. Indian farmers, thus produced about 71 kilograms of wheat and 80 kilograms of rice for every member of Indian population in 2011. The per capita supply of rice every year in India is now higher than the per capita consumption of rice every year in Japan.

2. FINDING & CONCLUSION

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, Odisha 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. Selective breeding and modern practices in animal husbandry have similarly increased the output of meat, but have raised concerns about animal welfare and the health effects of the antibiotics, growth hormones, and other chemicals commonly used in industrial meat production.

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