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A RESEARCHER'S EXPERIENCE ON SCIENTIFIC INFORMATION ON COCONUT IN INDIA

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ABSTRACT

The Central Plantation Crops Research Institute (CPCRI), Kasaragod, Kerala, mainly organises, executes and co-ordinates coconut research in India. Some 220 Indian scientists under the CPCRI, All India Co-ordinated Coconut and Arecanut Improvement Project, Agricultural Universities and Regional Research Laboratories are now working as coconut researchers. The career advancement of these scientists is linked with their productive research in which the publications form the major criteria for evaluation. Under this 'publish or perish' environment, there is a 'demand pull' for coconut research information in India.

Though the CPCRI Library has a good assemblage of research journals, technical bulletins, proceedings, bibliographies, newsletters, title page services, abstracting journals, FAO reports and books with coconut research and development, the access to some of the information generated at the different coconut research centres within, as well as outside the country, are not either available in published form or there is a great deal of resistance to flow of information among the organisations. As such, the potential users in India are sometimes quite unaware of even their existence and thus the valuable information is wasted.

The existing information delivery on coconut in CPCRI library and Agricultural Universities in India is largely confined to the "Try and find" system. It would be ideal by providing "Supply-push and Here-it-is" systems through the selective dissemination of information (SDI) supported by co-ordination on informatin networking for sharing knowledge and freely photocopying service. To bridge the gap, the assistance of the International Development Research Centre (IDRC), Canada would be appropriate in establishing computerised data base of information storage and retrieval, at the CPCRI; eventhough the Coconut Information Centre (CIC) recently established under the Coconut Research Board of SriLanka has created certain impact. It is also felt that the International Information System on coconut could be strengthened with a joint venture of CIC and CPCRI.

Coconut is an important food-cum-oil yielding crop grown in some 87 countries mainly distributed in the tropical region, while its utilisation in one form or the other is spread over the entire world. As far as coconut research is concerned, the Philippine's research input in production, protection and processing sectors is perhaps of the highest order, coconut being the most important industrial-cum-cash crop for that country. Other leading coconut producing countries such as Indonesia, India, Sri Lanka and Malaysia carry out organised research largely on production and protection aspects and very little on processing and technology aspects; whereas industrially advanced nations namely, the USA,UK, FRG the Netherlands, Sweden and Japan devote their research efforts on coconut technology from the view point of consumers' interest. France also has a massive coconut improvement (hybridisation, palm nutrition and tissue culture), programme at its Ivory Coast Coconut Field Station under the IRHO, and this country has been very successful in commercialising its research output on coconut as well as on oil palm.

India's situation

Though India accounts for nearly 13 per cent of coconut area and about 12 per cent of coconut production and occupies the third position in both these aspects in the world, her research input on coconut is considerably low. The reason behind this situation is that coconut has only a limited regional importance in the Indian economy. Therefore, unlike in the Philippines and Sri Lanka, there is no institution to deal exclusively with coconut research in India. The Central Plantation Crops Research Institute (CPCRI),one of the 35 national research institutions in agriculture under the Indian Council of Agricultural Research (ICAR) organises, executives and co-ordinates coconut research in the country in addition to research on thirteen other plantation crops. Coconut is, however, the major thrust of the CPCRI programmes as 48 out of 91 on-going projects of the institute are on coconut alone.

Number of Coconut Scientists in India:

Out of 145 Scientists working in CPCRI about 94 scientists at the Institute's Headquarters, Kasaragod, the Plant Protection Research Station at Kayangulam and its Research complexes in Lakshadweep and Goa are coconut workers. Majority of them are whole time coconut researchers. Another 40 Scientists working for the All India Co-ordinated Coconut and Arecanut Improvement Project (AICCAIP) carry out adaptive research on coconut in 11 centres spread over eight coconut growing States and one Union Territory in the country. Besides these, some 75 research workers of ten Agricultural Universities,seven general Universities, and three Regional Research Laboratories are partly engaged in coconut research activities. The total number of coconut researchers in India on all accounts, does not exceed 220 in the present situation. While India possesses the world's third largest scientific manpower next only to the USA and the USSR, the coconut scientists constitute the most negligible proportion of the total scientific manpower in the country.

