

II-G. TECHNOLOGY INFORMATION FACILITATION PROGRAMME

1. PREAMBLE

Technology Information and Facilitation Programme (TIFP) has the broad objective of generating endogenous capacities for the development and utilization of digital information resources to facilitate accelerated S&T research. It endeavors to ensure that Information and Communication Technologies (ICT) are fruitfully used in all the sectors of development and facilitate collaborative research among industries and institutions. The scheme is being implemented as a co-operative and collaborative venture and built around the existing infrastructure, wherever possible. The strategy concentrates in facilitation of Indian content on S&T, avoid duplication of efforts, allow minimum overlapping and maximum utilization of existing facilities.

2. OBJECTIVES

The specific objectives of the programme are designed to:

- Develop appropriate endogenous information capacities to support R&D activities
- Support the production of local content and to promote capturing of indigenous knowledge base
- Promote information and knowledge networking at local, regional and national levels to facilitate flow and sharing of information resources
- Support education, training and R&D in digital content development and utilization
- Promote national and international cooperation in related areas

The critical areas of focus during Eleventh Plan under the programmes would be on

content development and delivery of nationally available science and technology information and improving the technical competency of persons involved in information handling and delivery.

3. ACHIEVEMENTS

The specific achievements of the programme during the period of report are:

3.1 Promotion of Content Development

Multimedia database of available Pest Management Technologies of major oilseeds and pulse crops of Central India (Jabalpur)

The objective of the project of Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur is to develop multimedia database of available Pest Management Technologies of major oilseeds and pulse crops of Central India. The software will act as a research and extension tool to provide ready information on available pest management technologies to farmers. The multimedia feature of the software will assist in quick and easy identification of major pests of crops during the growing/off season. It would also help in adopting result oriented and sustainable pest management technologies and in increasing the total crop production of the region and improving the economic status of the farmers. The project has been successfully completed and the details are available at <http://jnkvv.nic.in/IPMProject/ipm-home.html>.

Computerized botanical database on wild ornamental plants of Himalayas (Solan)

The project of Dr Y S Parmar University of Horticulture & Forestry, Solan, Himachal Pradesh is aimed at preparing a database on

wild ornamental plants of Himalayas. Important floral/medicinal resources have been documented. The database would also help to assess the national wealth in the form of natural resources by knowing the exact position of plants having economic uses. The project has been successfully completed.

Development of digital image database of Bishnupur terracotta art and sculpture and Traditional design of Potchitra, Baluchori & Madhubani (Kolkata)

Under the project, the CALIBNET Society, Jadavpur University, Kolkata developed a database of available literature and photographic images on Bishnupur terracotta art and sculpture and traditional design of Potchitra, Baluchori & Madhubani and would be hosted on Internet. This database has not only offered a database on Terracotta and Temple architecture but also provided a pictorial view of the present state of this invaluable evidence of our heritage. The project has been successfully completed and the details are available at <http://www.bankuraonline.in>

Preparation of Database on Metallo-pharmaceuticals (Pune)

The project of CSIR Unit of Research and Development of Information Products (URDIP), Pune focuses on research that bridges the areas of inorganic chemistry and medicine. The user-friendly database would be designed to search via metal name that can provide list of all medical conditions where the metals are used for treatment with the complete metal profile covering details like modern metallo-complex medicines and traditional uses of the metal in the form of bhasmas, various stages in preparation, medicinal properties, dosage, and *in-vitro*, *in-vivo*, clinical trials and toxicity studies of metals. The project is nearing completion.

Floral potential of J&K State: Survey and Documentation (Srinagar)

The proposal from Department of Library and Information Sciences, The University of Kashmir, Srinagar, J&K aims i) to survey flora of the state having medicinal, aromatic and economic values from both secondary and primary sources, ii) to create digital products/objects embedded with rich information content of indigenous knowledge and linkage for national and international content, iii) to host the database on the server for the use of entrepreneurs, researchers, etc. and iv) to populate data on continual basis from the state. The project is under progress.

Indian Wood Insect Database - a Database on diversity of indigenous and exotic wood insects/pests in India (Bangalore)

The proposal on Indian Wood Insect Database- a Database on diversity of indigenous and exotic wood insects/pests in India from Institute of Wood Science and Technology, Bangalore aims to make an illustrated database of Indian wood insects, tree species wise by collecting information from all available records and insect specimen collections/museums in different institutions of India and add new information by assessing the current status of diversity of wood inhabiting insects in indigenous and exotic trees and their timber and timber products. The project is under progress.

