CHAPTER III- CSIR LABORATORIES’ AND THEIR LIBRARIES

This chapter covers background of information about CSIR. Also a list of all CSIR laboratories is given along-with detailed description about selected CSIR libraries for the present thesis.

I. Introduction

Council of Scientific & Industrial Research (CSIR) is the premier Industrial Research Organisation. It was formed in 1942 by a resolution of the Central Legislative Assembly. It is funded mainly by the Science and Technology, Ministry of India and is one of the world’s largest publicly funded Research & Development Organizations, having linkages to academia, other organizations and industries. Although CSIR is mainly funded by Science and Technology Ministry, Government of India, it operates as an autonomous body registered under the Registration of Societies Act of 1860.

The CSIR is the National Research and Development (R&D) organization providing scientific and industrial research for India’s economic growth and human welfare. It has a country-wide network of thirty eight Laboratories and eighty Field Centers covering fundamental and applied R&D in all the areas of science and technology barring atomic research, developing and nurturing S&T human resource for the country. The mission of CSIR is to provide scientific/industrial R&D that
maximizes the economic, environmental and societal benefits for the people of India (CSIR, 2009).

1.1 Major Areas- The Research and Development (R & D) activities of CSIR include various fields such as aerospace engineering, structural engineering, ocean sciences, molecular biology, metallurgy, chemicals, mining, food, petroleum, leather, and environment. The mission of CSIR is to provide scientific and industrial R & D that maximizes the economic, environmental and societal benefits for the people of India. The function assigned to CSIR was all embracing in the matter of initiation, promotion and co-ordination of scientific and technological research in India (Saha, 1969).

1.2 CSIR Achievements- The unique mix of multi-disciplinary expertise, sound technical knowledge and talent for innovation that characterizes CSIR, has enabled it to emerge as a global research player. CSIR’s footprint covers sectors as diverse as Aerospace, Biotechnology, Chemicals, Drugs & Pharmaceuticals, Energy, Food & Food Processing, Information Dissemination, Leather and Metal, Minerals & Manufacturing.

1.3 CSIR Electronic Journals Consortium- The CSIR is a premier scientific agency having one of the largest information resource bases in the country. It ought to take a lead in evolving the first ever consortium of this size in the country. CSIR libraries cumulatively spend about Rs. 30-40 Crore per year on books and journals. Individual laboratories
spend between Rs. 30-150 lakhs per year on books and journals. CSIR as a whole gets more than 2500 unique titles of foreign journals. Even though the magnitude of CSIR budget was already considered quite high, libraries were finding it difficult to sustain their resource building activity at, a predetermined level, and even to add the very few new titles. The changing scenario called for reengineering of library services which would entail (Narayna & Goudar, 2004):

- Consortium building and electronic licensing
- Use of IT as an enabling technology

The Council is responsible for the research and development in science and technology. The major objectives of CSIR consortia is to strengthen CSIR library resources by pooling, sharing and providing electronic access to scholars and scientists of CSIR labs and to promote the culture of electronic access. National Institute of Science Communication and Information Resources (NISCAIR) and other Laboratories of CSIR worked to form "Consortium for CSIR Laboratories for accessing e-journals". In June 2002, CSIR entered into an agreement with M/s. Elsevier Science, one of the largest international publishers of Science & Technology e-journals for having access to its 1,700 Science & Technology journals among all the laboratories/units/centres of CSIR. NISCAIR is the implementing agency for CSIR e-Journals Consortia by the CSIR. During the second year of operation of the CSIR e-Journals Consortium, the major activity was to monitor the use of the facility and
promote usage among the CSIR laboratories. NISCAIR’s continued efforts have enabled significant increase in the usage of e-Journals by CSIR laboratories. The CSIR has developed a CD-ROM based electronic library information system which provides ability to reproduce and search for published information (Michie, 1995).

1.4 Publications- Popularization of science among the masses is a major programme of NISCAIR. For the purpose of spreading awareness about scientific developments and creating a scientific temper among current generation of youth, the Institute publishes three well-circulated popular science journals, i.e. Science Reporter (English monthly), Vigyan Pragati (Hindi monthly), and Science ki Duniya (Urdu quarterly) apart from a number of popular science books. The Institute also focuses on the R&D activities of CSIR labs through its newsletters—CSIR News and CSIR Samachar respectively.

