

II E. INTERNATIONAL COOPERATION

1. INTRODUCTION

The Department of Scientific & Industrial Research has maintained effective co-ordination and co-operation with the various international organizations such as UNCTAD, WIPO, UNIDO, ESCAP, APCTT and UNESCO at different levels, in association with other Ministries concerned wherever required, and on issues related to Information & Communications Technology, Technology Development and Technology Transfer.

2. ACTIVITIES OF APCTT

The matters pertaining to the Asian and Pacific Centre for Transfer of Technology (APCTT) under UN ESCAP were dealt with the cooperation of the Ministry of Commerce & Industry and the Ministry of External Affairs. The Department of Scientific & Industrial Research (DSIR) continues to play the role of focal point for the APCTT. DSIR not only helps preparing necessary briefs on technological issues for use of the Indian Delegation to the Annual Sessions of ESCAP and the APCTT Governing Board, but it also has played an active role in the functioning of APCTT and on issues related to programmes and policies.

The DSIR participated in the 20th Technical Advisory Committee (TAC) Meeting of APCTT and also the 19th Session of the Governing Board of the APCTT held during 26-30 November 2004 in Dhaka, Bangladesh. These meetings were attended by participants from China, India, Indonesia, Iran, Malaysia, Mongolia, Nepal, Pakistan, Republic of Korea, Sri Lanka, Thailand and Vietnam.

The Government of India continued to provide institutional support of US\$ 200,000 in Indian Rupees to the APCTT for both the host facilities and local posts. A programme support of US\$100,000 in Indian Rupees was

contributed towards the APCTT Regional Programme on National Innovation Systems.

The year 2004 saw the appointment of a new Director for APCTT. On assuming office, the Director has reviewed the operational, institutional and programming needs of APCTT in its providing the best of services to the member countries. One of the first steps taken was to develop a new and user attractive home page for the Centre. This home page can be viewed at www.apctt.org.

As in the previous years, the activities of the Centre during 2004 were directed towards technology capacity-building, promotion and management of innovation as well as sub-regional and regional networking. The Centre focused on four specific areas of activity, namely, Technology Information, Technology Transfer, Environmental Technology and Technology Management & Innovation. The main target groups of users are small & medium-scale enterprises (SMEs) and intermediaries/ SME support service providers.

APCTT's technology information and transfer advisory services are provided through technology exchange services, technical periodicals & publications, technology information & transfer networks, and technology transfer events. APCTT provides a technology trade platform to seekers and providers of technologies and renders technology exchange and transfer services with a view to promoting technology cooperation and trade among organizations and enterprises of the Asia-Pacific region. APCTT receives technology offers from research institutions, universities and companies including large-scale companies and intermediaries, especially for SMEs.

The Centre endeavors to keep SMEs and policy makers up-to-date on the latest technological developments and new and

emerging issues associated with the development, transfer and acquisition of technologies through its periodicals and publications. The publications have also served as an important tool to bring providers and seekers of technology together.

The Asia Pacific Tech Monitor (ISSN 0256-9957), the Centre's prime periodical, with 1,000 subscribers in 70 countries is brought out on a bimonthly basis and serves as a guide to the new innovation-driven economy. Under the Value Added Technology Information Service (VATIS), the Centre brings out five bimonthly periodicals namely Non-Conventional Energy (ISSN 0971-5630), Waste Management (formerly Waste Technology) (ISSN 0971-5665), Biotechnology (ISSN 0971-5622), Food Processing (ISSN 0971-5649) and Ozone Layer Protection (ISSN 0971-5657). The key feature of the VATIS periodicals is the packaging of information in a capsule form and facilitating direct access to information sources, wherever possible. The web-based version of APCTT's technology oriented periodicals is available at: www.techmonitor.net.

APCTT facilitates the establishment of networks of technology transfer intermediaries in the region to promote cross-border business cooperation among SMEs. The network members are assisted in developing partnerships with various stakeholders providing comprehensive technology transfer services. These networks and partnerships will expand the geographical coverage of APCTT activities in the Asian and Pacific region and make it possible to provide a complete technology transfer service package to a much larger group of SMEs.

The Centre has presently established the following three networks:

- International Network for Transfer of Environmentally Sound Technologies for Asia (INTET Asia);
- Biotechnology Information Network for Asia (BINASIA); and
- Asia Pacific Traditional Medicine and Herbal Technology (APTMNET) Network.

BIOTECHNOLOGY INFORMATION NETWORK FOR ASIA (BINASIA)

Biotechnology is perceived as one of the emerging high-technology sector having great potential for the economic advantage of a country. BINASIA aims to promote cooperation in R&D and information sharing. BINASIA is supported by the Ministry of Science and Technology of the Government of the Republic of Korea. Thirteen member countries of APCTT have designated a national biotechnology institution as their National Focal Point (NFP) of the Biotechnology Information Network for Asia (BINASIA).

