

IV PUBLIC SECTOR ENTERPRISE

IV-A. NATIONAL RESEARCH DEVELOPMENT CORPORATION

1. Introduction

The National Research Development Corporation (NRDC) is a premier organisation, 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. NRDC is a unique organisation because it is the only public enterprise wholly dedicated to transfer of technologies developed at R&D laboratories to industry. During the past five decades of its existence, the Corporation has developed strong links and network with various R&D organisations in the country as well as abroad for transfer of technologies. Its operations cover the entire spectrum of industrial technologies ranging from chemicals to metallurgy, mechanical engineering, electrical engineering, electronics, biotechnology and so on.

During 2009-10, the Corporation's total income was ₹ 1085.92 lakhs, as compared to ₹ 1220.29 lakhs in the previous year.

Profit

During 2009-10, the Corporation ended up with Surplus before Tax of ₹ 15.38 lakhs as compared to Rs. 61.81 lakhs in the previous year.

The Department of Public Enterprises has given 'Very Good' rating to the Corporation for its MoU

performance during 2008-09 and 'Good' for 2009-10.

Achievements April 2009 to March 2010 and April 2010 to December 2010

◆ Processes Assigned

To enlarge its pool of technologies, the Corporation continued its efforts to increase its inflow of technologies from various R&D laboratories, universities etc.

During 2009-10, 60 new processes were assigned. Some of them are as below:

- ◆ A low volume saponified haemorrhagic septicaemia vaccine
- ◆ Soleckshaw-solar powered rickshaw
- ◆ ELISA kit for the diagnosis of Johne's disease in animals
- ◆ Moringa powder-drumstick powder for general health improvement
- ◆ Silver nanoparticles as antidandruff agent
- ◆ Dietetic shrikhand
- ◆ Arka banana foliar special-a crop specific micronutrient formulation
- ◆ A process for combustion derived porous ultra light MgO & ZnO nano-crystalline powder

During April to December 2010, 27 new processes were assigned to the Corporation for commercialisation. Some of the commercially important processes assigned to the Corporation are:

- ◆ Process for the production of Bifunctional Chimeric Keratinase and its biotechnological application

- ◆ Process for the Manufacture of Millet Bread (Loaf Type) from Millets namely Jowar, Kodo, Proso, Pearl, Little, Foxtail
- ◆ Bruccheck: Dot-Elisa Kit for Brucella Melitensis detection in Goats and Sheep
- ◆ A New Flexible Mechanically Stable Polymer Support for Solid Phase Peptide Syntheses
- ◆ A Chemotherapeutic Composition used in the treatment of cancer
- ◆ PCR based diagnostics kits for detection of food & water borne pathogens

2. Major Technologies Licensed

The Corporation managed to sign 41 licence agreements during 2009-10. Some of the major technologies licensed by the Corporation during the year were:

- ◆ Mosquito larvicidal formulation of bacillus thuringiensis var israelensis
- ◆ Extraction of potassium humate from lignite
- ◆ Cost-effective eco-friendly para-pheromone trap for effective monitoring of fruit flies belonging to bactorocera SPP for use in Horticulture
- ◆ Liquid bio-fertilisers
- ◆ Pithplus-bioconversion of coirpith into organic manure

During April to December 2010, 28 new processes were licensed. Some of them are:

- ◆ A Process for Preparation of Arka Vegetable Foliar Spray Formulation
- ◆ A Process for Preparation of Arka Mango (Mangifera indica L.) Foliar Spray Formulation
- ◆ 777-oil
- ◆ Pongamia soap for agricultural use
- ◆ Low Cholesterol Ghee
- ◆ Vijetha

3. Prize Award

National Research Development Corporation gives Tax Free Cash Awards for Meritorious Inventions to those in scientific and industrial fields which are proven to be workable, advantageous and

commercially viable to encourage inventive talent in the country as these awards are given to the individuals and not to institutions. Corporation also gives WIPO Gold Medals for outstanding inventor and woman inventor respectively on behalf of World Intellectual Property Organisation (A Geneva Based UN subsystem). These NRDC awards and WIPO Medals are presented to awardees every year.