1.5 List of CSIR Laboratories

The Council of Scientific and Industrial Research (CSIR) established in 1942, is India’s largest research and development organization. It has 38 laboratories spread over the length and breadth of the country. These are as follows (Michie, 1995) (CSIR Annual Report, 2010)

1. Central Building Research Institute (CBRI), Roorkee (Uttaranchal)
2. Institute of Genomics and Integrative Biology (IGIB), Delhi
3. Centre for Cellular & Molecular Biology (CCMB), Hyderabad (Andhra Pradesh)
4. Central Drug Research Institute (CDRI), Lucknow (Uttar Pradesh)
5. Central Electrochemical Research Institute (CERI), Karaikudi (Tamil Nadu)
6. Central Electronics Engineering Research Institute (CEERI), Pilani (Rajasthan)
7. Central Food Technological Research Institute (CFTRI), Mysore (Karnataka)
8. Central Fuel Research Institute (CFRI), Dhanbad (Jharkhand)
9. Central Glass and Ceramic Research Institute (CGACRI), Kolkata (West Bengal)
10. Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow (Uttar Pradesh)
11. Central Leather Research Institute (CLRI), Chennai (Tamil Nadu)
12. Central Mechanical Engineering Research Institute (CMERI), Durgapur (West Bengal)
13. Central Mining Research Institute (CMRI), Dhanbad (Jharkhand)
14. Central Road Research Institute (CRRI), New Delhi
15. Central Scientific Instruments Organisation (CSIO), Chandigarh
16. Central Salt & Marine Chemical Research Institute (CSAMCRI), Bhavnagar (Gujarat)
17. Institute of Himalayan Bioresource Technology (IHBT), Palampur (Himachal Pradesh)
18. Indian Institute of Chemical Biology (IICB), Kolkata (West Bengal)
19. Indian Institute of Chemical Technology (IICT), Hyderabad (Andhra Pradesh)
20. Indian Institute of Petroleum (IIP), Dehradun (Uttaranchal)
21. Indian Institute of Technological Research (IITR) Lucknow, (Uttar Pradesh)
22. Institute of Microbial Technology (IMT), Chandigarh
23. National Aerospace Laboratories (NAL) Bangalore, (Karnataka)
24. National Botanical Research Institute, Lucknow (Uttar Pradesh)
25. National Chemical Laboratory (NCL), Pune (Maharashtra)
26. National Environmental Engineering Research Institute (NEERI), Nagpur (Maharashtra)
27. National Geophysical Research Institute (NGRI), Hyderabad (Andhra Pradesh)
28. National Institute of Oceanography (NIO), Goa
29. National Institute of Science Technology & Development Studies (NISTADS), (New Delhi)
30. National Institute of Science Communication and Information Resources (NISCAIR), (New Delhi)
31. National Metallurgical Laboratory (NML), Jamshedpur (Bihar)
32. National Physical Laboratory (NPL), (New Delhi)
33. Regional Research Laboratory (RRL), Bhopal (Madhya Pradesh)
34. Regional Research Laboratory, Bhubaneswar (Orissa)
35. Regional Research Laboratory Jammu, (Jammu & Kashmir)
36. Regional Research Laboratory, Jorhat (Assam)
37. Regional Research Laboratory, Thiruvananthapuram (Kerala)
38. Structural Engineering Research Centre (SERC), Chennai
2. CSIR Laboratories in Delhi

2.1 National Institute of Science Communication and Information Resources (NISCAIR), New Delhi

2.2 National Physical Laboratory (NPL), New Delhi

2.3 National Institute of Science Technology & Development Studies (NISTADS), New Delhi

2.4 Central Road Research Institute (CRRI), New Delhi

2.5 Institute of Genomics and Integrative Biology (IGIB), Delhi

Now in the following pages somewhat detailed discussion will be made about Laboratories’ Libraries under study.

2.1 NATIONAL INSTITUTE OF SCIENCE COMMUNICATION AND INFORMATION RESOURCES (NISCAIR), NEW DELHI

2.1.1 Introduction

National Institute of Science Communication and Information Resources (NISCAIR) came into existence on 30 September 2002 with the merger of National Institute of Science Communication (NISCOM) and the Indian National Scientific Documentation Centre (INSDOC). Both NISCOM and INSDOC, the two premier institutes of the Council of Scientific and Industrial Research (CSIR), were devoted to dissemination and documentation of S&T information.

NISCOM had been in existence for the last six decades (first as two Publication Units of CSIR, which were merged to form the Publications
Division, which was later renamed as Publications & Information Directorate and in 1996, as NISCOM). Over the years, NISCOM diversified its activities, and through a host of its information products, comprising research and popular science journals, encyclopedic publications, monographs, books, and information services, it had been reaching out to researchers, students, entrepreneurs, industrialists, agriculturists, policy planners and also the common man.

INSDOC came into being in 1952 and was service engaged in providing S&T information and documentation services through myriad activities, such as abstracting and indexing, design and development of databases, translation, library automation, providing access to international information sources, human resource development, consultancy services in setting up modern library-cum-information centers. INSDOC was also host to the National Science Library and the South Asian Association for Regional Cooperation (SAARC) Documentation Centre.

Now, with the formation of NISCAIR, all the above multi-faceted activities have been amalgamated, making NISCAIR, an institute capable of serving the society using modern IT infrastructure in a more effective manner and taking up new ventures in the field of science communication, dissemination and S&T information management systems and services. Broadly the core activity of NISCAIR will be to collect/store, publish and disseminate S&T information through a mix of
traditional and modern means, which will benefit different segments of society. The mission of NISCAIR is to become the prime resource centre of all information resources on current and traditional knowledge systems in science and technology in the country, and also to promote communication in science to diverse constituents at all levels, using the most appropriate technologies (NISCAIR, 2010).