Design and Development of on-line database on Mycorrhiza (New Delhi)

The proposal on Design and Development of on-line database on Mycorrhiza from The Energy Resources Institute, New Delhi aims to design and develop a comprehensive on-line database on mycorrhiza-related literature; enable open access to the database, including abstracts and bibliographies, and open-access full-text research articles; directory of

mycorrhiza scientists in Asian region; and facilitate retrieval of current research findings and development; promote mycorrhiza research among Indian scientists, agriculturists, students and mycorrhizologists. The project is under progress.

Development of Decision Support software System for Cereals, Millets, Pulses and Tuber crops & establishment of an Agricultural Digital Information centre (Trivandrum)

The proposal from College of Agriculture, Vellaveni, Trivandrum aims to develop a Decision Support System for identified Cereals and millets namely Wheat, Maize and Sorghum incorporating relevant aspects like Crop Protection System, Fertilizer Recommendation System, Cultivation practices, Water Management System and Implement Selection with visuals, multimedia and other features; to develop a Decision Support System for Pulses namely Soybean, black gram, green gram, red gram incorporating relevant aspects like Crop Protection System, Fertilizer Recommendation System, Cultivation practices, Water Management System and Implement Selection with visuals, multimedia and other features; to develop a Decision Support System for Tuber crops namely tapioca, sweet potato, colocasia incorporating relevant aspects like Crop Protection System, Fertilizer Recommendation System, Cultivation practices, Water Management System and Implement Selection with visuals, multimedia and other features; to extend training of the package to agricultural scientists and agricultural extension workers and to give sufficient copy of the software, and launching a downloadable and sample version of the software in the Internet; and to establish a Agricultural Digital Information centre cum Agri-Kiosk. The project is under progress.

3.2 National Websites/ Servers

Science & Technology Portal (Pune)

The portal developed by CSIR Unit of Research and Development of Information Products (URDIP), Pune is a single show case window on Indian Science & Technology. Basically it covers information on public and private S&T infrastructure, expertise and facilities available with these institutions, associated educational, government and private organizations and their activities. The top categories include: Agriculture, Archaeology, Astronomy, Atomic Energy, Aviation & Aeronautics, and Biotechnology etc. Portal provides option for online homepage creation to its users, gives a single point access to information about S&T events, and provides facility of Newsletter subscription. A search engine has been provided which helps user to search desired information based on a keyword. The portal is hosted at <http://www.anusandhan.net> and is updated regularly with information on all branches of Science & Technology.

Development of a Coastal Hazards Portal (Goa)

Specific subject information portals have become the need of the day, because of the proliferation of a number of website and internet access to many subjects. General public runs into panic when disasters take place. It is essential that they need to be better informed from general knowledge point of view and also how to face the situation in case of eventuality. It is also essential to know where the right information would be available on the aspects of concern and who the responsible authorities are. Cyclones strike the east coast of India very often. Tsunami is another event that has taken place in recent past and costed us many lives and wealth. Both these hazards originate in the seas and it is essential to develop a portal on this aspect to educate the public and have one

point access to the web information. The project of National Institute of Oceanography, Dona Paula, Goa covers both these hazards and a web portal, <http://www.coastalhazards.info> has been developed. The project has been successfully completed.

Spread of Indigenously Developed Textile Technology Research via Internet (Ahmedabad)

The project of The Textile Association (India), Ahmedabad includes 3 activities - two on <http://www.textileinfoonline.com> (TIOL) and one on <http://www.textileassociationindia.org> (TAI). On TIOL, the effort is to put up a new and comprehensive approach to predict with good accuracy the tenacity of cotton yarns from fibre properties. This sophisticated prediction methodology will be given in toto in a user-friendly manner for mill application. The Spinning Technology solutions will be completed, and similar solution systems will be put up for Weaving, Knitting, and Chemical Processing (bleaching, dyeing, and printing, finishing of textiles). On the organizational web site, a bimonthly journal will be made available in an easy-to-retrieve format. The Journal of the Textile Association (JTA) - is a bimonthly devoted to original technical and management papers of direct utility to textile practitioners. The project is nearing completion.

Industrial R&D in India: A Web Portal (Hyderabad)

The project from Administrative Staff College of India (ASCI), Hyderabad aims to create a Web Portal for Industrial R&D in India. The objectives of the project are i) to capture, analyse and disseminate news, views and also statistical information on industrial R&D units in India; ii) to elicit opinions through interviews of the opinion makers on the topic and highlight the issues; iii) to write features analysing the industrial R&D trends, and iv)

to disseminate information through online newsletter. A Web Portal, <http://www.rndindia.info> has been developed. The project is under progress.

