



ELECTRONIC INFORMATION RESOURCE IN AGRICULTURAL INFORMATION SYSTEMS. RESOURCES SYSTEMS

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ABSTRACT

The paper gives the short foundation of the National Farming Exploration Framework (NARS) and the Indian Board of Agrarian Exploration (ICAR). It explains the National Agrarian Innovation Undertaking (NATP) and the parts of the National Rural Development Venture (NAIP) with exceptional reference to the Component-I under which all the significant and most inventive electronic activities, i.e., KrishiPrabha, CeRA, and e-Granth falls. The review of these tasks including goals and expectations has been highlighted especially keeping in perspective on the present situation of the NARS organizations. It further explains the rationale, mission and destinations of the activities, the strategies, and work programs. It likewise shows the directions and results of the tasks. The long haul positive expectations of the ventures have likewise been projected.

Keywords: National Rural Exploration Framework, Indian Board of Rural Exploration, National Agricultural Technology Task, National Agrarian Development Undertaking, KrishiPrabha, CeRA, e-Granth

INTRODUCTION

Agribusiness is key to financial development and improvement. It is a significant wellspring of sustenance for greater part of individuals in creating nations. It gives imperative crude materials to national or global industry. Farming has likewise assumed a key job in the improvement of human progress. In this unique situation, Rural Exploration is basic for improving farming creation. It prompts expanded profitability through the supported stock of improved creation advancements. 1 Agrarian research is expected to guarantee the nourishment and sustenance security of individuals. The creation of different farming items like grams, beats, oilseeds, vegetables, natural products, milk, poultry, fish and meat should be upgraded to make them accessible at moderate cost. Research ought to be fortified to improve the efficiency, the quality, productivity, reasonableness and manageability of significant cultivating frameworks. The principle goal of farming exploration is to improve and sound yields from progressively divided land-possessions. There is sizable and extensive degree for inquire about in nourishment protection and preparing. The innovation should lay accentuation on the exchange of logical and mechanical data from the examination foundations to its real clients. The Consultative Gathering on

Universal Agrarian Exploration (CGIAR) rose in 1970's to advance global horticultural research. 2 It expected to add to reasonable upgrades in the profitability of farming, ranger service and fisheries in creating nations through global agrarian research. Worldwide Gathering on Agrarian Exploration (GFAR) was set up in 1996 to fill in as an unbiased discussion for discourse and activity on basic issues identifying with rural research for development.3 Discussion on Rural Exploration in Africa (FARA) was created to diminish African nourishment uncertainty and destitution and upgrade ecological conditions. Farming Exploration Administration of the U.S. Division of Agribusiness conducts research to create and move proposals and answers for farming issues of high national need and give data access and dispersal to guarantee top notch, safe nourishment and other horticultural items. It likewise evaluates the healthful needs of Americans and supports an aggressive agrarian economy.

National Agricultural Research System (NARS) – India

India is an agrarian country and agriculture is the backbone of her economy. Agriculture has been the most crucial sector in India's economic and physical development. About 14.4 percent of the country's GDP (Gross Domestic Product) is contributed by agriculture and its allied sectors. 4 Agriculture growth is indispensable for country's economic and political progress. Advancement in agricultural technology contributed to increased production at the farm level, thereby contributing to the income and prosperity of the farmer. India has uplifted herself from the clutches of the begging bowl and courteous dependence on developed countries for her basic needs to self-reliance. This is the result not of a sudden chance but of sustained and meticulous planning, clear vision and mission and constant efforts to increase agricultural productivity. Arunachalam and Umarani 5 have mapped judicially the strengths of agricultural research in India. It adds that agricultural research in India is conducted in a larger number of institutions, and locations and the findings are published in larger number of journals than in any other field of science. He has resulted that the future of agriculture depends on three factors which are- research, public policy and farming community's cooperative action. He further adds that the greater interaction among.