2.1.2 Mandates of NISCAIR

- To provide formal linkages of communication among the scientific community in the form of research journals in different areas of Science & Technology (S&T);
- To disseminate S&T information to general public, particularly school students, to inculcate interest for in science among them;
- To collect, collate and disseminate information on plant and mineral wealth and industrial infrastructure of the country;
- To harness information technology applications in information management with particular reference to science communication and modernizing libraries;
- To act as a facilitator in furthering the economic, social, industrial, scientific and commercial development by providing timely access to relevant and accurate information;
- To develop human resources in science communication, library, documentation and information science and S&T information management systems and services;
➢ To collaborate with international institutions and organizations having objectives and goals similar to those of NISCAIR (Brochure of NISCAIR).

2.1.3 NISCAIR Services

a) **Electronic Publishing**- With the advancement in Information Technology, NISCAIR using newer tools, is producing many products on CD-ROM including Wealth of India, Indian Science Abstracts, National Union Catalogue of Scientific Serials in India.

b) **Print & Production**- NISCAIR is not only self-sufficient in composing/printing of its own publications including research journals, but also takes up similar specialized jobs of other CSIR laboratories/institutions, government agencies/departments and other organizations too using the state-of-the-art technology. Its clientele include Indian National Science Academy (INSA), Defence Research and Development Organisation (DRDO), Defence Science Technology (DST), Department of Scientific and Industrial Research (DSIR), Department of Biotechnology (DBT), Department of Ocean Development (DOD), National Bureau of Plant Genetic Resources (NBPGR), Indian Council of Agricultural Research (ICAR), Centre for Science and Technology of the Non-aligned (NAMS&T Centre), Indian Institute of Technology, Delhi, Ranbaxy Laboratories, Comptroller and Auditor General of India (CAG), India Meteorological Dept, Dept of Indian System of Medicines, etc. besides various CSIR labs. NISCAIR takes up editing, composing,
designing and printing jobs from its clients preferably in digitized form. Data entry is also carried out wherever necessary.

c) **Contents, Abstract and Photocopy Service (CAPS)** - Content, Abstracts and Photocopy Service (CAPS) is an innovative personalized information service provided by NISCAIR. Lists of over 7,000 core journals in various disciplines have been identified.

d) **Document Copy Supply Service (DCSS)** - NISCAIR provides Document Copy Supply Service to the Indian scientific community by supplying copies of articles from Indian and foreign journals at nominal charges.

e) **International Standard Serial Number (ISSN)** - NISCAIR is the National Centre for assigning ISSN numbers to serials published in India. Serials include journals, newspapers, newsletters, directories, yearbooks, annual reports & monograph series, etc.

f) **Foreign Language Translation Service** - NISCAIR provides translation of S&T documents from 20 foreign languages into English. The languages include Chinese, Czech, Danish, Dutch, French, German, Hungarian, Italian, Japanese, Norwegian, Polish, Portuguese, Rumanian, Russian, Serbo-Croatian, Spanish, Swedish, etc. The clients include National Laboratories, S&T institutes, R&D organizations, Corporate and Public Sector Undertakings, Universities, Research Scholars etc. NISCAIR provides reverse translation (English into foreign language) also.
**g) Bibliometric Services** - Bibliometric services are carried out for studying growth, development and spread of any area of research, and also for identifying centres of excellence, influential authors, etc. The services are useful for heads of departments / institutions, research planners, policy makers and individual scientist.

**h) Consultancy Services**

- In the areas of automation, modernization and reorganizations of libraries and information centers.
- In the design and development of specialized databases for organizations on turnkey basis.
- In the areas of editing, designing, production and printing.

**i) Desk Top Publishing** - Desk Top Publishing (DTP) being the backbone of any publishing house, NISCAIR has a strong DTP unit with latest computers, scanners, printers and specialized manpower. It undertakes not only the publications of NISCAIR, but outside jobs too on payment basis. ‘Quality’ is the motto of this unit.

**j) Inter-Library Loan (ILL) Service** - The library issues out its publications to the users of other libraries in Delhi through inter library loan service.

**k) E – Journals Access** - The library has started providing free access to electronic journals from 11 leading international publisher’s viz. Elsevier, Springer, American Institute of Physics, Blackwell, John Wiley, Cambridge University Press, etc.
2.1.4 CSIR E-Journals Consortium

CSIR e-Journals Consortium is a CSIR Network project with NISCAIR as the implementing institute. It aims at providing electronic access to international S&T journals to CSIR S&T personnel, thereby strengthening the facilities for pooling, sharing and electronically accessing the CSIR information resources in a cost-effective manner, and also for nucleating the culture of electronic access with a view to catalyzing the evolution of digital libraries (Biennial Report of NISCAIR, 2008-10).