Background of coconut scientists:

The coconut scientists like any other agriculture scientists in India are the products of the Indian Agricultural Research Institute (IARI) New Delhi, Agricultural Universities, reputed general universities and centres of Advanced Studies/Research, besides the Western Universities abroad. They either belong to the Agricultural Research Service (ARS) group under the ICAR or University Faculty Service group. Under the existing recruitment policy, highly qualified (Post-Graduates mostly Doctorates), meritorious and competent people only get entry to these categories of services. Eventhough the ARS is an all-India cadre service, most of the ARS scientists working in coconut belong to the coconut growing region due to their familiarity with the crop through specialised courses and experiences, and prefer to work at the same place, undisturbed as coconut specialists like most of the university research workers. The Five Yearly Assessment system for the career advancement of the ARS Scientists, and promotion only through the interview system in the Universities provide an excellent opportunity for quality research and information build-up in coconut sciences in India.

Demand for Information Services:

As now discussed, one may find that the career advancement system for coconut researcher in India is based on the researcher's contributioins in the form of generation of new information in coconut sciences and not according to the traditional criteria of seniority which is still in vogue in non-research sectors in the country. In other words, Indian coconut researchers' future solely lies on the "publish or perish" syndrome. Under this environment, it is obvious to notice higher demand for information services by the coconut researchers in India. The coconut researchers are fully conscious about the fact that the accessibility to information has a telling effect on their productivity and there may not be any doubt about this. There is always a built-in urge for information serices in them as they had been exposed to well established libraries during their post-graduate studies, including doctoral and post-doctoral works. It is only because of the "demand pull" for the scientific literature that there has been vast growth in the acquisition of reference books and periodicals in the libraries of Indian Universities and research institutes, in spite of severe resource constraints. The CPCRI, for example, spends more than Rs.1 million/year in procuring the books and periodicals for servicing 145 scientists of the Institute. Even then the Institute is not able to cope up with the demand for scientific literature as the researchers' expectations are quite high and the information market is very much open. One point the author would like to make clear is that the coconut scientists in India do not suffer from the state of "User ignorance" in the matter of information services due to their strong background and motivation towards career advancement.

Nature of Information Demanded:

The days of generalisation in scientific research are over and the present era is one of the specialisation. To fall in this line, the coconut scientists of CPCRI as well as the AICCAIP have been assigned with the projects relating to their areas of specialisation, as far as possible. The CPCRI scientists are distributed over well identified 13 Divisions and within the Division they are working in specialised areas. In the Division of Pathology, for example, there is a group of pathologists exclusively working on coconut diseases. Scientists of this group are again divided into their respective areas of specialisations. A scientist handling a project on Phytophthora diseases of coconut would like to see the literature on this subject emanating from other laboratories in India as well as abroad. This will be his first priority on information needs as it has direct relevance to his work. Then he would like to see the literature on Phytophthora diseases on plantation crops followed by Phytopthora diseases on tropical crops. The information on plant diseases in general, will be of low priority to this worker, while other related subjects will be of casual interest to him. The rate of accumulation of information is so high that if one would like to show one's interest to subjects other than that directly relevant to one's work, it will be at the cost of one's efficiency only. In a nutshell, our scientists desire to have what is called "Selective Dissemination of Information" (SDI).

The coconut researchers in India have very little opportunities to attend International Conferences, Symposia, Seminars and Workshops on coconut research and development. Similarly their opportunities to visit and work in overseas laboratories and libraries on collaborative or exchange programmes are extremely limited. Their services also do not provide the benefit of 'Sabbatical' leave. To collect reprints through informal correspondence, also becomes prohibitively expensive.

Moreover, many institutes/organizations charge for supply of reprints/ xerox copies, which is beyond the means of most scientists. They simply work in a kind of isolation. Under this situation, the SDI system is most appropriate.

Supply of Information Service:

The CPCRI Library is a specialised library in India dealing with the plantation crops in general, coconut, oilpalm, arecanut, cashew, cocoa and spices in particular. As on 31st October, 1983, the total collection of books, reports and back volumes in this library comes to nearly 33,000 and the subscriptions to periodicals for the year 1983 numbered 700 of which foreign subscriptions comes to about 400. Compared to the IARI Library and Indian University Libraries, the CPCRI Library is a very small unit, but considering its special nature, it is certainly an impressive one as information outputs on plantation crops, are relatively small, compared to those in cereals or legumes.

Types of Information Supply:

As in the case of other crop sciences, in coconut "Crop journals" and "subject journals" are the main sources of information. Next in the order comes the Technical Reports/Bulletins, Annual Reports and Research Highlights published by the R & D units of the Coconut Research and Development Institutes in the world. Then comes the Proceedings of the seminars, conferences, symposia and workshops on coconut. Bibliographies on coconut are one of the useful information services. News letters also highlight important breakthroughs, salient features of the on-going and new research projects, market information and new arrivals on coconut literature. The availability of different source materials is discussed in detail in this section.

