

VII. PUBLIC SECTOR ENTERPRISES

VII-A. NATIONAL RESEARCH DEVELOPMENT CORPORATION

1. INTRODUCTION

The National Research Development Corporation (NRDC) is a premier organization, under Department of Scientific & Industrial Research (DSIR), Ministry of Science & Technology, engaged in the development, promotion and commercialisation of the R&D results/ technologies emanating from Research Institutes/ Universities / Industries, etc. The Corporation provides comprehensive technology transfer services and acts as a catalyst for transforming innovative research into marketable industrial products. The Corporation is a unique organization entrusted with the mandate of both promotional function of development/up-scaling of lab-scale technologies, promotion and inculcating the spirit of inventivity and commercial function of transferring/licensing these technologies to industry and making them commercially successful. During its operation for nearly six decades since its inception, the Corporation has developed strong links and network with various R&D organization in the country as well as abroad for transfer of technologies. Its operations cover the entire spectrum of industrial technologies ranging from Agriculture to Agro processing, Chemicals to Metallurgy, Mechanical engineering, Electrical engineering, Electronics, Biotechnology and so on.

During the year 2010-11, the Corporation's total income was ₹ 959.47 lakhs as compared to ₹ 1085.92 lakhs in the previous year and principal source of revenue i.e. Lumpsum Premia and

Royalty on the licensing of technologies to industry was ₹ 782.58 lakhs, as compared to ₹ 618.65 lakhs, in the previous year.

During 2010-11, the Corporation incurred Loss to the tune of ₹158.24 lakhs (before tax) as compared to Profit of ₹15.38 lakhs in the previous year.

The Department of Public Enterprises has given 'Good' rating to the Corporation for the year 2009-10 and likely for 2010-11 is 'Fair'.

2. ACHIEVEMENTS

2.1. Processes Assigned

The Corporation continued its efforts to increase its inflow of technologies from various R&D laboratories, universities etc. As a result, 49 new processes were assigned for commercialization during 2010-11. Some of them are as below:

- Poly hydroxy butyrate (Phb)-a bio-degradable plastic
- Liquid formulation of native strains of bacillus thuringensis against helicoverpa armigera using agro industrial by products-a bio-pesticide
- Cold water miscible starch
- Seaweed extract fertilizer
- Method of preparing Aloin
- Soil moisture indicator
- PCR based diagnostics kits for detection of food and water borne pathogens

- ◆ NAVINYA-A plant based formulation for control of mulberry root rot disease
- ◆ Novel primers for a PCR-RFLP assay identification of pathogenic mycobacteria
- ◆ A new flexible mechanically stable polymer support for solid phase peptide syntheses

2.2 Major Technologies Licensed

The Corporation signed 40 licence agreements during 2010-11. Some of the major technologies licensed by the Corporation during the year were:

- ◆ Low cholesterol ghee
- ◆ Extraction of azadirachtin from neem seed kernels
- ◆ A novel super-absorbent hydrogel
- ◆ VIJETHA (Silkworm Bed Disinfectant)
- ◆ ANKUSH (Silkworm Bed Disinfectant)

2.3 Prize Award

The Corporation has been giving Prize Awards for meritorious inventions which are proven to be workable, advantageous and commercially viable to encourage inventive talent in the country and WIPO Gold Medals for outstanding inventor and Women inventor respectively on behalf of World Intellectual Property Organisation.

A total of cash prize of ₹17 lakhs and two Certificates of Merit were given to twelve inventors for seven inventions out of a total 174 applications received for the year 2009.

Innovate India

In order to encourage the inventivity of the people in North East, the Corporation organized its Annual event 'Innovate India' which comprised of Prize Award Ceremony and one and a half day Conference on Socio Economic Empowerment of North East in Guwahati on 26-27 May 2011. The event provided a strong platform for interaction and development of linkages amongst entrepreneurs, research scientists and technologists, industrialists, policy makers, investors, etc. and attended by large number of such people including young innovator.

The event was inaugurated by Shri P.P. Srivastava, Member, North East Council, who also presented the NRDC Meritorious Invention Awards (2009) to the inventors/innovator. He also presented World Intellectual Property Organization (WIPO) Gold Medal for the year 2009.