Asian and Pacific Centre for Transfer of Technology (APCTT) and the Korea Research Institute of Bioscience and Biotechnology (KRIBB) in collaboration with the National Centre for Genetic Engineering and Biotechnology (BIOTEC), Thailand organized an Expert Group Meeting on BINASIA, in Bangkok from 29-30 April 2004. The overall objective of the meeting was to review and exchange knowledge regarding the current status and emerging issues of biotechnology among participating countries with a special focus on national biotechnology/ S&T policies, institutional and human resources and, national and international biotechnology programmes. The meeting was also held to deliberate on the IT-based BINASIA and its services and, to recommend next steps to be taken for the successful establishment and management of BINASIA. Thirteen member

countries of BINASIA participated in the meeting.

APCTT, in cooperation with the Korea Research Institute of Bioscience and Biotechnology (KRIBB); Centre for Biotechnology, Institute of Biology, Mongolian Academy of Sciences and the Mongolian Centre for Technology Transfer (MOCTET), organized a national workshop from 5-6 November 2004 in Ulaanbaatar, Mongolia to promote BINASIA and participation of national stakeholders in the development and use of BINASIA. The workshop was attended by the heads of R&D institutes, key ministry (agriculture, industry, S&T, etc.) officials dealing with biotechnology, industry association, SMEs, industrial and technology financing institutions, technology transfer service providers, international institutions based in Mongolia and the media (Biotechnology news/journal publishers/editors).

ASIA-PACIFIC TRADITIONAL MEDICINE NETWORK (APTMNET)

As agreed during the Expert Group Meeting (EGM) on APTMNET held in Wuhan during September 2003, the Executive Council of APTMNET was constituted in November 2003 with China as Chairman and India as the Vice-Chairman for two years or until the next election was held.

The first Executive Council meeting hosted by the Department of AYUSH, Government of India was held in January 2004 at NBRI, Lucknow, India. Based on the recommendation of this meeting, a training workshop on APTMNET Nodal Station Establishment was held in Wuhan, China during 6-12 June 2004. Participants from 8 countries attended the workshop besides two Indian and Chinese experts who delivered the lectures. An Officer from the National

Botanical Research Institute, Lucknow, the India nodal station, presented the progress made and informed that the Department of AYUSH has approved a major grant. The representatives from member countries including China, Iran, Mongolia, Nepal, Pakistan, Sri Lanka and Viet Nam presented the report about the progress in their respective countries. The workshop also discussed details of initial requirement for the setting up of nodal station such as infrastructure, hardware, software, data standards and data sharing protocols, etc.

The workshop proposed that China and India could provide the technical support needed by other member countries in setting up the nodal stations, since development of common standards and software is an essential prerequisite. It was also recommended that the financial support for the establishment of nodal stations be provided by the respective governments.

A delegation from APTMNET main station China participated in AROGYA 2004 organized by the Department of AYUSH in September 2004. Traditional medicine products and technologies from China were displayed during the exhibition. The Department of AYUSH provided the host facilities and free booths for APTMNET.

Further, based on the discussions with APCTT in September, China is planning to organize an "Asia Pacific Expo on Traditional Medicine" in Wuhan during 2005 and similarly India has also agreed to host the Traditional Medicine workshop early next year. APCTT has agreed to promote the above two events and initiating necessary follow-up action in this regard.

3. FUTURE DIRECTIONS

Taking into account, the requirements of a technology transfer centre in this new era of a

global and knowledge-based economy, APCTT will redirect its activities in 2005 to focus on innovation & knowledge management, exploitation of new & emerging technology, promotion of R&D partnerships; and technology transfer support to SMEs.

An initial step in this direction is to promote a National Innovation System (NIS) in APCTT member countries with India playing a leading role in spearheading this initiative. APCTT with support from India will assist member countries in their strategies to promote NIS through providing consultancy services and disseminating information on good practices. For this purpose, an on-line and off-line network on NIS will be created. The network will mainly inter-connect government agencies and research institutes promoting the development of a national innovation system.

In 2005, APCTT will also implement a project, Promotion of the Technology Transfer Network for Small and Medium-scale Enterprises in the Asia Pacific Region funded by the Government of Germany. This project aims at enhancing the capacity of institutions/intermediaries in member countries to deliver technology transfer services in order to contribute to the improvement of the competitiveness of small- and medium-scale enterprises (SMEs) and to accelerate the adoption of environmentally sound technologies (ESTs). This project is a consolidation phase of the project under the same title implemented earlier by the Centre.