(a) Journals:

Though CPCRI is subscribing to 700 journals, this researcher could not see a single journal which deals exclusively with coconut. Indian Coconut Bulletin which was brought out by the erstwhile Indian Central Coconut Committee (ICCC) from 1973 to 1977 was one of the best publications in the world on Coconut Research and Development. The present publication of the Coconut Development Board - 'Indian Coconut Journal' a monthly, is a poor substitute for the Indian Coconut Bulletin in all respects including the quality of production and it now falls in the category of a semi-technical journal and not as a standard scientific journal. The Philippine Journal of Coconut Studies (PJCS) published by the Philippine Coconut Research and Development Foundation is an excellent journal on this crop. Unfortunately, this journal had disappeared for quite sometime and it is a happy news for the coconut researchers that the PCJS has again appeared for their services. Similarly, two journals namely, Ceylon Coconut Quarterly and Ceylon Coconut Planter's Review, published by the Coconut Research Institute of Sri Lanka though very useful to the researchers, have become most irregular for some reason or other. Among other standard journals only a few give fairly good coverage on coconut research. These are: (1) Oleagineux - a monthly published in French/English by the Institute de Recherches pour les Huiles at Oleagineux (IRHO), Paris, France; (2) Journal of Plantation Crops - a half yearly, published in English by the Indian Society for Plantation Crops (ISPC), Kasaraod, India; (3) Pemberitaan - a quarterly,

published in Indonesian/ English by "Lembaga Panelitian Tanaman Industri" Indonesia; (4) The Planter - monthly, published by the incorporated society of Planters, Malaysia and (5) Principes - a quarterly, published in English by the Palm Society Inc. Florida, USA. apart from these, JAOCS - The Journal of American Oil chemists' Society - a monthly, publishes research papers on coconut oil chemistry and technology along with other edible oils.

(b) Technical Reports:

Among the Technical Reports, the Reports of the FAO Technical Working Party on Coconut Production, Protection and Processing is very useful to the reseachers. The Philipine Coconut Authority have also brought out several important publications on coconut production, utilisation and technology. Similarly, the CPCRI has published quite a good number of Technical Bulletins on this crop. Almost all the coconut growing countries have R & D units on coconut which bring out Annual Reports providing some information on the subjects of interest to the researchers.

(c) Proceedings:

There may be quite a few proceedings on coconut, but as far as this researcher's knowledge goes, those which are widely referred to are "The Proceedings of the International Conference on Cocoa and Coconuts" held at Kuala Lumpur in 1971 and 1978, published jointly by the Malaysian Agricultural Research and Development Institute (MARDI) and the Incorporated Society of Planters. The Proceedings of the International Symposium on Coconut Research and Development held at CPCRI, Kasaragod in 1976 has just come out with the title "Coconut Research and Development". The Proceedings of the Annual Symposium on Plantation Crops commonly known as 'PLACROSYM' have published several papers on coconut in each of its series. Already five such series are brought out by the organisers of PLACROSYM. The CPCRI and ISPC are among the organisers.

(d) Bibliographies:

The IRHO published an annotated bibliography on coconut in 1976 under the title "LA NUTRITION DU COCOTIER" which covers the period 1900 to 1974. There are 457 references in this. The CPCRI also published an annotated bibliography on Coconut in 1976 which covers the period 1936 to 1976 and this was revised in 1981 supplementing the literature search out upto 1979. This bibliography contains 3771 references. The Coconut Information Centre (CIC) of Sri Lanka has brought out 13 bibliographical series on coconut covering upto 1980 where 2708 references have been quoted. Similarly the Co-ordination and Documentation Centre of the Philippine Coconut Authority has published five volumes of "Abstract Bibliography on Coconut" covering the period 1961 to 1978. The total number of references cited in these five volumes comes to 3267. There are two bibliographies on coconut which have been published in Brazil. They are (1) COCO Levantamento bibliographies obtido das fontes de referencia existentes na DIBID by CEPLAC - DEPAD, Divisas de Bibliograpia e Documentacio, II heus- Bahia (1978) and (2) Bibliografia Internacional Do COCO, Cocos nucifera L, by EMBRAPA, BRASIUA, DF (1980).

(e) News letters:

The COCOMUNITY - a bi-monthly publication of the Asian and Pacific Coconut Community (APCC) and the COCONIS- a quarterly publication of the CIC are very useful Newsletters to the coconut researchers. Apart from these Newsletters, the APCC's Quarterly Supplement - "The COCOMUNITY" publishes very good research review articles on coconut.