2.2 NATIONAL PHYSICAL LABORATORY (NPL), NEW DELHI

2.2.1 Background Information

The National Physical Laboratory (NPL) is the premier CSIR research laboratory in India in the field of physical sciences, established on 4th January, 1947. The main aim of the laboratory is to strengthen and advance physics-based research and development for overall development of science and technology in the country. In particular, its objectives are: developing core competencies in standards, apex level calibration, engineering materials, electronic materials, materials characterization, radio and space physics, global change and environmental studies, low temperature physics, and instrumentation. Its main activities are:

- Research and development
- Consultancy
2.2.2 Library

a) KSK Library - K.S. Krishnan Library is the new name of NPL library. The library is named after K.S. Krishnan, the founder director of National Physical Laboratory. The KSK library heralds the transition of NPL library to an electronic library scenario. NPL Library has been providing library and information support to scientists for R&D pursuits. Over the years, it has developed a rich collection of scholarly books and journals for the purpose, specifically in the field of physics and related sciences (NPL, 2009).

Library provides library services such as photocopying service, electronic document delivery service, inter-library loan service, reference service and literature search. The library offers online access to full text journals under the e-consortium project of CSIR. It facilitate access to journals from various publishers i.e. Science Direct (Elsevier), Blackwell, Springer, American Institute of Physics (AIP), American Physical Society (APS), Wiley Inter science, John Wiley and sons, Oxford University Press, Royal Society of Chemistry, American Chemical Society as well as to their archives going back to 1995 in case of Elsevier science and 2000 onwards in the case of other publishers. From the year 2010, the Library has started providing access to intranet edition of Indian Standards. This service was made operational in NPL on 31st July 2002 with the very
aims providing access to Science Direct (Elsevier) group of journals and others w.e.f. February 2005 onwards.

In the year 2010, library has also installed 7 (Seven) dedicated computers in the library reading hall to provide access to electronic journals for walk-in users (who are mostly from various educational & research institutes). Library Reading hall is also having the high-speed wireless internet area (hot spot) where one can have wireless connectivity for one’s wi-fi enabled laptops (Annual Report of NPL, 2009-10).

2.3 NATIONAL INSTITUTE OF SCIENCE, TECHNOLOGY AND DOCUMENTATION STUDIES (NISTADS), NEW DELHI

2.3.1 Background Information

National Institute of Science, Technology and Development Studies (NISTADS), New Delhi is devoted to study of various aspects of interaction among science, society and state and exploring continuously the Interface between Science, Technology and Society. NISTADS is one of the 38 institutes/laboratories of the Government of India’s Council of Scientific and Industrial Research (CSIR), New Delhi. Research students enrolled in the Institute to obtain Ph.D. degrees from different universities. NISTADS has a vibrant visiting scholar’s programme, under which researchers from India and abroad are encouraged to spend time
at the Institute to make use of the available facility. The Institute has core competence in Science and Technology Policy Research and dedicated to the concern and problems of the developing countries. The research activity of the institute can be grouped under the broad programmes such as Intellectual Property Right (IPR) & development studies; Information technology and biotechnology (ITBT); Policy matters and ethical concerns; Innovation policy (InnP); Innovation & knowledge society (INKS); Technology & Integrated Assistance to Rural Artisans (TIARA); Sustainable development (SD); Science-technology-education Valuation Studies (STEVS); History & Philosophy of Science & Public Awareness of Science (HPS). The roots of NISTADS go back to August 1973, when the Council of Scientific and Industrial Research (CSIR) set up at its headquarters, a Centre for the Study of Science, Technology and Development (NISTADS, 2009).

2.3.2 Library

National Institute of Science, Technology and Development Studies (NISTADS) is one of the few research institutions devoted to the science technology studies (STS) in the country. The role of its library is further enhanced, as it has to act as national depository of literature in the area of Science Technology Studies. The Library uses Libsys Automation Software Package. The Libsys consists of modules on acquisition, cataloguing, circulation, serials and article indexing. Retrospective Conversion of bibliographic records has been completed. The database of
books available in the library is being updated on day-to-day basis with details of recently acquired books.

Library also acquired Intelligence, Faith Communication (INFAC) database on machine readable form and in hard bound form also. It contains industrial information, compact disk (CD) on first source of financials of 25,443 Indian companies, current contents: Social and behavioral sciences in CD format is one of the main sources of information available in the library, it enables access to more than 2000 social science journals for 51 rolling weeks. It is updated on weekly basis. It has also acquired all the 700 reports of the office of the technology assessment on CD. This set of six CDs covers about one lakh pages of the reports published till the date of closure of the office, and give additional advantage over the print form. It has a good collection of computer books, current reference books, on intellectual property rights, psychology and collection of Hindi books. Library is also a member of DELNET. It participates in resource sharing activity with other academic and research libraries within Delhi and out side. It also undertakes document delivery on request for out side scholars for their research work in the areas of specialization (Triennial Report of NISTADS, 2006-09).
2.4 CENTRAL ROAD RESEARCH INSTITUTE (CRRI), NEW DELHI

2.4.1 Background Information

The Central Road Research Institute (CRRI) was established in the year 1948 with the very mission to deliver high quality and globally acceptable research as well as consultancy services to the profession in the major areas of road and road transportation technology. It is a constituent laboratory of the Council of Scientific and Industrial Research, Government of India. CRRI has always been striving for quality and has successfully implemented Indian Standard Organization (ISO) Quality Management System. As an ISO Certified Institution, CRRI endeavours to develop a quality culture in R&D activities by adopting a well-disciplined approach for improvement in customer satisfaction. The major areas are (i) Pavement Engineering (ii) Geotechnical Engineering (iii) Bridge Engineering (iv) Traffic and Transportation Engineering including Safety and Environment (v) Highway Planning and Management (vi) Instrumentation for Highways and Bridges (CRRI, 2009).