Online Directory of Indian Academic & Research Establishments (Bangalore)

The project from National Aerospace Laboratories (NAL), Bangalore aims to develop and provide fast, reliable and free access to a Directory of Academic and R&D set-ups in India especially in the area of Science and Technology. The project is under progress.

Energy Information Support Services for the Indian Industry (Delhi)

The project of The Energy & Resource Institute (TERI), New Delhi aims at providing information support services to Indian industries by disseminating energy information with special focus on energy efficiency in industries. The project is under progress.

Enterprise Performance Improvement through Integrated Management Systems (Delhi)

The project of the Consultancy Development Centre (CDC), New Delhi aims to establish a web portal on Enterprise Performance Improvement through Integrated Management Systems to guide the users and stakeholders to enhance productivity and profitability. The project is under progress.

3.3 Indian Digital Library of Theses and R&D Publications

Design and Development of Database and Web-Portal of Indian Theses in the field of Manufacturing Technology & Management (Sathyamangalam)

The objectives of the project of Department of Mechanical Engineering, Bannari Amman Institute of Technology, Sathyamangalam,

Tamil Nadu are i) to develop a web-based information platform for improving the quality of higher education in the field of Manufacturing Technology and Management in India, ii) to promote research in various other areas in the fields of Manufacturing Technology and Management by provision of ready access to information, and iii) to review the practices for dissemination of scholarly information, which have developed in the last decade (1995 to 2005). The project is under progress.

3.4 Documentation of Traditional Knowledge and Folk Wisdom

Design and Development of Database on Folk Knowledge (Aurangabad)

The objective of the project of Dr Babasaheb Ambedkar, Marathwada University, Aurangabad is to survey existence of folk knowledge in rural area of Maharashtra and to analyze and consolidate the data thus collected and then to develop a database using CDS/ISIS. This pilot study will cover 12 villages, two from each division of Maharashtra. The villages will be selected on the basis of representing different cultures, traditions, customs, life style and economic development. The bibliographic database is designed and developed to incorporate the data collected with reference to the audio/video tape recoding of talk. The project has been successfully completed.

Documentation of community knowledge, traditional knowledge and oral traditions in 8 districts in the State of Karnataka with special reference to agriculture and rural practices (Manipal)

The objectives of the project of Centre for Rural Studies, Manipal are i) to survey, collect and document community knowledge and traditional knowledge which are very relevant but not widely known, ii) to survey

and document oral traditions which have an impact on science and technology, and iii) to study the simplicity and cost effectiveness of these indigenous practices. While documenting the knowledge systems, focus is being given to agrarian, indigenous knowledge, knowledge pertaining to animal husbandry, seed protection, storage, post harvest technologies, other rural practices which are relevant to rural livelihood. The project has been successfully completed.

Studies on Traditional Folk Herbal Veterinary Medicines and Poisonous plants of Rajasthan (Udaipur)

This project of Department of Botany, College of Science, M L Sukhadia University, Udaipur aims i) to develop a database on Ethno veterinary herbal drugs and poisonous plants, ii) to create awareness among tribals and rural people of the state for their conservation, and iii) Preparation of herbarium of all the Ethno veterinary herbal medicines and poisonous plants for future reference and preparation of herbal veterinary pharmacopia. The project has been successfully completed.

Isolation & Documentation of Indigenous Knowledge & Conservation of Traditional Practices in 5 Districts of Tamilnadu (Virudhnagar)

The project of Arulmigu Kalasalingam College of Pharmacy, Krishnankoil, Virudhnagar, Tamilnadu aims to isolate and record the local knowledge systems, including local species, communities, or ecosystems, the quantity and type of products obtained, the management systems employed in Theni, Virudhunagar, Sivagangai, Dindigul and Madurai Districts in Tamilnadu. The project also aims to determine how farmers, foragers, and other local men in these districts conceive of biodiversity, conservation, sustainability and the cultural basis of their views and to provide information to various agencies, and

educational institutions on the indigenous traditional knowledge and oral traditions to promote the application of local knowledge to modern resource management. The project has been successfully completed..

Development of a Portal and Kiosk of Goldsmith's skill towards enhancement of entrepreneurship abilities among unemployed youth (Durgapur)

The proposal from National Institute of Technology, Durgapur aims to develop a Portal and Kiosk of Goldsmith's skill towards enhancement of entrepreneurship abilities among unemployed youth.