(f) Trade Reports:

The trade and market reports on coconut published by the International Trade Centre (ITC), United Nations Industrial Development Organisation (UNIDO) and Tropical Development and Research Institute (TDRI), earlier known as Tropical Products Institute (TPI),are some of the useful publications for the coconut economists and technologists. International Coconut Development Association (ICDA),Sweden has brought out only a few issues of "Coconut Industries" during 1981-82 with very interesting marketing and processing information. Then it has been stopped for unknown reasons and is now being substituted by "Coconut Wireless".

(g) Coconut Production and Trade Statistics:

Coconut Production and Trade Statistics are very much in demand from the concerned planning and policy making bodies, coconut development agencies, oilseeds and vegetable oil trade circles and industries, economics and statistics divisions of the coconut R & D units and various public sectors including banking institutions. The major source of information in these areas is the FAO Statistics Division. FAO 'Production Year Books' and 'Trade Year Books' provide country-wise statistics on coconut and copra production, exports and imports of copra and coconut oil in the world.FAO also supplied computer print-out on coconut statistics dealing with the area, production, yield,export,export earnings, unit value, imports, import value of coconut and its products. FAO Monthly Bulletin of Statistics als serves this purpose. However, detailed coverage of coconut trade statistics is found in the "Oil World Bulletins" published from the USA. The United States Department of Agriculture (USDA) also supplies valuable information on this suject through one of its quarterly periodicals "Oil Crops: Outlook and Situation Report".

The APCC Statistics Division collects information from the statistics wings of the coconut/copra Boards of respective APCC member Countries; other country reports, market and price bulletins emanating from the international institutions, and brings out Statistical Year Book on Coconut periodically. The latest statistical year book of APCC is the 1979 compilation, that came out in January 1981. However, the APCC Newsletter, and quarterly "COCOMUNITY" disseminates market and price information on coconut and its products regularly.

As far as India is concerned, the Directorate of Economics and Statistics, Ministry of Agriculture, publishes coconut statistics in its monthly journal "Agricultural Situation in India", and special reports and Bulletins. similarly, the Department of Commercial Intelligence and Statistics, Ministry of Commerce publishes trade

statistics relating to coconut and its products through its publication "Indian Trade Journal. Indian Coconut Journal also reports marketing, price and trade information regularly.

Types of services available:

The CPCRI Library-cum-Documentation Centre subscribes to all important journals on coconut and other plantation crops, besides almost all standard and reputed journals on agricultural and biological sciences that are appearing in English in the World. all the foreign journals are air-lifted for timely servicing of the Institute's researchers. Back volumes in some cases have been procured at a huge cost for the benefit of users. This Library also subscribes to the "Current contents" - Agriculture, Biology and Environmental Sciences" - the best title page service available in the field of scientific information in the world. In addition to this, the centre has just started its own "Contents Page Service" to supplement "Current Contents" for increasing the awareness among the researchers. The Library also subscribes to AGRIS/AGRINDEX emanating from the International Information System for the Agricultural Sciences and Technology under the FAO.

Coming to the abstracting services, the CPCRI Library is a regular subscriber to the "Biological Abstracts", and Chemical Abstracts" in addition to all the Abstracting journals published by the Commonwealth Agricultural Bureaux (CAB). Even under the space and financial constraints, these services are continuing. Again, because of the scattered nature of the Institute over its 14 Research Stations and Centres, the Institute has to subscribe to multiple copies of many of the research journals, abstracting journals and indexing journals at a prohibitive cost, only to provide efficient information services to its scientists. The major irritation here is that very little information comes out in the field of coconut research.

This Library has procured all the books on coconut in English that are available in the world publication market (of course they are not more than two dozens in number). Same is the case with the coconut proceedings. So far as the technical reports and bulletins are concerned, access to information generated at the different research points within the country is not as satisfactory as it ought to be. Many information are not published. They are in the researcher's project file only. In such situation, the research system becomes inefficient as it does not prevent the researchers from duplicating each other's work and lead to a colossal waste of valuable resources in a developing country like India. Moreover, the CPCRI Library does not possess most of the reports originating from the overseas R & D units on coconut. Their potential users are quite unaware of their existence and valuable information source is therefore, wasted. Sometimes the cost of those reports is astronomically high. The Librarian-cum-Documentation Officer is making sincere efforts to receive as many technical reports as possible from various Institutions on exchange basis and we are hopeful about the outcome of this attempt.

