17. OUR JOURNEY IN AGRICULTURE AND VISION FOR THE FUTURE

The famine from 1876-78 led to institution of Famine Commission of 1880. The horrors of Famine (1889-90) convinced Lord Curzon that urgent attention must be paid agriculture. Lord Curzon passed the Land Alienation Act (1900) and Cooperative Societies Act (1904). Lord Curzon, the Viceroy of India with the generous donations from Henry Phipps of the USA had founded the Imperial Agriculture Research Institute in 1905 at Pusa, a village in the Darabhanga district of Bihar. The main building at Pusa was named after its donor as the Phipps Laboratory. [PUSA stands for the donor of the Institute, Phipps of the USA]. There was a disastrous earthquake in 1936 and Pusa suffered heavily. After careful consideration the Government of India rebuilt the institute at New Delhi. The transfer to New Delhi was completed by October, 1936. The Marquees of Linlithgo, the then Viceroy of India, opened this Institutes in November, 1936. This Institute (IARI) in Delhi is popularly known as the Pusa Institute. Under the University Grants Commission Act 1956, the Institute (at New Delhi) got the status of the Deemed University and Teaching and Research activities were intensified from 1958. In 1947, India had about 27 Agricultural and Veterinary Colleges including the Indian Agricultural Research Institutes, Indian Veterinary Research Institute and five other Agricultural Colleges established during the first decade of the century.

Agriculture Colleges were started at Poona (Pune) and Kanpur. Teaching was the main mandate. The Indian Central Cotton Committee (ICCC) (1921) was formed as per recommendation of the Indian Central Cotton Commission (1917-18).

The Government of India appointed a Royal Commission in 1926 to examine the condition of agricultural and rural economy in India. The Imperial Council of Agricultural

Research (ICAR) was established in 1929 as a Society under the Societies Registration Act, 1860. The Society was registered on July 16, 1929. [After Independence, the name of the society was changed to Indian Council of Agricultural Research (ICAR)]. The food crisis created by the Second World War and the Bengal famine in 1943 deepened and became the matters of great concern to Government of India. To meet the food shortage the Grow More Food campaign was started in 1943.

The Indian Central Coconut Committee and the Indian Central Tobacco Committee were formed in 1945. The Indian Central Arecanut Committee was formed in 1949 and the Indian Central Spices and Cashewnut Committee were formed in 1958. Regional stations\sub-station on cotton, Jowar, Finger millet, setaria, castor, groundnut, linseed, bajra were established and the PIRRCOM (Project for Identification of Regional Research on Cotton, Oilseeds and Millets) were started.

All India Coordinated Research Projects: The AICRPs were born from the coordinated project on maize developed with the Rockefeller Foundation's assistance in 1957, ICAR has now about 70 All India Coordinated Research projects covering various disciplines and commodity crops, livestock, fisheries, home science, and agricultural engineering. An AICRP enables effective utilization of the resources in man and material anywhere in the country to tackle some of the important national problems.

ICAR Institutes: The ICAR is directly responsible for administering 32 research institutes in the fields of agriculture, animal sciences and fisheries. Some of these are single commodity-oriented crop institutions while a few of them undertake work on a number of crops. The Indian Agricultural Research Institute (IARI), New Delhi, the Indian Veterinary Research Institute (IVRI), Izatnagar, and the National Dairy Research Institute (NDRI), Karnal are the three

national institutions which have responsibilities both for research and post-graduate education. The recent establishment of the National Academy of Agricultural Management at Hyderabad as a constituent unit of the Council is an important landmark in institution building. This Academy would be responsible for providing quality training to various categories of personnel involved in agricultural research all over the country. Establishment of an Agricultural Research Service (ARS) started on October 1st, 1975 marks yet another landmark in the history of research management of ICAR.

