

AGRICULTURAL RESEARCH IN INDIA: AN EXPLORATORY STUDY

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**Abstract.** *Agriculture is the backbone of the Indian economy which plays the most decisive role in the socioeconomic development of the country. Indian agriculture is a miscellaneous and extensive sector involving a large number of actors. India has one of the largest and institutionally most complex agricultural research systems in the world. The agricultural research system in India includes 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 of Agricultural 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 the country. 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 Five Year Plans regarding investment, technology transfer and other aspects related to agricultural development in India. Although agriculture has been playing the most vital role in Indian economy, 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.*

**Key words:** *ICAR, Indian Agriculture, Colonial, Post colonial.*

INTRODUCTION

Agriculture, as the backbone of Indian economy, plays the most crucial role in the socioeconomic 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

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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.

The main events in the history of agricultural research in India can be grouped into the following seven categories (Singh, 2001):

1. Establishment of agriculture departments and agriculture colleges,
2. Establishment of the imperial council of agricultural research,
3. Initiation of commodity committees,
4. Project for intensification of regional research on cotton, oilseeds and millets,
5. Initiation of all India coordinated crop improvement projects,
6. Reorganization of ICAR, and
7. The development of agricultural universities.

Among these, first three could be listed under the development of agriculture in the colonial era, whereas the next four were prominent in the post-colonial era.

## 2. 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.

### 2.1 ESTABLISHMENT OF AGRICULTURE DEPARTMENTS AND AGRICULTURE COLLEGES

An elemental department of agriculture in India was started in the year 1871 in the form of Department of Revenue, Agriculture and Commerce. Although the chief function of the department 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 the Bengal Civil Service and one of the founders of the Indian National Congress. Paradoxically, the department was established by the Government with a view to supply cotton to the hungry textile industries of Manchester, and not to feed the famine ravished India of 1877-78. Based on the

report of the Famine Commission, the government of India was determined to set up a central

Department of Agriculture controlled by the Imperial Secretariat and agriculture departments were to be set up in the provinces to primarily look after agricultural enquiry, agricultural development and famine relief in the country. However the key duty of the agriculture departments both in the centre and the provinces lingered the same that is famine relief. In the year 1892, an

Agricultural Chemist and an Assistant Chemist were allotted to look after research and teaching in India which manifested the first scientific staff in the Department of Revenue and Agriculture. Eventually, an Inspector General of Agriculture was appointed to advise the Imperial and the Provincial Governments on agricultural matters in 1901. An Imperial Mycologist was appointed in the same year, and an Entomologist was appointed in 1903. During the stern famines of 1899-1900, Lord Curzon, the then Viceroy of India, was convinced that the Government of India must urgently concentrate on the agricultural sector to overcome the damages 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 the provinces were expanded and agricultural colleges were established at Pune, Kanpur, Sabour, Nagpur, Lyallpur and Coimbatore between 1901 and 1905. However, the chief function of these colleges remained teaching and training and research activities could not be carried out due to the lack of scientific and technical manpower and finance.

## 2.1 ESTABLISHMENT OF THE IMPERIAL COUNCIL OF AGRICULTURAL RESEARCH (THE PRESENT DAY ICAR)

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 organize agricultural research all over India. The council was supposed to guide the research activities of central and provincial departments of agriculture. As per the proposal of the Royal commission on Agriculture, the Government of India, Department of Education, Health and Lands set up Imperial 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 Agricultural Research in March 1947.

## 2.2 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 crops in British India. These committees were semi-autonomous bodies in the sense that they were financed partly by the government and partly by the taxes collected on the export of the concerned commodities. The Indian Central Cotton Committee was the first commodity committee to be established in the year 1921 on the recommendation of the Indian Cotton Committee (1917-18). The chief function of this Central Cotton Committee remained to be cotton improvement with special focus on the development of improved methods of growing, manufacturing and marketing of cotton. The committee achieved success in the terms that it had effectively developed 70 improved varieties of cotton, and the fiber quality of Indian cotton was also considerably improved. Most of the commodity committees related to specific crops had their own research stations or institutes which were located in the regions where the concerned crop is most widely grown. However, some other commodity committees financed research schemes conducted by the State Departments of Agriculture, e.g., Spices and Cashewnut Committee. The achievement by the Indian Central Cotton Committee leads to the setting up of

commodity committees on crops like lac, jute, sugarcane, tobacco, coconut, oilseeds, spices and cashewnut and arecanut. The Vice-President of ICAR was the President of all the commodity committees. However, there was a great necessity to conduct the researches on various crops within the different agroclimatic regions of the country as in the context of India, the soil and climate fluctuate to a great extent from one region of the country to another. These apprehensions led to the formulation of the Project for Intensification of Regional Research on Cotton, Oilseeds and Millets

(PIRRCOM), which was the first step in the country towards coordinated approach to agricultural research. The Central Commodity Committees were later abolished (beginning in 1965) and the research institutes under their control were transferred to ICAR.

## 2.1 PLANTATION RESEARCH IN COLONIAL INDIA

The provincial agricultural departments could seldom go beyond the collection of revenue data and 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 economic products. 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 Department may be able to form a decisive conclusion as to the prospects of a profitable exploitation of 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
  - Indigo

The official experimental farms were obsessed with cotton. Mounting pressure from British cotton tycoons had forced the Government of India to initiate a vigorous cotton improvement programme. However, the earlier projects of 1840s and 1860s could not be made successful mainly because of insufficient botanical knowledge or the necessary market research. Later, in 1890, the association of an expert botanist in cotton experiments was specifically called for. The cultivation and marketing of existing varieties produced a relatively stable and acceptable return to money-lenders and dealers. 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 of severe losses to each of these classes. The last quarter of the nineteenth century saw the closure

## 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 some 27,500 scientists and more than 100000 supporting staff actively engaged in agricultural research, which makes it probably the largest research system in the world. They are distributed in the ICAR system, Agricultural Universities, General Universities and other organizations. 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 throughout the country. The research and education responsibilities at the state level rest with the State

Agricultural Universities. In addition to these main streams of research, some general universities 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 of agricultural 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 to agricultural development in India. Although agriculture has been playing the most vital role in Indian economy, during the course of the study, it has been found that not much emphasis has been given to the history of evolution of agricultural research in India.

#### ENDNOTE

- 1 <http://planningcommission.nic.in/plans/planrel/fiveyr/1st/1stindex.html>
- 2 <http://planningcommission.nic.in/plans/planrel/fiveyr/5th/5planch2.html>
- 3 <http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>

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