On the basis of extensive field trials with the help of vast variety of infrastructural facilities including test tracks, various new techniques have been developed and formulated on codes of practice, guidelines and standard specifications for Bureau of Indian Standards and Indian Roads Congress in the areas of road materials, structural and geometric design of roads, road construction and maintenance management, traffic
engineering including safety and environment, bridges and geotechnical engineering, etc. Many of the techniques developed/patented by CRRI have already been taken up by industry for commercial production (CRRI Newsletter, 2010).

2.4.2 The Library

Prof. S.R. Mehra Library

Prof. S.R. Mehra Library provides documentation services to the scientists, engineers and administrators in the field of highways and transportation. The library has a vast collection of books, reference books, periodicals, technical reports, standards specifications, microfilms, maps CD-ROM databases, video cassettes, etc.

2.4.2.1 Services

The Library has been providing the following services:

a) **Current Contents**: It is a monthly documentation service in which content pages of selected periodicals received every month, are circulated to the scientists to keep them abreast of the latest information in their respective areas of specialization.

b) **Bibliographic Services**: Literature searches carried out and bibliographic services was provided to researches of CRRI and some outside organizations on various topics related to highway engineering and transportation during the year.
c) **Selective Dissemination of Information (SDI):** This service provides information on specific topics of interest to selected group in their specific areas of research.

d) **User Education and Training:** User education and training programmes were conducted to familiarize the users with the existing information sources & services, information retrieval techniques and technical writing (Annual Report of CRRI, 2009-10).

### 2.5 INSTITUTE OF GENOMICS AND INTEGRATIVE BIOLOGY (IGIB), Delhi

#### 2.5.1 Background Information

The Institute of Genomics and Integrative Biology (IGIB), a CSIR laboratory is a premier Institute carrying out research leading to generation of new knowledge and development of technologies in various areas of Biotechnology with a special focus on Genomics and Genome Informatics. The mission of IGIB is "To translate concepts developed in basic biological research to commercially viable technologies."

IGIB has re-oriented the earlier set-up of Center for Biochemical Technology (CBT) and has transformed itself from providing import substitutes in 1977 to reverse engineering and finally to knowledge providers in 2002. IGIB has positioned itself to play a very important and significant role globally, in the areas of Genomics and Bioinformatics. Over the years, IGIB has met the milestones set for it and
is fulfilling the expectations in research and development including software development for functional genomics. This has been made possible by the collective expertise in areas of Biochemistry, Cell Biology, Immunology, Molecular Genetics, Medical Sciences, Information Technology and not only at the Institute but also in different parts of the country through networking. It has judiciously utilized the vast and diverse genetic pool of India. IGIB has taken a leadership position in Indian Genome Variation Database (IGVdb), a networked taskforce project of CSIR (IGIB, 2010).

2.5.2 Mandates of IGIB: The mandate of IGIB is "Developing commercially viable knowledge and technologies for the new millennium."

- In the post genome sequencing era, IGIB has focused its efforts towards multi-disciplinary research in the areas of Genomics, Molecular Medicine including Allergy and Infectious Diseases, Bioinformatics and Environmental Biotechnology of high scientific impact leading to technological development and services relevant to the society, by collaborating with Medical Institutes, Universities and Industries.
- transfer knowledge and technologies, thus developed to customers / entrepreneurs.
- develop knowledge alliances with industries for commercialization of knowledge.
In the light of the CSIR mission and vision, IGIB endeavors to apply itself to provide Scientific & Industrial Research and Development activities that maximize the economic, environmental and societal benefits.

2.5.3 **Library**

IGIB Library is situated in Delhi University, so IGIB students have an easy access to Science library of Delhi University (within Campus). The library has a core collection of around 400 books and subscribes to core 60 scientific journals (Online+Print). In addition to their library, it has access to various journals through *CSIR e-journal consortium*. The collection of Hindi Books is also maintained in the library. These books are normally used by the administrative and technical staff and the institute as well. Daily newspapers and some magazines are also subscribed by the library for various types of users.

Library has two photocopiers, scanner, and printer in the library to cater to the needs of PhD. students and scientists. Exclusive four nodes are kept in the library for the use of the students and wi-fi is also fixed in the library, so that students are able to make use of their own Laptops in the library. The Library uses *Libsys Automation Software* Package for computerization of its activities.