During the event, delegates were enriched by attending the interactive sessions on innovative technologies, applications of biotechnology, bioresource utilization and conservation, technologies for improving production and productivity, role of IPR in innovations, innovation related initiatives of Government of India and financing in innovation.

2.4 Intellectual Property Consultancy and Management

In order to enhance the technology resource, Corporation has been endeavoring to tap the technologies generated by the universities/research institutions by organizing IPR awareness programmes/seminars at their premises thereby encouraging them for Commercialisation of technologies by assigning them to the Corporation and facilitating them to file patents both in India and abroad through the Corporation.

During 2010-11, the Corporation conducted 10 seminars and training programs in different part of the country. In addition a total of 66 such lectures were also delivered by the officials of the Corporation on the IPR issues in different



seminar/workshop in various institutes and universities for the scientists, research scholars, inventors, etc.

The Corporation filed and pursued 91 patent applications in India to protect inventions emanating from various sectors of technology through its National Patent Protection Scheme by providing financial, technical and legal support to individual inventors and researchers in universities and R&D institutions. The Corporation conducted 34 state-of-the-art patent search for the Scientists, Research scholars, Inventors, etc.

2.5 Promotion of Rural and Household Technology (PRHT)

To demonstrate the utility of the rural technologies and ensure their faster dissemination, the Corporation is closely working with NGO's and other developmental agencies and taking appropriate technologies to rural areas. During 2010-11, following rural based projects were supported to give boost to income generating activities in rural areas.

- Installation of innovative bio gas unit for demonstration and training to produce biogas from Azolla Biofeed and kitchen waste in Rayalseema area by Rural Development Organization, Tirupathi (AP)
- Computer aided design for embroidery work at Dhoolpet area of Hyderabad Distt.

Undertaken by Samadhan Kendra, Ashok Sansthan, Hyderabad.

- Training programme initiated on "Hardware Assembly, Maintenance and Repair (Computer and Mobile)" in and around Poonch area for rural youths by Gandhi Seva Center Mendhar (J&K).
- Palm neera preservation technique developed and promoted among self help groups by Arulagam, Coimbatore (TN)
- A technique for domesticating stingless bees for honey processing standardized by KVK Mitraniketan at Vellanad (Kerala) and promoted in rural areas.

The Corporation provided support to (i) Women Education Development and Social Service Trust (WEDSS), Thanjavur (TN) for facilitating incoming generation activities among SHGs by way of establishing facility for design and assembly of inverters for power supply and (ii) ADHAR, Kanpur for promoting water remediation kit for chrome-VI removal in water contaminated area from leather tanneries. The programme was well received by SHGs in 9 slums and 2 villages of Kanpur District.

2.6 Rural Clusters

To identify the technological gaps and to add value to the end products, the Corporation has been promoting three clusters viz. Dairy, Sericulture and Coir Cluster. NRDC has worked with the co-



operatives, Self Help Groups, etc. for improving productivity of the cluster.

2.7 Exhibitions and Publicity

The Corporation participated in 32 exhibitions, seminars and get-togethers in India organized by various agencies. Some of the exhibitions participated by the Corporation are:

- Camprotech India 2010
- Agritech 2010
- Food & Technology Expo 2010
- 16th All India National Expo 2010
- 14th National Science Expo
- Vigyan Evam Samaj S&T Conference & Exhibition 2010
- CSIR Technofest 2010
- Agriwatch Global Pulses Summit 2010

2.8 Technology and Project Export

The Corporation has successfully handed over the Centre for Demonstration of Technologies (CDT) to Ivory Coast after operating the Centre for two year.

The Corporation had submitted evaluation report on the status of Tomato sub-sector in Ghana which was carried out by the Corporation in collaboration with CSIR, Ghana. Based on the report, the Corporation has submitted proposals for setting up of a pilot research project for tomato production and preparation of feasibility report for tomato processing in Ghana to the Ministry of External Affairs, Govt. of India.

