THINK INDIA JOURNAL

ISSN: 0971-1260
Vol-22-Issue-10-November-2019

A Study on Agricultural Research in India

U. Sridevi
MBA, Department of Management Studies
Bharath Institute of Science and Technology,
Selaiyur, Chennai, Tamil Nadu 600 073
Bharath Institute of Higher Education and Research

ABSTRACT

Agriculture is the backbone of the Indian economy which plays the most decisive role in thesocioeconomic development of the country. Indian agriculture is a miscellaneous and extensivesector involving a large number of actors. India has one of the largest and institutionally mostcomplex agricultural research systems in the world. The agricultural research system in Indiaincludes some 27,500 scientists and more than one lakh supporting staff actively engaged in agricultural research, which makes it probably the largest research system in the world.Historically, the Indian agricultural research system is the zenith of a process which started in the 19th century and which resulted in the establishment of the Imperial (now Indian) Council ofAgricultural Research (ICAR) on the recommendation of a Royal Commission on Agriculture in 1929. In the present research system, the Indian Council of Agricultural Research (ICAR) at the National level mainly aids, promotes and coordinates research and education activities in thecountry. The development of agricultural research system in India, ever since the colonial era till today, is being tried to trace in the paper. An attempt has been made to portray the role of FiveYear Plans regarding investment, technology transfer and other aspects related to agriculturaldevelopment in India. Although agriculture has been playing the most vital role in Indianeconomy, during the course of the study, it has been observed that not much emphasis has been given to the history of evolution of agricultural research in India.
Keywords: ICAR, Indian Agriculture, Colonial, Post colonial

1. INTRODUCTION

Agriculture, as the backbone of Indian economy, plays the most crucial role in the economic sphere of the country. Indian agriculture is a diverse and extensive sector involving a large number of actors. It has been one of the remarkable success stories of the post -independence era through the association of Green Revolution technologies. The Green Revolution contributed to the Indian economy by providing food self-sufficiency and improved rural welfare. The role of national agricultural research system (the NARS) was imperative in the context of Green Revolution. India has one of the largest and institutionally most complex agricultural research systems in the world. Historically, the Indian agricultural research system is the zenith of a process which started in the 19th century and which resulted in the establishment of the Imperial (now Indian) Council of Agricultural Research (ICAR) on the recommendation of a Royal Commission on Agriculture in 1929. Since then there was a stupendous evolution of agricultural research in India.

ISSN: 0971-1260
Vol-22-Issue-10-November-2019

AGRICULTURAL RESEARCH IN COLONIAL INDIA

The early development of agricultural research in India was associated with the reappearance of famines. This acted as a nasty reminder of the little precedence accorded to agricultural research and development in colonial India.

ESTABLISHMENT OF AGRICULTURE DEPARTMENTS ANDAGRICULTURE COLLEGES

An elemental department of agriculture in India was started in the year 1871 in the form ofDepartment of Revenue, Agriculture and Commerce. Although the chief function of thedepartment remained revenue and there was no work on agricultural development, this did mark a commencement and appreciation of the agriculture sector by the colonial government. However, this initiative was not very significant. The accolade for this modest foundation goes to
Lord Mayo who was the fourth Viceroy of India, and to A.O. Hume who was a civilian of theBengal Civil Service and one of the founders of the Indian National Congress. However the key duty of the agriculturedepartments both in the centre and the provinces lingered the same that is famine relief. In theyear 1892, an Agricultural Chemist and an Assistant Chemist were allotted to look after researchand teaching in India which manifested the first scientific staff in the Department of Revenue and Agriculture. Duringthe stern famines of 1899-1900, Lord Curzon, the then Viceroy of India, was convinced that theGovernment of India must urgently concentrate on the agricultural sector to overcome thedamages caused by the famine episodes. As a consequence, an Agricultural Research Institute was established in Pusa, Bihar in the year 1905. Likewise, the agriculture departments in theprovinces were expanded and agricultural colleges were established at Pune, Kanpur, Sabour,Nagpur, Lyallpur and Coimbatore between 1901 and 1905. However, the chief function of thesecolleges remained teaching and training and research activities could not be carried out due tothe lack of scientific and technical manpower and finance.

ESTABLISHMENT OF THE IMPERIAL COUNCIL OF AGRICULTURAL RESEARCH

The Royal Commission on Agriculture, which was appointed in the year 1926, proposed that an Imperial Council of Agricultural Research should be set up to endorse, direct and organizeagricultural research all over India. The council was supposed to guide the research activities ofcentral and provincial departments of agriculture. As per the proposal of the Royal commissionon Agriculture, the Government of India, Department of Education, Health and Lands set upImperial Council of Agricultural Research on 16th July, 1929. The name of the council was changed from Imperial Council of Agricultural Research to Indian Council of AgriculturalResearch in March 1947.