2.5.3.1 **Services:**

- IGIB is having *J-gate Custom Content for Consortia (JCC)* access whereby online document delivery is taken care of.
➢ To provide Delhi Library Network (DELNET) it is actively used by students/Scientists of IGIB (Annual Report of IGIB, 2009-10).

3. CSIR LIBRARIES OF LUCKNOW

3.1 Central Drug Research Institute (CDRI), Lucknow

3.2 National Botanical Research Institute (NBRI), Lucknow

3.3 Indian Institute of Toxicological Research (IITR), Lucknow

3.4 Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow

3.1 CENTRAL DRUG RESEARCH INSTITUTE (CDRI), LUCKNOW

3.1.1 Background Information

Central Drug Research Institute (CDRI) is one of the few laboratories that were established in India right after its independence. CDRI is among the thirty-eight laboratories that are functioning under the aegis of the Council of Scientific and Industrial Research (CSIR) of India headed by the Prime Minister of the country as its president. CDRI was formally inaugurated on 17th Feb. 1951 by the Prime Minister of India, Pandit Jawahar Lal Nehru. The scientific achievements of the institute and its scientists and infrastructure capabilities built up by CDRI over the years have been appreciated far and wide (CDRI, 2010).

3.1.2 Activities

Research activities of CDRI are aimed at developing drugs, diagnostics and vaccines to cure and get rid of the ailments confronted by the
mankind in general and Indians in particular. With an aim to carry out focused works in various disease areas, the R & D activities of the CDRI have been categorized in various research areas. Each Research Area focuses on the design and development of drugs, diagnostics/vaccines related to the concerned disease group right from the synthesis of compounds up to regulatory studies and clinical trials. Research activities are broadly divided into three subgroups:

- Drug Discovery & Development
- Regulatory Studies
- Infrastructural Support Groups

### 3.1.3 Library

CDRI research is supported by a very modern, highly rich in collection and well managed Library. The books and journals available in the library are perfectly in tune with the requirement of current biomedical research. The collection in terms of books and journals among the best in their respective fields, are updated regularly. The materials on newly emerging fields are added on a very regular basis. The inception of CDRI Library dates back to 1951. With a small collection of about two thousand publications to start with, this library was primarily set up to meet the information needs of the Scientific & Technical Staff of the Institute. With the passage of time the library grew up at a higher pace. And, in order to cater to the ever increasing scientific and technological information needs of the professionals, it systematically and gradually
built up a specialized collection of reading materials, such as specialized books, periodicals, reference works, serials and various macro & micro-documents in the areas of Biomedical Research and Drugs & Pharmaceuticals. The CSIR has developed a CD-ROM based electronic library information system which provides the ability to reproduce and search for published information and colour brochures on the computer screen. The system integrates this information with online updating, e-mail and offline user information manipulation and storage.

The wealth of this highly specialized library began drawing the attention of the academic and R&D workers of other institutions in the city like Lucknow University, King Gorge's Medical College, Sanjay Gandhi Post Graduate Institute, etc. and outside the city from the Drug Industry and Research Organizations.

3.1.4 Services

a) **Current Awareness Publications**: National Information Center for Drugs & Pharmaceuticals (NICDAP) brings out the following three current awareness bulletins to keep the users abreast of the latest trends in the area of Drugs & Pharmaceuticals.

- **Drugs & Pharmaceuticals (Industry Highlights)**: It covers the status of Indian industry in a given therapeutic group and technological and industrial developments in the Drugs & Pharmaceuticals sector. The bulletin provides information on
Indian as well as global patents, parliamentary debate and industrial licenses in the country.

- **Drugs & Pharmaceuticals (R & D Highlights):** The bulletin provides global scan of R & D developments in the given Therapeutic group including new leads which are emerging in the area. Besides patent profiles of a few selected drugs, it also publishes recent developments in the area of natural products as well as biotechnological developments.

b) **Ocean Drugs Alert:** The quarterly bulletin is being brought out with the support of Department of Ocean Development (DOD). It includes selected abstracts of over 60 periodicals related to Ocean Drug Research.

c) **Bibliographic Services:** Bibliographies are compiled on request according to the users’ requirement.

d) **Document Delivery Service:** National Information Center for Drugs & Pharmaceuticals (NICDAP) meets the request for photocopy and provides backup services.

e) **Technical and Industrial Queries:** Subject specialists attend to queries of various natures on request.

f) **Patents Literature Search:** Exhaustive patent literature compilations on various drugs of major relevance have been made and published in Drugs & Pharmaceuticals-R&D Highlights.
g) **Inter Library Loan:** The member libraries of LUSLIC (Lucknow Special Libraries Consortium) use this facility to borrow books and periodicals, both loose and bound.

### 3.1.5 Online Access to Full text of Journals: E-journals

CSIR Library, with the help of the CSIR E-journal Consortium and also through its own internal resources, has made available the access to above four thousand e-journals to its internal as well as outside users, who visit the Library. The period of back file availability ranges from 5 to 25 years depending upon individual publishers (Annual report of CDRI, 2009-10).