Agricultural Universities: The responsibility for research in most of the States is now with the 21 agricultural universities, which perform in an integrated way the functions of teaching, research and extension education. The ICAR has recently taken major steps to further strengthen the agricultural research capabilities of the agricultural universities through the National Agricultural Research Project (NARP), which is being implemented through the assistance of IBRD.

Krishi Vigyan Kendras (KVKs): The ICAR has sponsored a programme known as the Krishi Vigyan Kendras, designed to provide skill oriented vocational training to practicing farmers, in-service field level extension Workers or those who intend to go in for self-employment.

Other ICAR schemes:

i. National demonstrations and Operational Research Projects :In 1964-65,

ii. Scheme of Professors of Eminence/ National Fellows

iii. National Research Centres

iv. Advanced Centres of post-Graduate Education and Research

VISION FOR AGRICULTURE IN 2020 AD

President APJ Abdul Kalam in 2003 opined that that there is need for India to launch a new vision, which he called "Vision - 2020". To achieve this, they should concentrate on two mantras: Effective Implementation with People's Participation; and Effective Communication for People's Participation. A key element of "Vision 2020" would be "*Providing Urban amenities in Rural Areas* (PURA)". The Biological Diversity Bill 2002, passed in the Winter Session, marked a major milestone in India's commitment to conservation and sustainable utilization of our bio-resources.

Agricultural Research in India

The research thrust areas identified for immediate future are:

i. Increasing the productivity of crops

ii. Micro-propagation of agricultural and horticultural plants though tissue culture techniques, biotechnology, etc.

iii. Forage crops for various agroclimatic regions

iv. Achieving sustainable agriculture through integrated farming systems, integrated nutrient management, biofertilizers, etc.

v. Optimal cropping system in accordance with resource base in dryland agriculture

vi. Organic farming

vii. Wasteland development through agroforestry, agri-horticulture, silvipasture, insitu soil moisture conservation, and technologies for problem soils

viii. Evolving eco-friendly, low cost technologies including biopesticides and biocontrol agents

ix. Production of quality seeds of agricultural and horticultural crops including hybrids seeds

x. Strengthening post harvest research and protected cultivation from crop produce losses

xi. Developing suitable farm machineries and tools to manage labour scarcity in farm operations

xii. Strengthening research on new irrigation methods, developing drought tolerant crop varieties to manage water scarcity

xiii. Developing low cost packing and processing technologies to agricultural and horticultural commodities

xiv. Non-conventional energy resources

xv. Research on productivity and processing of medicinal plants. Commercial exploitation of medicinal plants in domestic and foreign markets

xvi. Setting of agri-clinics and agri-business centres in areas such as soil, water quality and input laboratory service centre, plant protection, horticulture, marketing, farm machinery and primary processing, etc.

Agricultural Extension in India

The farming community needs to increase their productivity through the mission Second Green Revolution using technological advances. Also dry land cultivation needs a thrust. The technology is the base item for the action plan to bring India into a developed nation in reality. Grooming **'**technology**'** from seed up to a fruit-bearing tree is an art, science and a specialised enterprise in itself. The key to success lies in assessing where, when and how to facilitate entry for money in the process of technological project realization. There are many other prior activities, which need to be done if technology development can mature into a good business activity. Another important development was that in addition to rapid spreading of interest within the actual farmers, the whole community (in the benefited areas) got involved. For example, a women 'Self Help Group' is being formed for certain joint cooperative efforts for better quality of life.

Farmers get considerable earnings (and substantial returns on their investment in Agro processing) per hectare. Stabilizing the agro technologies for the well chosen (market share wise) medicinal herbs and placing them in the correct places of value chain. Ever since the Agreement on Agriculture of the World Trade Organisation (WTO) began to be debated in the

country, increasing agricultural productivity and improving food quality are being tossed as the only solutions for farmers' survival. Invariably, at every conference and seminar on WTO, the common refrain is that farmers are left with no choice but to increase productivity and thereby reduce the cost of production to remain competitive in a globalised world. The productivity bug has bitten not only the agricultural scientists but also the policy-makers, planners and, of course, the politicians.