THE COMMODITY COMMITTEE

Several semi-autonomous Central Commodity Committees were set up by the Ministry of Food and Agriculture that were concerned with research and development activities related to specific

ISSN: 0971-1260
Vol-22-Issue-10-November-2019

crops in British India. These committees were semi-autonomous bodies in the sense that theywere financed partly by the government and partly by the taxes collected on the export of theconcerned commodities. The committee achieved success in the terms that it hadeffectively developed 70 improved varieties of cotton, and the fiber quality of Indian cotton wasalso considerably improved. Most of the commodity committees related to specific crops hadtheir own research stations or institutes which were located in the regions where the concernedcrop is most widely grown. However, some other commodity committees financed researchschemes conducted by the State Departments of Agriculture, e.g., Spices and CashewnutCommittee. The achievement by the Indian Central Cotton Committee leads to the setting up ofcommodity committees on crops like lac, jute, sugarcane, tobacco, coconut, oilseeds, spices andcashewnut and arecanut. The Vice-President of ICAR was the President of all the commodity committees. The Central Commodity Committees were later abolished (beginning in 1965) and the research institutes under their control were transferred toICAR.

PLANTATION RESEARCH IN COLONIAL INDIA

The provincial agricultural departments could seldom go beyond the collection of revenue dataand famine relief operations. No doubt, experimental farms had been established and in 1884.For conducting experiments the government looked more to agricultural societies than to its own agencies. The society in Calcutta (AHSI) agreed to conduct all experiments in economicproducts. The Government of Bengal raised its grant from Rs. 2400 to Rs. 6000 per annum.The objectives of Agricultural and Horticultural Society of India (AHSI) were

- To obtain precise and trustworthy details as to the cost of cultivation and produce per acre of fibre-bearing plants of promising character, so that the Agriculture Departmentmay be able to form a decisive conclusion as to the prospects of a profitable exploitationof the plants in question.
- To secure a competitive trial of machines and processes for the extraction of the fibres. Major focus of agricultural research in colonial India was on• Cotton• Silk• Tea• IndigoThe official experimental farms were obsessed with cotton. Mounting pressure from Britishcotton tycoons had forced the Government of India to initiate a vigorous cotton improvement programme.

New and untested varieties involved different methods of cultivations and great labour input, without a higher level of output or profit, and with the risk ofsevere losses to each of these classes. The last quarter of the nineteenth century saw the closureof several experimental farms. But private farms patronized by cotton mills proved remunerative. For example, the Governments Mungeli farm at Bilaspur had to be abandoned, whereas the nearby Kyragarh and Nandgaon cotton farms owned by Bengal-Nagpur Cotton Mills Companyproduced 6,00,000 lbs. the reason behind this could be perhaps because mills could procure cotton by advancing seeds to cultivators who employed traditional techniques, while the exercise in Mungeli failed because the government was charmed by the imported technologies and ideas. The dependence on traditional knowledge proved to be beneficial for the mills. Same was the story with silk manufacture which was also quite remunerative and received some attention. However, government did not pay attention to his advice and sericulture remained a purelyprivate concern for a long period of time. At the turn of the century Ms. Tata and Sonssuccessfully started a silk firm in Bangalore for the introduction of

ISSN: 0971-1260
Vol-22-Issue-10-November-2019

Japanese methods ofagriculture.Botanical experiments were vital for plantation work. A horde of both amateur and professionalbotanists had been active since the early colonial period in India. However, the early history ofbotanical works in India shows that except for ferns, no special attempt was ever made to systematically survey the cryptogamic vegetation of the country.

AGRICULTURAL RESEARCH IN POST-COLONIAL INDIA

Since independence, there has been a substantial growth in the Indian NARS. ICAR is the chief public body at the national level for synchronizing, directing, and endorsing agricultural research and education in the country. Likewise, State Agricultural Universities are responsible for doing the same at the state level. After independence, agricultural research was given much emphasis which in turn led to increased agricultural production and near self-sufficiency in food grains in the country. The greater emphasis given to the agricultural research could be established by the fact that the system guided by the ICAR now has

OTHER ORGANIZATIONS INVOLVED IN AGRICULTURAL RESEARCH

- General universities, about 23 of which are involved in agricultural research,
- Scientific organizations such as the Council of Scientific and Industrial Research, theBhabha Atomic Research Centre,
- Government departments such as the Department of Science and Technology, theDepartment of Biotechnology,
- Private and voluntary organizations,
- Scientific Societies