Besides implementing these projects, APCTT will also be undertaking some other new initiatives. *Tech-Mart* is a web-based market for technology trade between technology sellers and buyers, where government supported research institutions, universities, private companies and individuals can make technology deals through an online network. *Tech-Mart* caters to the requirements of

countries in the Asia Pacific region as well as those outside the region, within our global technology transfer network of intermediaries. Through this network it would be possible to sell or buy technologies and also develop joint ventures and bridge technology demands with appropriate sources of technology supply (<http://www.technology4sme.com>).

Technology4sme is a comprehensive web-portal to facilitate technology transfer and business development with a particular focus on SMEs in the Asia Pacific region. This portal is a part of the project, *Promotion of the Technology Transfer Network for Small and Medium-scale Enterprises in the Asia Pacific Region*. APCTT will support member countries to develop their own national *technology4sme* web-portals, which are designed to facilitate technology transfer within a member country and provide business support. SMEs can introduce their new technologies, new products and market news to promote their business. APCTT will inter-connect all national *technology4sme* web-portals to create a network of networks to promote technology transfer and cross-border business development for SMEs in the Asia Pacific region. (www.technology4sme.com)

Business e-Coach, another initiative, is a nation specific web-portal that will provide legal information and practical advice for business start-ups and on-going businesses. It will also provide knowledge and up-to-date business management skills for SMEs. APCTT will support member countries to develop their own *Business e-Coach* web-portals. These portals will encourage new business ventures and also help efficient operation of the on-going businesses in member countries. APCTT will inter-connect the *Business e-Coach* web-portals of the member countries to create a network that promotes joint ventures, and inward and outward investment in the region. (<http://www.business-asia.net>).

Business Circle, another new scheme is a web-based sector-specific community for business people to explore business opportunities in the Asia Pacific region. The Business Circle is conceived to facilitate sharing of information online on several aspects of technology-based business opportunities, including new products, market trends, government policy & practices, and national R&D infrastructure in the member countries of APCTT. APCTT intends to establish an online sector specific Business Circle. The members of such cyber community interested in business development in the Asian and Pacific region can interact with other members in the region. The members can discuss ideas concerning business cooperation including buying, selling and opportunities for joint ventures, finance, and employment. To begin with, APCTT will form a Business Circle in the sector of mechanical & materials industry, which should be available from 1 July 2005. Subsequently, Business Circles for other sectors such as electrical & electronics industry, information & communication industry, transportation industry, etc. will be created.

To stay in closer contact with its customers, APCTT is starting an e-mail club. This club will facilitate closer contact with users of the services of the APCTT.

4. INTERACTION WITH UNESCO

DSIR continues distributing the WINSIS bibliographic Software developed by UNESCO, in the country with a known user sites over 3000 in India alone. DSIR, under the Technology Information Facilitation programme, also continues to be the focal point for UNESCO in India and is a member of UNESCO's Asia Pacific Information Network (APIN).

UNESCO with the support from Japan, has developed a training package on ICT for library and information professionals

(ICTLIP), which consists of six modules. UNESCO has now undertaken an exercise to proposed get these modules evaluated in terms of content, accessibility, user friendliness and to incorporate new tools and techniques apart from improvisation of the existing package. This was done through expert evaluators in various countries and coordinated by two experts from India and Australia.

Deputations and Delegations to National/ Regional/ International events

During 2004-05, DSIR deputed several of its officers to represent in various national/ regional/ international meets which are listed below:

International Seminar on Ecological Construction and Strategies for Soil and Water Conservation for Sustainable Agricultural Development.

The Seminar was organized by the Department of International Cooperation, Ministry of Science & Technology, People's Republic of China and the UNESCAP – Asian and Pacific Centre for Transfer of Technology (APCTT) in association with the Sichuan Provincial Science & Technology Department, Sichuan Academy of Agricultural Sciences and the Guang'an Municipal People's Government during 22-24 June, 2004 at Guang'an City, Sichuan Province, CHINA. Over 17 academicians, scientists, policy makers from the member-countries of APCTT attended the seminar. The participants discussed in detail the current initiatives and measures taken up by their respective countries for ecological construction and strategies on soil and water conservation towards sustainable agricultural development. Several recommendations were made at the seminar. The Indian representative made a country report on *Technological Innovations and Ecological Constructions: select initiatives for soil and water management towards sustainable agricultural*

development. The participant experience suggests that there is great scope for bi-lateral cooperation and for exchange of ideas between India and other member-countries in general and China in particular for initiatives on alley cropping, rain water harvesting, re-vegetation technology and so on.

Eleventh Annual International Conference on Composites/Nano Engineering (ICCE-11), Hilton-Head Island, South Carolina, USA.

The 11th Annual International Conference on Composites/Nano Engineering, (ICCE-11) was held during August 8-14, 2004 in Hilton-head Island, South Carolina, USA. The ICCE-11 has been the first international composite materials conference with its name changed from *Composites* to *Composites/Nano Engineering*. The objectives of the ICCE-11 conference have been:

- to bridge the gap between Materials Science, Mechanics and Manufacturing of Composite Materials
- to encourage interdisciplinary research on composite materials, bridging the gap between aerospace technology, bio-materials, chemistry, physics, electrical engineering, fluid mechanics, powder metallurgy, magnetic/Nano materials, sensors/actuators, among others
- to encourage leveraging of composite materials research resources through joint research between participants and writing joint research proposals.