These Awardees are from all the sections of the society i.e. remotely located villages to metro cities, from uneducated to highly educated persons; persons having limited working resources to working in highly sophisticated laboratories.

The prize award scheme from January 2008 have been classified in the following three categories: **Innovation Award** of the Year 2008 (IP driven innovation, Premium Innovation and Innovation in high tech area) - Maximum amount of award is Rs. Five lakhs to be given to max. two inventions.

Societal Innovation Award of the Year 2008 (Agriculture, Environment, Rural) - Maximum amount of award is Rs. Three lakhs - to be given to max. three inventions.

Budding Innovators Award of the Year 2008 (Full time enrolled or registered students pursuing Bachelors, Masters or Doctoral degree program in Research Institutions, Universities, Affiliated Colleges - Maximum amount of award is Rs. One lakh to be given to max. five inventions.

Achievements

During 2009-10, a WIPO Gold Medal (2008) was also presented to the scientists of Vivekananda Parvatiya Krishi Anusandhan Sansthan (ICAR), Almora, Uttarakhand for the development of 'Eco-friendly novel technology for managing white grubs in North West Himalayas'. WIPO Medals are awarded by NRDC on behalf of World Intellectual Property Organisation for outstanding inventions which are suitable for developing countries.

During April-Dec 2010, the Prize Award committee declared 2 awards under the Innovation award

category, 2 awards under Societal innovation and 1 award under the Budding Innovators award for the year 2009. Apart from this the committee also announced 2 certificates of merit and 1 WIPO Gold Medal for the best invention of the year. The Applications for Awards under 3 categories, for the year 2010 have been invited.

Innovate India - Conference on Leveraging Innovation for Knowledge Economy

The Corporation organized 'INNOVATE INDIA 2009' that provided a unique opportunity for interactions to promote innovations and technology commercialization. The event was organized in Bengaluru on 19-20th November, 2009, at the Indian Institute of Science (IISc) and was attended by a large number of young innovators, scientists, students, researchers, industrial personnel and entrepreneurs.

The event was planned as a Business Event comprising a conference on 'Leveraging Innovation for Knowledge Economy' coupled with an Interactive I3 Forum. The Conference was well attended and appreciated by the participants.

During the event, delegates were enriched by attending the interactive sessions on Innovation in Building Knowledge Parks, Medical Innovation in the Light of Changing Healthcare Needs, Innovation in Literacy & People Empowerment, Contemporary Issues in Knowledge Dissemination, Innovation for Organisational Development, Management Issues in Innovation, Innovation & Management of Renewable Resources, Innovation in Sustainable Development, Business Intelligence and Strategic Planning and Microfinancing for Rural Innovation.

One of the highlights of the conference was the I3 Forum, centered on Ideas, Innovations and Incubation. The I³ Forum event enabled participants to take home unique and exceptional innovative experiences. The three interactive sessions were (i) Gender Program involving a competition among prospective women entrepreneurs based on their presentation of business plans for their projects (ii) Rural

Technology competition wherein NGOs and the agencies involved in rural development were invited to submit projects on rural technology, food processing, healthcare, sustainable development for consideration of project support up to ` 1 lakh each and (iii) Innovative technology contest aimed at 3rd and 4th year engineering students inviting them to demonstrate innovative technologies that could help in solving scientific and technological challenges.

In the Gender Program 30 proposals were received and 27 were short-listed, out of which 8 proposals were awarded. The rural technology competition received 166 applications this year, out of which 27 were short listed and 10 winners were announced. The innovative technology contest received 75 proposals, out of which 20 were short-listed and finally 3 winners were given 1st, 2nd and 3rd prizes, respectively. In addition, 2 consolation prizes were also awarded. (Fig. 49).