2.9 Knowledge Management System (KMS) for Technology Promotion

KMS is a self-propelled mechanism for systematic identification and evaluation of the technologies, by a team of experts for value addition to the extent possible for making a complete technology package for commercialization of technologies, so that the chances of success become high.

60 technologies related to biotechnology, agriculture, ayurveda & herbal were discussed in

12 meetings of expert panel. Seminars were organized on “NRDC-Industry interface on commercialization” at Kolkata and Hyderabad. The Committee suggested various value additions required for the technology(ies) including market survey, test results, preparation of technology document/feasibility report of detailed project reports etc.

2.10 Basic Engineering Design Package

The Corporation identified six technologies and placed work orders for following BEDPs:

- Management of white grubs
- Low cost tissue culture medium
- Nema gel
- Polymer paints
- Rice husk particle board
- Low calories flavoured milk

2.11 Program for North-Eastern States

The Corporation organized four Entrepreneurship Development Programs (EDP) viz. Skill Development and Training Programs on Areca Leaf Plate and Bowl making at Guwahati (two programs), Skill Development and Training on (Food/ Fruit processing at Imphal, Skill Development and Training on Banana Fibre extraction and utilization at Guwahati. The North Eastern Industrial & Technical Consultancy (NEITCO), Guwahati organized these programs on behalf of the Corporation. The Corporation also provided financial assistance to NEITCO for purchase of Machinery and Equipment for Areca Leaf Plate making unit. The programs were attended by several young participants with due representation of women from North-Eastern States.

2.12 Women Entrepreneurship Development Program (Gender Development)

The Corporation initiated Women Entrepreneurship Development Program with the objective to empower women by improving their economic status and bringing them into main stream of development through entrepreneurship development program.

The aim of the program is to promote, inspire and encourage women to take up entrepreneurship; create awareness about technologies which can reduce the element of drudgery in their lives; ensure their involvement in the development of science and technology; motivate women for stressing the need for economic empowerment and provide skill training on the need based technologies through R&D institutions/ Universities.

The Corporation successfully organized the WEDP at following universities/colleges;

- ◆ Choudhary Chhoturam Snatakottar College, Muzaffarnagar
- ◆ Aligarh Muslim University, Aligarh
- ◆ Dr. H.S. Gour University, Sagar
- ◆ Sardar Patel University, Gujarat
- ◆ Baikunthi Devi Kanya Mahavidyalaya, Agra
- ◆ Guru Ghasodas University, Bilaspur

A total of 800 women students participated and participation certificates were distributed to students. New technologies were taped and identified from the institutes/colleges for assigning to the Corporation for commercialization. Wide publicity was given to the Corporation through 40 national and regional language news paper.

2.13 Human Resource

The total manpower of the Corporation as on 31st March, 2011 is 94, viz., (Group A-32 Group B-30, Group C-22 and Group D-10). The employee-

management relationship was cordial throughout the year. During the year under review, there were no employees who received remuneration in excess of 24 lakhs per annum or ₹2,00,000 per month, requiring disclosure as per the Provisions of Section 217(2A) read with the Companies (Particulars of Employees) Rules 1975.

During the year 2010-11, 16 executives and non-executive of the Corporation were deputed to various training programs to develop their skills.

2.14 Implementation of Official Language

The Corporation continued to make efforts to fulfill the targets prescribed by the Government of India under the Official Language Act and the Rules framed therein with regard to increasing the use of Hindi Rajbhasha in the office during the year 2010-11. Employees were motivated to use their working knowledge of Hindi in day to day official work. All the Standard Forms, Files, etc., are bilingual. Significant progress has been made in the field of correspondence, noting and drafting in Hindi. All Hindi letters are being replied in Hindi only. The Annual Report of the Corporation is being published in diglot form since 1986-87. The Corporation also publishes a popular Science and Technology monthly magazine in Hindi, Entitled 'Awishkar', "Rajbhasha Incentive Scheme" has been implemented to popularize the use of Hindi in the Corporation.

To enrich the Hindi vocabulary of the employees of the Corporation as well as the visitors, an English work with its Hindi meaning written daily on a writing board as 'Today's word' at the reception of the Corporation.