### 3.2 NATIONAL BOTANICAL RESEARCH INSTITUTE (NBRI), LUCKNOW

#### 3.2.1 Background Information

National Botanical Research Institute (NBRI) is the premier national plant research center for India under the umbrella of CSIR known originally as Sikander Bagh, the legendary royal garden of the erstwhile Oudh kings who ruled the region during the 19th Century before it was taken over by the British in 1857. CSIR took over National Botanic Garden in 1953 and expanded the scope of the institute into multidisciplinary plant research centre and renamed it as the National Botanical Research Institute in 1978. NBRI is now an internationally well-known research center in India and it focuses on both basic and applied aspects of plant sciences. While working on Biodiversity,
Bioinformatics, Biomass Biology, Biotechnology, Conservation, Ethno pharmacology, Floriculture, Plant Physiology, Genetics & Plant Breeding, Molecular Biology & Genetic Engineering, Natural Product development, etc., it caters to the need of almost every aspect of plant research in South Asian Region in general and the country in particular. Both basic and applied research programmes in all the above said plant sciences are dealt by NBRI scientists. The institute offers consultancy and technology on various aspects of plant sciences including information technology. Its main research areas are National/Societal Missions on drinking water, environmental biotechnology, hazardous waste management, modeling and optimization (NBRI, 2010).

**3.2.2 Library**

NBRI Library is spread over on three floors containing books, bound Periodicals. Besides this Library have patents, Reprints, Botanical Gazettes, Microfilms and microfiche, Photocopies, Rare Books, Botanical archives, Food and Agriculture Organization’s (FAO's) Books and Biological Abstracts online on CD-ROM.

**3.2.2.1 Services**

a) *Botanical Archives*: A Botanical archives had been set up in the library of the institute. The Botanical Archive of the NBRI houses rare hand written manuscript in Persian and Arabic, illustration of plants dating back to the 18th century besides a host of other botanical literature of derive value.
b) **Resource Sharing**- Library receives 29 journals on exchange basis (resource sharing). The members of Lucknow Special Libraries Consortium (LUSLIC) in CDRI -feel happy to release the *UNION CATALOGUE OF CURRENT PERIODICALS*. LUSLIC member libraries for the users in Lucknow and outside Lucknow. The catalogue includes relevant data on all periodicals currently procured by 14 important special libraries and information centers, which are attached to various R & D institutions, industrial enterprises and some department of Lucknow University.

c) **Food and Agriculture Organization (FAO) Information Centre**- A Memorandum of Understanding (MOU) was signed between the Food and Agriculture Organization, Rome and the National Botanical Research Institute, Lucknow on 26th September 1994 by Mr. J. Poulisse, the FAO representative to India, and Dr. P.V. Sane, then the Director, NBRI. Under this agreement, NBRI will serve as a National Center for Food and Agriculture Organization (FAO) technical papers, books and Data Base. Information and literature will be available to User & Organizations and other citizens. This information Center is housed in the NBRI Library (NBRI Newsletter, 2011).

NBRI also provides special services such as:

- Internet & E-mail Services to the scientific staff of the Institute.
- Online search facilities for Electronic journals.
Online search facilities for Biological Abstracts & on CD ROM from 1995 to 2002.

Bioinformatics

The NBRI Library provides some other services also like Reprographic services, Inter Library Loan facilities, Acquisition of reprints, Photocopying service from NISCAIR, New Delhi, Current Awareness Service, Book Binding, Reference Service, Lamination etc (Annual Report of NBRI, 2009-10).

3.3 INDIAN INSTITUTE OF TOXICOLOGICAL RESEARCH (IITR), LUCKNOW

3.3.1 Background Information

Indian Institute of Toxicology Research (IITR) (formerly: Industrial Toxicology Research Centre, ITRC), Lucknow, a constituent laboratory of the Council of Scientific & Industrial Research, was established in 1965. IITR undertakes research in niche areas of toxicology. These include the impact of industrial and environmental chemicals on human health and ecosystem, and environmental monitoring of pollutants in air, water and soil. The institute also helps regulatory bodies formulate/amend guidelines for safe use of chemicals/products, and ensures benefits that the common man. The motto of the laboratory is "Safety to Environment & Health and Service to Industry" (IITR, 2010).
3.3.2 Objectives

The objectives are as follows:

- Identification of occupational health hazards due to exposure of chemicals in industries, mines, agricultural fields and general environment by undertaking health and environmental surveys.
- Studies for working out the mode of action of toxic chemicals/pollutants.
- Development of simple/rapid diagnostic tests for disorders caused by industrial and environmental chemicals.
- Safety evaluation of chemicals used in industry, agriculture and everyday life.
- Suggest remedial/preventive measures to safeguard health and environment from pollutants.
- Collection, storage and dissemination of information on toxic chemicals.
- Human resource development to deal with industrial and environmental problems.