Fig. 49: Innovate India 2009

4. Intellectual Property Consultancy and Management

In exploitation of the fruits resulting from the efforts of research and innovation in Science and technology, protection of Intellectual Property is a very important task. Moreover, the scientists and inventors also get recognition in protecting IPR and the protected IP may be considered as property of high economic value. The Corporation, spread out this message across the country and increased its drive in creating awareness about IP protection and management among universities, research organisations and the industry, leading to the development of specialized skills. During 2009-

10, the Corporation conducted twenty seminars and training programs in different parts of the country to make the researchers IPR savvy. The Corporation's thrust to reach out to various R&D institutions and universities and to educate and spread the awareness about the importance of IP assets protection included several lectures on relevant and contemporary topics like Patenting System in India, the Rationale of Protection of Geographical Indications of Goods, IP Valuation and Management, the Patenting Procedure in India as well as abroad, Trade Marks Registration Procedure, IP Protection in Agriculture and Biotechnology Sector, importance of State-of-the-art searches and many more. A total of sixty such lectures were delivered in different programs in various institutes and remotely located universities and colleges. The topics covered in these programs were very well appreciated and regular requests for conducting such programs are being received continuously from various parts of the country. These awareness programs are instrumental in increasing the number of patent applications filed. The Corporation filed 93 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 success of the Corporation in securing Indian Patents is phenomenal as the Corporation, before filing any patent application, ensures the novelty aspect of the invention by conducting on-line international state-of-the-art searches. The on-line patent search facility with the Corporation is not simply limited to the patent applications being filed by the Corporation itself but is also extended to universities, R&D institutions and various central and state government departments to facilitate evaluation of their research projects where intellectual property can be generated. During 2009-10, Corporation conducted 75 state-of-the-art searches. The Corporation is also expanding its footprint across other areas of IP management and policy formation.

During 2010-11, till December, Corporation has filed 66 patent applications and has conducted 10 seminars in various parts of the country as well as has delivered 20 lectures on "IPR & Innovation Management in Knowledge era". The Corporation also conducted 31 on-line patent searches for various R&D institutes and Universities. (Fig. 50).



Fig. 50: IPR Seminar at Bhopal

Intellectual Property Facilitation Centre

To help SMEs more fully utilize the emerging trends in their business activities, they need to know more about how to protect intangible assets. However, in the shifting frames of time, these industries have failed to cope up with the emerging challenges especially, in the field of intellectual property protection. Most of these industries are lagging far behind and facing technical obscurity, being unaware about management of their knowledge-based assets like intellectual property rights (IPR).

In view of the above the Corporation is in the process of setting up a Patent Facilitation Centre for MSME at Bangalore in association with MoMSME. The Centre will focus on protection and management of IP for the MSME by facilitating and consulting IP protection and innovation management in the changing economic environment and its implications on small industries. The Centre would also try to take steps for creating IPR culture and suggest the initiatives for small-scale industries.

5. Promotion of Rural and Household Technology (PRHT)

To promote appropriate technologies relevant to rural and backward areas and demonstrate their relevance in terms of employment generation and providing better health and sanitary amenities, the Corporation networked with NGOs and other developmental agencies for taking appropriate technologies to rural areas. During 2009-10, the Corporation extended its support to various rural based projects that has directly and indirectly benefited several people in terms of gainful employment, etc.

The Corporation also networked with (i) Saathi Samaj Seva Samiti, Kumharpara (Bastar) in Chattisgarh in promoting glass beaded jewellery craft among rural artisans and with (ii) Society for Rural Industrialization, Baraitu (Ranchi) in Jharkhand in introducing the improved techniques of lac processing among rural populace. Besides opening these 2 new centres, Corporation strengthened its existing centres in areas like J&K, Tamilnadu, Orissa, Andhra Pradesh, Manipur. (Fig. 51).