Agricultural Universities

Autonomous state level institutions (State Agricultural Universities or SAUs) came into existence during the 1960's as a significant component of NARS. These are established under the acts of respective state legislature for integrating agricultural research, education and extension at state level. University Education Commission under the chairmanship of Dr. S. Radhakrishnan recommended the setting up of rural (agricultural) universities in India on the pattern of Land Grant System of Agricultural Universities in the USA. The Commission's recommendations were further strengthened by first and second Joint Indo-American Team in 1955 and 1959; Ford Foundation Study Team (1959); the Cumming's Committee's on Agriculture Universities (1960-62); a formal resolution of the government of India and a policy decision of the Planning Commission on Education (1964-66); the Agricultural Study Team of the Administrative Reforms Commission (1967) and the National Commission on Agriculture in 1975. On the recommendations of University Education Commission and other expert committees, Tarai (Utter Pradesh), Haringhatta (West Bengal), Patna (Bihar), Bubbhneswar (Orissa), Cochin (Travancore) and Anand (Bomaby State) were identified for setting up of agricultural universities. First agricultural university of India was established in Rudrapur in Tarai now known as Pant Nagar in 1960. The blue print for setting up such a

university was already prepared by HW Hannah in 1956. More states put the demand for such universities to the Government of India. In pursuance of these demands, Punjab Agricultural University (PAU) at Ludhiana was set up in 1962 and number of such universities came into being in the following years.

General Universities

Agricultural colleges were affiliated to general universities and state departments of agriculture prior to the establishment of agricultural universities in India. These colleges were transferred to agricultural universities with their origin in different states. But certain general universities which have well established departments are still engaged in basic and applied research of agriculture. Some of them also have Faculties /Colleges of Agriculture/Colleges of Home Science to impart education and to conduct research programmes. They also co-ordinate with ICAR in various adhoc research schemes and AICRPs (All India Coordinated Research Projects) as well as with other agencies in getting fellowships, etc at post- graduate level. Joint research programs have also been taken up by the ICAR with the scientists working in general universities. In this way, these universities are making remarkable contribution to NARS.

Government Departments

Many central government departments are benefiting NARS directly or indirectly through their various research programmes. The DST (Department of Science and Technology) promotes research in genetic engineering, post-harvest technology, biotech, etc. by providing financial support to various organisations. The Department of Environment is engaged in a number of ecological studies and development projects on dams and lands. The Department of Ocean Development supports fisheries research in India through Central Marine Fisheries Research Institute, other ICAR research institutes and universities. It also provides fellowships to develop highly trained manpower in fisheries. The Department of Meteorology is actively engaged in weather forecasting which is related to agriculture.

Agricultural Information Systems

Information is regarded as a vital national resource. It is indispensable for effective development planning and to ensure the optimal allocation and utilization of all other resources. Today, the society is termed as an information society. Information Centers and Information Systems are one of the greatest strengths of a nation which enable the nation to make industrial, scientific and economic progress. According to Vickery, information system is, "an organization of people, materials and machines that serves to facilitate the transfer of information from one person to another."¹² Thus an Information System is one whose prime function is to transfer or transform information.

Information systems include libraries, documentation centers, information centers and all such institutions involved in information processing and dissemination. These are developed to organise the flow of various types of documentary information among the varied users and bridge the gap between information accessibility and transfer, as information has no value until it is used. Generally, the information Systems can be subject-oriented (e.g. physical sciences, life sciences, etc.) and mission-oriented (e.g. Industry, defence, agriculture, etc.).

Modern agriculture is an applied science and its development largely depends upon the availability of huge volume of published scientific literature. Advancement of science and technology has given rise to a proliferation of scientific literature and information in the field

of agriculture and allied sciences including veterinary, fisheries and forestry. Roling defines an Agricultural Information System as, "A system in which agricultural information is generated, transformed, consolidated, and received and feedback...to underpin knowledge utilisation by agricultural producers."¹³ Accordingly, an agricultural information system consists of components (sub-systems), information related processes (generation, transformation, storage, retrieval, integration, diffusion and utilisation), system mechanisms (interfaces and networks) and system operations. It is a logical configuration of significant information for problem solution in agriculture.