Participation in this conference has been from all over the world covering the field of nanoscience and nanomaterials research and relevance of nanotechnology to composites technology. 300 quality papers were accepted for presentation at the conference. The DSIR representative presented a technical paper

entitled *Fibre reinforced ice composite structures for cold-ice regions.*

TCDPAP on a promotional visit to Vietnam, South Korea and the Peoples Republic of China.

A senior Officer from DSIR was nominated to the delegation from the TCDPAP, New Delhi on a promotional visit to Vietnam, South Korea and the Peoples' Republic of China during August 21-28, 2004. The delegates met over 10 governmental and professional organizations in Vietnam like the Vietnam Engineering Consultant Association (VECAS), Ministry of Construction, Vietnam Posts and Telecom Corporation and Vietnam Chamber of Commerce and Industry (VCCI). In South Korea, the delegation met the Korea Engineering & Consulting Association (KENCA), Ministry of Science & Technology, and Moon Engineering Co. Ltd in Seoul, South Korea. In Peoples Republic of China, the TCDPAP delegation met the China National Association of Engineering Consultants, China Power Engineering Consulting Corporation and the Research Institute of Petroleum Processing (RIPP). The purpose of the delegation was to ensure larger participation of national representatives from both the government and consultancy organizations at the TCDPAP, held in New Delhi.

UNESCO – ISTIC Asia Pacific Information Network (APIN) – 2nd Session. Beijing, China.

A DSIR Officer was nominated to the 2nd Session of the APIN Meet organized jointly by the UNESCO/New Delhi and ISTIC/Beijing during 21-23 October 2004. The objectives of the meeting were to discuss the visions and the missions for the future of APIN; the Information For All Programme (IFAP); the constitution of APIN; and the future of the

Observatory for the Information Society. Thirty participants from seventeen countries in Asia and the Pacific Region attended the 2nd APIN Meet at the Institute for Scientific and Technical Information of China (ISTIC) in Beijing, China, highlighting the important role of information literacy in the region.

The final declaration adopted at the end of the three-day meeting on 23 October, stresses that APIN should be an *authoritative and comprehensive information hub in the emerging knowledge societies with active participation and contribution by APIN National Units (NU) in all member countries*. It was also stressed that there is a need to *strengthen and empower APIN NU to play an effective role as gateways to ensure provision of and access to information and knowledge resources*. APIN, a regional initiative of UNESCO's Information for All Programme (IFAP), is a network formed by merging the Regional Network for the Exchange of Information and Experiences (ASTINFO), the Regional Informatics Network for Southeast Asia and the Pacific (RINSEAP) and the Regional Informatics Network for the South and Central Asia (RINSCA).

APIN promotes ICT literacy and application, information and knowledge networking, sharing of information resources, and use of international standards and best practices in communication, information and informatics.

Asia Pacific Centre for Transfer of Technology (APCTT) Session of Governing Board and Meeting of the Technical Advisory Committee

The DSIR nominee, attended the Extraordinary Meeting of the Governing Board of UN ESCAP APCTT held in Bangkok, 9th April, 2004.

The nominee of the Government of India, also attended the 20th Meet of the TAC and 19th Session of the Governing Board of the APCTT held in Dhaka, Bangladesh during 27-30 November 2004.

The TAC Meeting, was held on 27th November 2004, and attended by the representatives of Bangladesh, China, India, Islamic Republic of Iran, Malaysia, Nepal, Pakistan, Republic of Korea, Sri Lanka, Thailand, and Viet Nam.

The 19th Session of the Governing Board of the Asian and Pacific Centre for Transfer of Technology (APCTT) was held on 28 and 29th November 2004 in Dhaka, Bangladesh. The Board discussed in detail the report of the 20th Meeting of the Technical Advisory Committee and endorsed the report along with the proposed future activities. The Board noted with appreciation the new initiatives proposed to be undertaken by the Centre particularly in the area of National Innovation Systems (NIS) and networking.

The Board noted with concern the inadequate staffing position and financial instability of the Centre and proposed a few measures to overcome these difficulties including secondment of regular budgetary staff from ESCAP, placement of NRL, experts by member countries and regular contributions from the member countries. The Board requested ESCAP to contact the member countries to ensure that annual pledges are made towards the institutional support of APCTT.

Following the TAC & GB meetings, a Regional Seminar on *National Innovation Systems* was held in Dhaka on 30 November 2004. The event was attended by two officers of the DSIR and one scientist of NISTADS/CSIR.