The objectives of the project are i) to develop an archive of specialized diminishing rural skills of gold smiths in text, video, audio and animation format, ii) to create a database of cosmetic jewelries for transferring the knowledge of design of such jewelries to unemployed youth, iii) to create a portal for helping the Gold smith Industry, and iv) to train the unemployed youth and engineering students by using the archive and collection of large cosmetic jewelries at local centre as well as in technical Institutes.

A Portal in Bengali and English language will be created by using the archive, database of digitized 3D view of cosmetic jewelries and collection of cosmetic jewelries for global as well as local use. The project is under progress.

Documentation and Preservation of Agricultural Traditional Knowledge by using Modern Electronic Media through Farmer Participatory Approach (Madurai)

The project of Department of Agricultural Extension and Rural Sociology, Tamil Nadu Agricultural University, Madurai aims to identify and document the traditional/indigenous technical knowledge for

agriculture, horticulture, animal husbandry and allied enterprises from different farming situations like wet, garden, dry and coastal eco systems. The study would be conducted by involving farmers through farmer participatory approach rather than through individual household survey. The project is nearing completion.

Folk Wisdom of West Bengal (Kolkata)

The proposal from CALIBNET Society, Kolkata aims to explore oral traditions, folk rituals and folk wisdom. The special areas of concentration would *inter alia* include Health practices, human and domestic animals, folk medicine and medicinal plants. The project is nearing completion.

Application of ICTs in Agricultural Extension Services Provision and its Impact on the Tribal Farmers of Arunachal Pradesh State of North-East India (Pasighat)

The proposal from College of Horticulture and Forestry, Central Agricultural University, Pasighat aims to assess the agricultural information needs of tribal farmers; to experiment ICTs in agricultural extension services provision to the tribal farmers; and to assess the impact of ICTs in improved agricultural extension services provision to the tribal farmers. The project is under progress.

Development of a Multimedia Database of Traditional Knowledge in Andhra Pradesh (Delhi)

The proposal from Institute of Defence Scientists and Technologists, Delhi aims to provide a Web-enabled multimedia Database of Traditional Knowledge Existing in Andhra Pradesh so that it can be made widely available on Internet. The project is under progress.

3.5 Electronic Publishing of Selected Indian S&T Materials

E-publishing of the Journal of Tropical Agriculture (Thrissur)

The proposal from College of Forestry, Kerala Agricultural University, Thrissur aims to publish electronically its Journal of Tropical Agriculture. The journals is accessible from <http://www.jtropag.in>

3.6 Virtual Systems

A Virtual information Centre, <http://www.vic-ikp.info> has been established at ICICI Knowledge Park (ICCIKP), Hyderabad to provide fast and reliable access to information among industry, academia and public research institutions in the area of S &T. The centre is expected to function as a data access and switching centre for facilitating collaborative research and participate in resource building for the purpose. The project has been successfully completed.

3.7 Open Archives Initiative

Establishing MOLTABLE- An Open Access initiative for Molecular Informatics (Pune)

The proposal from National Chemical Laboratory (NCL), Pune aims to establish a web portal entitled MOLTABLE as an open access initiative to facilitate access to molecular data along with computed data. The project is nearing completion.

Development of OAI based Institutional Research Repository Services in India (Bangalore)

The project on Development of OAI-Based Institutional Research Repository Services in India was awarded to National Centre for Science Information (NCSI), Indian Institute of Science, Bangalore. The broad objective of the project is to facilitate improved access, visibility and impact of Indian science research output through establishment of a network of inter-operable, open access digital

research repositories and related services in the country. The project aims to (i) provide technical support to R&D organizations and universities in the country to set up their open access institutional research repositories, (ii) establish a national cross-repository search service by aggregating content from distributed OAI-compliant repositories, and (iii) provide solution and support for legacy non-OAI compliant repositories to become OAI compliant. The project is nearing completion.

Developing an Institutional Repository of Science and Technology (Kochi)

The objective of the project of Cochin University of Science and Technology, Kochi is to develop an Institutional Repository in Cochin University of Science & Technology. The collection of this digital repository may include preprints and post prints of researchers of the department, technical reports, theses & dissertations, teaching and learning materials. This can also be utilized for e-publishing of the findings by the faculty and research scholars. The project is under progress.

3.8 Surveys and R&D Studies

Impact of Technology on Quality of Service Deliveries in Technical and Management Libraries in Karnataka (Manipal)

The objective of the study by TA Pai Management Institute, Manipal is to investigate the nature and status of technology aided services and their impact on quality of service deliveries in technical and management libraries in Karnataka. It investigates the impact of technology on quality of services along five dimensions of services quality. The project is successfully completed and report is available at http://www.dsir.gov.in/reports/tifp/tapmi/tapmi_report.pdf.