PROJECT FOR INTENSIFICATION OF REGIONAL RESEARCH ON COTTON, OILSEEDS AND MILLETS

With the initiatives for agricultural research development, there was a need to coordinate theresearch on various crops, especially cotton, oilseeds and millets. Moreover, a need was felt toconduct the research work in different agro climatic regions of the country. The research programme for each region was prepared by a regional coordination committee headed by the Agriculture Commissioner of India, and approved by therespective commodity committees. A regional research station composed of full-fledged sectionsof plant breeding and genetics, agronomy, agricultural chemistry and soil science, plantpathology and entomology.

INITIATION OF ALL INDIA COORDINATED RESEARCH PROJECTS

The conception of coordinated projects was first instigated in relation to hybrid maize improvement as ICAR was fascinated in maize improvement following the successful approachby the USA and several other countries. Rockefeller Foundation was the organization who wasactively involved in crop improvement programmes in Mexico, Central America and theCaribbean. Two leading scientists who were associated with Rockefeller Foundations Maize Improvement Programmes in Mexico and Columbia visited India to study the position of maize crop andprepared a report based on their findings. This report was scrutinized by the Botany Committee of ICAR and by the Advisory Board of the Council. This provided the basis for the coordinated maize project.

ISSN: 0971-1260
Vol-22-Issue-10-November-2019

However, the advancement of the coordinated projects was critically analysed in the Fifth FiveYear Plan. Accordingly, some projects were terminated, some were merged with other projects, some projects were elevated to the level of Project Directorates and some were changed to Coordinated Programmes. As a result, the number of coordinated projects decreased to forty ninein the Fifth Five Year Plan. In addition to the coordinated projects, there were some coordinated programmes running during that course of time.

DEVELOPMENT OF AGRICULTURAL UNIVERSITIES

The very fact that in 1948, there were only seventeen agricultural colleges in the country showsthat before independence, higher education in agriculture was almost ignored. These agriculturalcolleges were under the control of Director, Department of Agriculture of the respective states.However, colleges for animal husbandry, governed by the Director, Animal Husbandry of theconcerned states were separate from those for agriculture. Research and extension were theresponsibility of the agriculture and the animal husbandry departments of the states. At that time, the organization, staffing patterns, pay scales of teachers and financial support for research andother activities were not appropriate for a first grade education and training in agriculture.

2. CONCLUSIONS

Agricultural research in India has an interesting history regarding its growth and development. It started during the colonial era and today the agricultural research system in India includes some27,500 scientists and more than 100000 supporting staff actively engaged in agriculturalresearch, which makes it probably the largest research system in the world. They are distributedin the ICAR system, Agricultural Universities, General Universities and other organizations. Inthe present research system, the Indian Council of Agricultural Research (ICAR) at the Nationallevel mainly aids, promotes and coordinates research and education activities throughout thecountry. The research and education responsibilities at the state level rest with the StateAgricultural Universities. In addition to these main streams of research, some generaluniversities and other agencies like scientific organizations related to agriculture, Government Departments, voluntary organizations, private institutions etc. participate in the nation's research efforts. Hence, the role of National Agricultural Research System in the development ofagricultural research is of great importance within which all these organizations come. Five year plans play a major role regarding investment, technology transfer and other aspects related toagricultural development in India. Although agriculture has been playing the most vital role inIndian economy, during the course of the study, it has been found that not much emphasis hasbeen given to the history of evolution of agricultural research in India.

3. REFERENCES

[1] Douglas Hortona and Mackayb Ronald (2005). Using evaluation to enhance institutional
[2] learning and change: recent experiences with agricultural research and development.
[3] Agricultural Systems, 78, 127–142.
[4] Deepak Kumar (2000). Science and the Raj.Oxford University Press.
[5] Mruthyunjaya and Ranjitha.P (1998). The Indian Agricultural Research System:

ISSN: 0971-1260
Vol-22-Issue-10-November-2019

[6] Structure, Current Policy Issues, and Future Orientation. World Development, 26 (6), 1089-1101.
[7] Mywish K. Maredia and David A. Raitzer (2012). Review and analysis of documented patterns of agricultural research impacts in Southeast Asia. Agricultural Systems, 106, 46–58.
[8] Rajeswari. S.(1995). Agricultural Research Effort: Conceptual Clarity and Measurement.
[9] World Development, 23, (4), 617-635.