In the matter of coconut statistics and market information, the situation is most disappointing. There is a great deal of resistance to flow of information between different countries and organisations and also within an organisation itself. One has to search for several source points to complete the time series data, still then this cannot be completed due to gaps in between. The serious problem in this course is the discrepancy in the data which cannot be reconciled. The country source data, FAO data and the USDA data on the same matter are at variance. Even the units of measurement differ from one source to the other. In the case of coconut production for example, India quotes in number of nuts, while FAO quotes in tonnes. Then the data concerning a particular year becomes available only after the lapse of two to three years which loses its usefulness to a great extent. In brief, the available information services in coconut statistics are not only unreliable but also insufficient in coverage. This is true for many other crops to some extent. As long as this situation is not reversed the Economist will serve only as the postmortem physician and not as the health doctor for the nation's economy. The wrong lies not at the information delivery network but at the information generation network. Though this fact is known to everybody, no serious attempt has been made to correct this malady.

Researchers' Expectations:

The coconut researchers do not blame the information delivery department of the CPCRI for the problems that are beyond the control of their Library tower. But they feel very much unhappy about its quality of service. As the researchers are overloaded with the time bound projects coupled with some kind of administrative and research management activities including the responsibility of transfer of technology either under the Operational Research Project or Lab to Land Programme, they have very little time to sit and search their references from a vast volume of collections which pile up every day. Moreover, the information materials available in the existing network which have direct relevance to their respective work are so scant that the 'Try to find System' produces a sense of futility among the scientists. On the other hand, the institute authorities as well as the information service staff of the CPCRI feel that the service created and offered to their researchers are severely under-utilised. About three years ago the CPCRI Library conducted a user survey which reveals that there is a need for evaluation of users' satisfaction in this institute and this researcher proposes to undertake the study.

Need for a new approach:

Confucius said "The essence of knowledge is having it, to apply it". In this context the CPCRI Library fulfils, at present only half of the information objective "having it", and the other half "to apply it", is yet to be strengthened. Accordingly, the CPCRI Library should have the following:

1. "Supply Push" service through SDI:

The researcher desires to move with the same speed with his counterparts in other parts of the world with the assistance of the SDI, or the supply-push- "Here-it-is" system exactly tailored to meet the specific research needs of each user.

2. Freely available xerox/photocopying service:

A reprint or photocopy of an article is very much useful to the researcher who is directly concerned with that article. In India, most scientists cannot afford to spend their own money for photocopying service. Keeping this in view, xerox facility should be freely available to the scientists on the basis of genuine needs without considering the costs involved. This will be the biggest help a library can render to its clients.

3. Air-conditioned reading room:

In the tropical humid climate of the west coast of India, where the main coconut research station is located, an air-conditioned reading room will certainly attract these scientists to carry out their serious studies in a cool and tranquil atmosphere.

4. Display of Library graphics:

The use of proper library graphics will enhance the efficiency of user-service, by enabling easy location of books and journals by the reader himself, even if sorters are not available to attend to "call-slips".

5. Sharing knowledge:

In India, the total drain of resources in the form of foreign exchange on account of foreign journal subscription alone would come to some thousand millions of rupees. In a sense, this developing country helps the publication industries of advanced countries, due to lack of sharing knowledge with the sister institutions outside and within the country. A close contact with institutions like IRHO,UPLB, MARDI, CRB etc. at all levels should be encouraged for deriving mutual benefits through expansion of information channels.

Outlook:

It has been a most appropriate step on the part of the International Development Research Centre (IDRC), Ottawa,Canada in coming forward to assist in the activities of the Coconut Information Centre (CIC), established under the Coconut Research Board of Sri Lanka for information sharing among the coconut producig countries in the world. Among others, CPCRI is a participating unit of the CIS. The coconut researchers of CPCRI and other Coconut Research Centres in India have the opportunity of receiving its Newsletter COCONIS; computerised information retrieval and photocopy reprints.

Since CIC is still in its infancy, it has created a limited impact, but promises a better future in sharing of the information through proper co-ordination with India's Agricultural Research Information Centre (ARIC) under the ICAR which has now been allotted a 'Computer Terminal' for improving the information package with exceeding speed and flexibility. India's communication satellite INSAT-IB also spells hope to her millions of information users. Indian coconut workers will be immeasely benefitted, if the information net-working could be strengthened at CPCRI by the international support from IDRC, in establishing computerised data-base of information storage and retrieval.

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