Fig. 51: Promotion of Rural and Household Technology

During 2010-11, strengthening of following centres was taken-up:

- ◆ Gandhi Seva Centre, Mendhar (J&K) - TARA loom was provided and training on woolen blankets (training to 30 persons)
- ◆ Mitra Niketan, Vellanad, Kerala - Popularisation on Stingless Bee Culture (50 Self Help Groups)
- ◆ Society for Rural Industrialisation, Ranchi - Lac Processing (20 SHG training)
- ◆ Pruthvi Sangram Vikas Sansthan, Kadepur, Sangli (30 women SHG)
- ◆ Vivekanand Kendra, Kanyakumari - Azola (Bio feed for live stock)

Work is also in progress for setting up of the following two new centres:

- ◆ Samadhan Kendra, Hyderabad, Software embedded embroidery system will be provided with training for empowerment of women.
- ◆ Chavvi Shanti Dham, Arerea, Bihar: Popularisation of Innovative handloom technologies amongst Rural Artisans.

6. Rural Clusters

Dairy Cluster

India is one of the largest milk producing country, yielding about 14.5 percent of the total milk produced in the world. A sizable quantity of surplus milk, because of its perishable nature, is wasted by unorganized sector due to lack of awareness of correct practices of procurement, handling, transport, storage, marketing resulting in low quality end product. Thus there is need to upgrade the dairy people working in unorganized sector by making them aware of better processing and preservation and packaging techniques available for value addition. This awareness is expected to lead to better quality of products with long shelf life.

During 2009-10, NRDC organised an interactive meet to provide skill development training on value added dairy technologies like paneer, khoa, yoghurt

at Bijnore and Muzaffar Nagar. This has helped in improving the awareness of technological practices for dairy farms and halwai associations. It is observed that they have also adopted hygienic methods of milking and storing.

During 2010-11 NRDC conducted one day Awareness Programme at Bijnore and Mordabad on 15-16 November, 2010. More than 300 Dairy firms and sweet makers in each place showed interest in the awareness programme. Various problems associated with shelf life, storing and packaging were discussed. They have shown interest in testing synthetic milk, khoa machines and other detection systems for the benefit of dairy cluster. (Fig. 52).



Fig. 52: Dairy Cluster meet at Moradabad

Coir Cluster

Coir cluster is the most important sector in the coconut growing areas but unfortunately the clusters are still practicing traditional technologies and use old looms for processing of fibre.

Central Coir Research Institute under financial assistance from Corporation has distributed the spraying equipment to the various co-operatives of coir processing industries and as a result large number of women workers were benefitted.

This has developed infrastructure in the weaving sector with modern equipment, which has resulted not only in enhancing the productivity and quality but also increasing the economy of the regions.

During the year one loom has been provided to a Coir Cooperative in Kerala and two more looms have been made ready for distribution to other cooperatives in Kerala.

During 2010-11, under financial assistance from Corporation has distributed the spraying equipment for softening of coir to various co-operatives of coir processing industries & large number of coir processing industries and large number of coir workers have been benefited from this. (Fig. 53).



Fig. 53: Coir processing at CCRI

Sericulture Cluster

During 2009-10, NRDC through CSB and in turn NSSO, Bengaluru and CSRTI, Mysore had drawn schemes to identify and support financially and technologically the sericulturists of Kanakapura area. The components are as follows :

1. Establishment of Chawki Rearing Centre (CRC)
2. Establishment of Farmers Field School (FFS) and 'on farm' training.

The Chawki Rearing Centre has shown improvement in yield and also adoption of better methods of sericulture farming in and around 20 villages of Kanakapura taluk. The training program to the farmers drawn from the villages is continuing batch wise at CSR&TI, Mysore.

At Ramanagaram, another 200 farmers have been benefited by the demonstration of the equipments & sericulture related technologies. The Farm Field equipments are currently being utilized by the training section of Silkworm Seed Technology Laboratory for the purpose of dissemination of technology to the farmers of the Bangalore rural/

seed area and also to those from other sericulture States of India.

During 2010-11, a survey has been undertaken jointly by Central Silk Board and National Research Development Corporation in the traditional and non-traditional regions in the Coastal Regions of Andhra Pradesh and Tamil Nadu for identification of the technological gap areas in Bivoltine Silkworm Rearing that are presently being followed by the Sericulture farming community.