Developments in agricultural sciences are taking place at an unprecedented rate throughout the world. There has been tremendous explosion of information in the field of agricultural sciences and technology. The growth in agriculture needs to be sustained and improved. This necessitates the availability of required information and data.

Agricultural information interacts and influences agricultural productivity significantly. Productivity can be enhanced by relevant, reliable and useful information and knowledge. This has given rise to the need for agricultural information systems so that expert/ scientific advice can reach the farming community in time. Farmers need timely expert advice to make them more productive and competitive. New agricultural information systems are needed to satisfy the emerging demands from agri-communities and agri-business. Growers need to obtain and process financial, climatic, technical and regulatory information to manage their farms. Both public and private institutions have emerged to supply farmers with information and analysis. Therefore, the provision of timely and easily accessible information is must to increase efficiency and improve the performance of the economy. Technological progress in agriculture is, therefore, crucial for the overall economic development of a country.

International Agricultural Information Systems

The Food and Agriculture Organisation (FAO) of the United Nations Organisation (UNO) initiated two global information systems i.e. AGRIS (International Information System for the Agricultural Sciences and Technology) and CARIS (Current Agricultural Research Information System) in the early seventies. The member countries were requested to cooperate in their venture.

National Agricultural Information Systems of India

nations' capabilities for making knowledge and information accessible for wider use are often referred to as a country's national information infrastructure. National Information System is a set of inter-related institutions and personnel's which provides specific categories of users with the information and consulting services relevant to their changing needs and abilities. Pauline Atherton has identified the following seven elements of a 'National Information System' –

- "A nucleus of physical information resources (libraries, documentation centers, information analysis centers, etc.);
- A supply of trained information personnel;
- Linkages to personnel information sources, i.e. to technical consultants, scientists, engineers, and technologists in higher education, research and development establishments, technological institutes and other technical units;
- Linkages of scientific decision making bodies, government agencies, economic sectors, educational institutions, research and development establishments and technological institutions;

- Two-way communication channels with users;
- An organisational system that brings together and energises these resources, personnel, and linkages; and
- National policies that promote the systematic development of the infrastructure.”

India has developed her indigenous agricultural information system. The Indian Council of Agricultural Research (ICAR) is the premier organisation in the country that coordinates and promotes agriculture research and education activities in the country. It acts as a repository of information and also provides consultancy services in almost all areas of agricultural sciences and allied sciences. ICAR started running an Agricultural Research Information Centre (ARIC) as the central source of information on all research projects and schemes financed by the ICAR. It has databases on A.P. Cess Fund schemes, deputation reports and research projects of the institutions. The ARIC is the national input centre for the AGRIS and CARIS agricultural databases of the FAO. The ARIC is also the national focal point for the SAARC Agricultural Information Centre (SAIC). National Information System in Agricultural Science in the country aims that everyone can have an easy access to the vast resources of libraries located in different parts of the country as well as in other countries.

Agricultural Resources Information System

The Agricultural Resources Information System (AgRIS) is the central sector scheme for strengthening/promoting agricultural information system in the Department of Agriculture & Cooperation (DAC), Ministry of Agriculture, Govt. of India. It is an e-government programme for fostering agricultural growth, poverty reduction and sustainable resource use in India at grass root level. This project is being executed by Agricultural Informatics division of National Informatics Centre. It is being implemented to bring information management culture to the NARS so that agricultural scientists can carry out research more effectively by having systematic access to research information available in India as well as in other countries, better project management of agricultural research, and modernisation of office tools. The ICAR research institutions, State Agricultural Universities, Zonal Research Stations and Project Directorates are being linked with the help of the communication satellite.