India'a Agricultural Heritage Status in Press

World heritage status for India's farming techniques - The Hindu, FEB 13, 2010

India's locally developed farming techniques look set to take their place on the world heritage map alongside the country's national parks of outstanding beauty and its grand monuments to culture.

The rice crop of Koraput, the salt water farms of Kuttanad, and the paddy fields of Thanjavur could join the likes of Konarak, Kaziranga and the Taj Mahal, under an initiative of the UN Food and Agriculture Organisation (FAO) designed to safeguard unique agricultural systems in an era of climate change.

"These sites are protecting our food security. They are our heritage… The techniques were developed by farmers, not by scientists or anything else. The technology is their own," said M.S. Swaminathan, Chairman MSSRF, who was speaking to reporters ahead of an international conference on biodiversity at the Research Foundation next week.

Globally Important Agricultural Heritage Systems (GIAHS) are regions of outstanding biodiversity that reflect the natural evolution of farming and may help provide natural solutions to changing climates in the future.

Orissa's Koraput region, India's first candidate for GIAHS status, has been nominated for the variety of rice, millets, pulses, and medicinal plants developed using traditional cultivation practices by tribal groups.

Papers for Kuttanad in Allapuzha, Kerala, where farmers have produced crops in sea water, have been submitted to the FAO and the 2,000-year-old system of irrigating paddy in Thanjavur should follow, Dr. Ajay Parida, Executive Director, MSSRF said.

Thus far, systems from just five countries have been identified as GIAHS: Andean agriculture in Peru, Chiloe agriculture in Chile, the Ifuago rice terraces of the Philippines, the Magreb Oases in Algeria and the Upland pastures that cross the borders of Kenya and Tanzania

Kudos for Koraputs Agricultural Heritage - Indian Express Jan 08, 2012

United Nation's Food and Agriculture Organisation (FAO) has recognised the efforts of the tribal community of Koraput to conserve biodiversity and develop climate resilient farm practices as a Globally Important Agricultural Heritage System (GIAHS).

✤The recognition of the Koraput traditional agricultural system as a GIAHS site is expected to guarantee local and international efforts for the conservation of biodiversity and sustainable use of its genetic resources.

✤GIAHS is defined as a remarkable land use systems and landscapes which are rich in globally significant biological diversity evolving from the co-adaptation of a community with its environment and its needs and aspirations for sustainable development.

✤Mentioning this at the inauguration of the 99th Indian Science Congress here, Prime Minister Manmohan Singh lauded the Koraput tribals for the achievement.

✤The Koraput region is famous for its rich agricultural biodiversity of global importance. The agro-biodiversity recorded in the Koraput region includes, 340 landraces of paddy, eight species of minor millets, nine species of pulses, five species of oilseeds, three species of fibrous plants and seven species of vegetables.

✤The Jeypore region is rich in genetic resources of medicinal plants. More than 1,200 medicinal plant species are available there. Some of the endemic plant species of the region are used for curing different diseases including gastrointestinal disorders, malaria and bone fracture.

✤The tribal groups have rich traditional knowledge about forest species too. It is also seen as the recognition of tribal people's contribution to biodiversity and knowledge systems, whilst increasing attention to their natural and cultural heritage.

✤The genetic diversity of Asian cultivated rice has been considered as the centre of origin of aus ecotype of rice. The landraces or traditional varieties growing here are

thought to be harbouring dominant genes for biotic and abiotic stresses, aroma and palatability, and hold promise for their utilisation in future plant breeding and biotechnology programmes, an FAO official said.

✤The tribal and rural families of this area have been developing and conserving these genetic resources from time immemorial with their traditional knowledge. Today’s landraces, evolved naturally with the changing environment and agricultural practices, are the products of careful and continuous selection by tribal women and men, whose merits have not yet received the recognition they deserve, he said.