7. Exhibitions and Publicity

Corporation has been participating / organizing exhibitions, get-togethers, workshops, trade fairs etc. to provide information on indigenous technologies to industry. Through display the corporation creates awareness among the visitors and co-participants for transferring technologies for setting up the plants. (Fig. 54).



Fig. 54: NRDC Technologies on Display at an exhibition in Udaipur

During 2009-10, the Corporation participated in 37 exhibitions. Some of the exhibitions participated by the Corporation are:

- Winning edge technologies from NRDC
- Technological key to wealth
- Technologies and long term Economic growth
- 13th National Science Expo
- Food Safety Management in Dairy and Agro Based Food Products
- ISBA 2010

During 2010-11, the Corporation participated in 23 exhibitions. Some of the exhibitions participated by the Corporation are:

- ◆ Campro Tech India 2010
- ◆ TechTop 2010, Thiruvanthapuram
- ◆ 14th National science Exhibitions
- ◆ Hortica Expo-2010
- ◆ Conclave at Ghana and Burkina Faso

8. Publications

In order to disseminate information on new technologies, Corporation brings out various publications in the form of catalogues, brochures of technological opportunities etc. During 2009-10, Corporation published three special publication namely "Catalogue on life sciences containing 23 leaflets on various technologies", Annual Report & Memoir - a publication on Innovate India.

During 2010-11, Corporation published five special publications which are as follows:

- a. Brochure on "Business plan competition for women students"
- b. ET - ideas 4 U Brochure
- c. CSIR 800 Brochure
- d. Green Technologies for sustainable Agriculture (Booklet)
- e. Docket containing leaflets on 16 technologies related to Green Technologies in Agri sector

9. Market Surveys

The Market Survey Reports play an important role in the commercialisation of technologies. Conducting market survey for the assigned technologies helps to gather vital information about current market trends, customers, competitors, and potential areas of growth, enterprises around the country / world etc.

Market survey for a technology is the key factor to get advantage over competitors in market. The survey provides important information to identify and analyze the market need, market size and competition. Industry analysis & business research

is helpful in decision making for launching new products in market.

During 2009-10, market survey was carried out for 18 technologies. Some of them are as follows:

- ◆ Autograft tissues for burn patients
- ◆ Infectitious bursal disease (IBD) kit
- ◆ Sheep pox vaccine
- ◆ Haemorrhagic septicaemia (HS) vaccine
- ◆ DNA rabies vaccine

During April to December 2010, Corporation carried out market survey for 2 technologies which are:-

- ◆ Brucheck: Dot-ELISA Kit for Brucella melitensis detection in Goats and Sheep
- ◆ Indigenous ELISA Kit for the diagnosis of Johne's disease in goats, sheep, cattle, buffaloes and other ruminants and Crohn's disease in human beings

10. Business tie-ups

The Corporation continued to lay emphasis on broadening and strengthening the Technology resource base by nurturing long-term relationships with R&D institutions as well as universities, technical organisations, industries and also individual inventors. This endeavour is reflected in the Corporation signing Memorandums of Understanding/Agreements with several new organisations for assignment / Promotion of technologies developed by them. During 2009-10 Corporation signed MoU with 15 national and 5 international organizations. Some of them are:

- ◆ Agreement signed with G.B. Pant University for assignment of technologies
- ◆ MoU with CTCRI for assignment & Commercialisation of Technologies
- ◆ Council of Scientific & Industrial Research, Ghana
- ◆ MoU with JNU for assignment of Technologies
- ◆ MoU signed with Jamia Hamdard, Hamdard Nagar, New Delhi for assignment of Technologies



Fig. 55: Signing of Agreement with ICMR

During April to December 2010 the Corporation has signed MoU with:

- ◆ Orissa Agricultural University
- ◆ Centre for emerging technologies, JAIN University for commercialisation of Technology, Begaluru
- ◆ Society for Economic & Social Studies, New Delhi
- ◆ Indian Council of Medical Research (Fig. 55).