Agricultural Research Information System Network (ARISNET)

ICAR has started an Agricultural Research Information System Network (ARISNET) to exploit the potential of modern computing power in planning and management of agricultural research and scientific communication. Basic guidelines to implement this project were provided by a team of experts from ICAR and International Service for National Agricultural Research (ISNAR). The ARIS has the following four modules

1. Agricultural Research Personnel Information System (ARPIS) - The Agricultural Research Personnel Information System has been developed with the objective of keeping the information on the ICAR scientists, technical and administrative personnel at a central place so as to provide easy access to different types of information like cadre-strength, number of scientists in position, type of trained manpower available, distribution of scientists according to sex, caste, state, institute, discipline, etc. This will help the management in planning the personnel policies, man-power planning, recruitment, identification of subject matter specialists in various fields, research work being undertaken on different commodities with respect to agro-climatic zones and resources used etc.

2. Agricultural Research Financial Information System (ARFIS) - The Agricultural Research Financial Information System (ARFIS) software package has been developed for computerization of monthly accounts from voucher level.
3. iii) Agricultural Research Management Information System (ARMIS) - The basic purpose of the ARMIS is to provide the research managers the relevant information which help them in decision making related to effective planning, priority-setting, monitoring and evaluation of scientific research; management of physical, personnel and financial resources; organisational restructuring and policy initiatives.

Consortium for e-Resources in Agriculture (CeRA)

Consortium for e-Resources in Agriculture is a consortium of agricultural libraries under the Indian Council of Agricultural Research. National Agricultural Innovation Project (NAIP) has funded for establishing the CeRA at the Indian Agricultural Research Institute (IARI) to facilitate accessibility of scientific journals to all researchers/ teachers. CeRA has created an e-access culture among scientists/ teachers in the ICAR institutes, State Agricultural Universities (SAUs). CeRA has broadened the existing research and development information resource base of agricultural institutes in India by providing access to online journals. It provides online access of all important journals related to agriculture and allied sciences to researchers and students of the consortia. It acts as a permanent archive of the subscribed e-databases.

Human Resource Development

Training of library professionals and other staff associated with the project includes:(a) Digital library software and OAI-PMH(b) Library automation and WorldCat(c) Digital library content management standards(d) Capacity building of librarians and other professional on library management with reference to union catalogue(e) Creation, organisation, and management of online digital libraries and institutional repositories(f) Use of Web 2.0 technologies(g) User interaction and web-security(h) Online search services(i) Organising annual conference cum workshops, etc

Conclusion

Agriculture is a basic industry and the backbone of economy of the developing countries. It is a chief support to wipe out hunger and malnutrition. Agricultural production needs to be enhanced to meet the requirements of ever growing population. Agricultural progress is indispensable for socio-economic and political progress of a country. Agricultural Research is a pre-requisite to promote farming and increase agricultural production. It leads to increased production through the sustained supply of improved production technologies. India has developed her National Agricultural Research System (NARS). Indian NARS works under the umbrella of Indian Council of Agricultural Research (ICAR) which is the apex body that aids, promotes and coordinates agricultural research and education activities in the country.

Modern agriculture is an applied science which relies on the vast amount of research outputs of both basic and applied science. It being an interdisciplinary subject rests on a wide range of literature of potential importance to agricultural scientists. Scientists must have access to information needed from the enormous and continually expanding mass of agricultural information. Scientific and technological development in agriculture needs to be communicated to its real users. The value and importance of information lies in its proper use. The incessant flow of information is mandatory to increase efficiency and also to

improve the performance of the economy. Information systems are developed to bridge the gap between information accessibility and information transfer. Information systems include libraries, documentation centres, information centres and all such institutions involved in information processing and dissemination. The development of a country largely depends more on the application of knowledge and information. Transfer of technology in agriculture is a pre-requisite for advancing agricultural production. So many National and International Information Systems/Services are operating to provide access to knowledge in every field of specialisation in agricultural sector. The information systems cater information needs of researchers, agro-business industry and farmers. Libraries and information centres attached to the institutions under the network of Indian National Agricultural Research System are the backbone of India's Agricultural Information System.

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