3.3.3 Library

Library and Toxicology Information Centre of IITR serves as an excellent apex information resource in the field of toxicology in the country. This Centre provides information on toxic chemicals and their effects on the environment and human, their management, regulation, etc. to individuals, universities private and public sector organizations,
regulatory agencies and government organizations. Library has a collection of books, journals, reports on varied scientific topics— from Science and Technology to microbiology, from biochemistry to environmental health are available along with: Documents of the International Agency for Research on Cancer (IARC), World Health Organization (WHO), Food and Agriculture Organization (FAO), Environmental Protection Agency (EPA), Organization For Economic Cooperation and Development (OECD), International Register of Potentially Toxic Chemicals (IRPTC), Institute of Peace and Conflict Studies (IPCS), International Labour Organization (ILO), Bureau of Indian Standard (BIS); Reference sources like Handbooks, Directories, Encyclopedia and Directories; Databases on CD-ROM: POISINDEX, CHEMBANK, ASTM Standards.

Library has subscribes International and National current periodicals in the field of toxicology. The core journals of toxicology like Toxicology & Applied Pharmacology, Toxicology Letters, Environmental Research, and Archives Environmental Contamination Toxicology are available from vol. 1 to the present. Under the Electronic Information Facility the access to full text e-journals over 3500 nos. published by Elsevier, Blackwell, Wiley, Oxford, University Press, American Chemical Society, Springer, Cambridge University Press, Royal Society of Chemistry, Taylor & Francis and Emerald are being provided to all the scientists & technical staff of the institution on their desk-top computers.
The laboratory has established linkage with several international agencies like World Health Organization (WHO), United Nations development programme (UNDP), United States Environmental Protection Agency (USEPA) and United States Food and Drug Administration (USFDA) and is serving as the National correspondent of International Registry of Potentially Toxic Chemicals of United Nations Environment Programme (UNEP).

With the help of several databases on compact disks, library handled various technical inquiries received from industries, Government and Non-governmental Organizations (NGOs) seek information or toxicological effects of chemicals on the environment, management of poisoning cases caused by various poisons/chemicals and regulatory toxicology information etc. Status reports on toxicology of different chemicals are also prepared on demand.

3.3.4 **ENVIS:** Environmental Information System (ENVIS) was established in the Institute in January 1984 in the area of information related to toxic chemicals. ENVIS, in association with the Ministry of Environment & Forests, Government of India, New Delhi and other ENVIS Centres, builds up a repository of information and its dissemination. It prepares detailed toxicity profiles of chemicals relevant to the country; maintenance of a toxicological information base; and builds up of storage, retrieval and dissemination capabilities (Annual Report of IITR, 2009-10).
3.4 CENTRAL INSTITUTE OF MEDICINAL AND AROMATIC PLANTS (CIMAP), LUCKNOW

3.4.1 Background Information

Central Institute of Medicinal and Aromatic Plants (CIMAP) is a multi-disciplinary R & D Institute dedicated to the cause of medicinal and aromatic plant research, cultivation and business. CIMAP has its foot prints in different agro climatic zones of India in the form of its Resource Centers (CRC) and Resource Points (CRP). The mission of the institute is to be the ultimate in green technologies for better health and life.

3.4.2 Research & Development (R&D) Areas

- Conservation and utilization of genetic resources of medicinal aromatic plants;
- Bioprospection & development of technologies for therapeutic, neutraceutical, agrichemical & health care product;
- Transforming R & D leads into technologies and products;
- Bio-village approach for mission programme on technology dissemination in geranium, patchouli, Artemisia annua, rose, mints, rosemary and cymbopogon grasses;
- Development of improved varieties and agro-technologies for priority plants;
- Plant genomics and biotechnological improvement in Catharanthus, withania and Mentha Species;
➢ Plant tissue culture technology for developing high throughput regeneration and secondary metabolite production;
➢ Integrated nutrient and pest management strategies leading to near organic farming;
➢ Basic research in selected medicinal and aromatic plants for future exploitation (CIMAP, 2010).

### 3.4.3 Library

Library continued to support the Research & Development activity of the institute by offering various services, such as acquisition of knowledge resources in the form of books and learned periodicals, current awareness service, reprography support to internal as well as outside visitors, lending and borrowing of research document under inter-library loan.

In order to extend the services and disseminate the information electronically, library is moving towards automation of library. To start with, library has initiated Current Content Service (CCS) for its scientists and acquired four International electronic databases. The electronic access of online journals made available by CSIR e-journal consortium was maintained and to enhance the usage, a workshop was also conducted for the accessibility of e-journals. The internet accessibility to more than 5 users simultaneously in user’s bay was also maintained.

The Library has *publications* like Books and Monographs, JMAPS, Farm Bulletins, News Letter and Annual Reports, New Publications, Map
Knowledge cards, CDs and Bibliographic databases on CD-ROM such as AGRIS, AGRICOLA, MEDLINE, Biotechnology Abstracts, and ALTMEDEX.

Ongoing activities of the center includes soft and hard data access retrieval and analysis, online and off-line searches, publication of journals, farm bulletins, books, monographs, catalogues, directories, bibliographies, education and training on an average nearly 200 users from CIMAP and nearby institutions use this center (Annual Report of CIMAP, 2009-10).
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