Web GIS based Digital Atlas of the Sacred Groves of the North East India: Pilot study with Sacred Groves of Arunachal Pradesh (Nirjuli)

The joint project of North-Eastern Regional Institute Science & Technology (NERIST), Department of Forestry, Nirjuli, Itanagar, Arunachal Pradesh and National Chemical Laboratory (NCL), Pune is for the development of information infrastructure and prototype of Web GIS based digital atlas of the sacred groves of North East India with specific reference to over 150 sacred groves of the state of Arunachal Pradesh. The exercise would help in evolving strategies for conservation and protection of these unique heritage ecosystems. When implemented fully, it would strengthen and support the biodiversity conservation programs within North East and elsewhere in the country where similar types of ecosystems exist. The project is nearing completion.

Feasibility Study on the Self-Sustainability of Information Support Facilities in and around Industrial Clusters of SMEs (Hyderabad)

The objective of the project of National Institute of Small Industry Extension Training, Hyderabad is to propose a suitable information support system for SMEs and to prepare a framework for a self-sustaining system in and around SMEs, which can largely meet their information requirements. The project is successfully completed. The findings of the study and recommendations are available at <http://www.dsir.gov.in/reports/tifp/study/smeaptn.pdf>.

Archiving Ethnomedicinal Knowledge and Local Health Care Systems (LHCS) through Modern Electronic Gadgets: An Explorative Study (Madurai)

The project of Department of Human

Development, Home Science College and Research Institute, Tamilnadu Agricultural University, Madurai aims i) to list the existing ethno medicinal practices (medicinal plants) and Local Health Care Systems followed by the remote villagers, tribals and nomads, ii) to enumerate and document the practices with the help of modern electronic gadgets, iii) to explore the scientific rationale behind the documented practices, iv) to assess and compare with the modern scientific technique with the help of public private partnership, and v) to preserve the practices through multimedia based protocol for the benefit of scientific community, industrialists and others. The project is under progress.

3.9 Education and Training

Digital Content Development for Human Resources Development of Rubber Industry (Thane)

The objective of the project of Indian Rubber Manufacturers Research Association (IRMRA), Thane is to develop a video learning course on basic rubber technology to promote human resource development for technologists and supervisors working in rubber industry. The courseware would be particularly useful for upgrading the skills of lower segments of rubber industry technicians and supervisors. The project is successfully completed.

Web based interactive multimedia training programme on Digitization and Digital libraries (Delhi)

IGNOU, New Delhi has been awarded the project to develop a Web based interactive multimedia training programme on Digitization and Digital libraries. The focus of the project is i) to provide facilities for learning the process of digitization, developing digital libraries and knowledge

repositories using open source software like Greenstone Digital Library, Dspace ii) to facilitate self learning through multimedia courseware, and iii) to stimulate learning through online interaction with experts and peer groups. The project is under progress.

Workshop on Building Digital Libraries using Dspace (Delhi)

A workshop on Building Digital Libraries using Dspace was organized by The Energy and Resource Institute (TERI), New Delhi during April 10-13, 2007 at TERI, New Delhi. DSIR supported and participated in the workshop. The details of the workshop are available at http://www.teriin.org/events_inside.php?id=17896.

Advanced Workshop on Greenstone Digital Library Software: Multilingual capability and Interoperability (Bangalore)

An Advanced Workshop on Greenstone Digital Library Software: Multilingual capability and Interoperability was organized by National Centre for Science Information, Indian Institute of Sciences, Bangalore. DSIR supported the event.

3.10 Expert Meets/Seminars/Conferences

Three events namely, Info Vision 2007, Future of Knowledge Organization in the Network Environment, and Digital Preservation of Heritage and Research Issues in Archiving and Retrieval were partially supported.

Sensitization-cum-Awareness Programme for Technology Information Facilitation Programme

The Sensitization-cum-Awareness Programme (SAP) for Technology Information Facilitation Programme (TIFP) was organized by TIFP-DSIR in collaboration with local organizing agencies at Allahabad, Cochin, Gulbarga, Guwahati, Indore, Nagpur and Sathyamangalam. The objective of SAP for TIFP was to identify the requirements of the industry in connection with the implementation of the TIFP, prioritize them and to formulate specific projects for the cause of promotion and development of information use and access to the users clientele.