11. Knowledge Management System (KMS) for Technology Promotion

Knowledge Management System is a self-propelled mechanism for systematic evaluation of the technologies, by a team of experts for value addition to the extent possible for making a complete technology package for setting up commercial plant. Three expert Panels in the area of Biotechnology, Agriculture and Ayurveda & Herbal have been formed. During 2009-10, 10 KMS meetings were organized in which 26 new technologies were discussed and During 2010-11 till December 10 new technologies were discussed in 2 meetings.

12. Basic Engineering Design Package (BEDP)

The major objective of the activity is to provide value-addition to the promising technologies for quick and effective utilisation of the technology so developed and also to Instil confidence amongst the entrepreneurs. BEDP also provides deeper insight and clarity regarding the workability of the technology.

The package developed would contain:

- ◆ Design Basis
- ◆ Block flow diagram for the process
- ◆ Process description
- ◆ List of equipments
- ◆ List of instruments
- ◆ Process Data Sheets (PDS) for equipments
- ◆ PDS for Instruments
- ◆ Process Flow Diagrams (PFD's) for the Process
- ◆ Process & Instrumentation Diagrams (P&ID) for the Process

During 2009-10, Corporation identified 5 technologies related to Bio-technology and 9

technologies related to agriculture for developing BEDP.

During April to December 2010 three packages were developed, which are:

1. Pongamia oil based pesticide soap for Agriculture
2. RTV Silicone compound for coating
3. Mancozeb

13. Technology Development Programme for Priority Projects

The Corporation has been undertaking the programme for the development of some of the important technologies developed by various R&D institutes / universities by financing the Institutes in collaboration with industry. The technology development projects undertaken by the Corporation for further development are either for setting up pilot plant, semi-commercial or demonstration plants, carrying out field trails, toxicological data generation, etc. The progress on the major technology development projects is given below:

Projects completed in 2009-10

- ◆ Development of Dip Coating Machine for Coating Sol-Gel on Ophthalmic Lenses

On-going Projects for 2010-11

- ◆ Field Efficacy Data on Super Absorbent Hydrogel
- ◆ Field Trial Evaluation of Bio-release Zinc Fertilizer
- ◆ Bio-assay Efficacy Test for the Process Plant based Mosquito Larvicide
- ◆ Field Efficacy Data on Biopesticidal Nematode

14. Program for North-Eastern (NE) States

During 2009-10, The Corporation organized four Entrepreneurship Development Programs (EDP) of one month duration each at Roing, Arunachal Pradesh; Kolasib, Mizoram; Jorhat, Assam and Tura, Meghalaya. The programs at Roing and Kolasib were on food processing, and EDP at Jorhat and Tura were on extraction of banana fibre and its fabrication into useful products. The North East Industrial & Technical Consultancy



Fig. 56: Skill development Training in N E

Organization (NEITCO), Guwahati organized these programs on behalf of the Corporation. The

Corporation also provided financial assistance to NEITCO for purchase of 2 sets of banana fibre extraction machines. The programs were attended by 100 young participants with due representation of women from North Eastern states.

In order to accelerate the growth of industrialization in North-Eastern States and develop entrepreneurship in the region, the Corporation has carried out the following programs during 2010-11 till december:

- ◆ Provided financial assistance to NEITCO for providing skill development training on Areca Leaf Plate & cups, Banana fibre extraction making unit at Guwahati.
- ◆ Conducted EDP at Imphal, Manipur on Food Processing (Fig. 56).

15. Women Entrepreneurship Development Program (WEDP)

Corporation initiated Women Entrepreneurship Development Program with the objective to empower women by improving their economic status and bringing them into the mainstream of development through entrepreneurship development. 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 & technology; motivate women for stressing the need for economic



Fig. 57: WEDP organised at AMU

empowerment and provide skill training on the need based technologies through R&D Institutions/universities. During 2009-10, more than 3,000 students got benefited from the workshops & training programs conducted and a large number of students have shown interest in taking up entrepreneurship. There was a demand from the university for providing skill training to women students in taking up entrepreneurship. Technologies have been identified by Bharathiar University, Bharathidasan University and Andhra University for food processing and honey extraction in collaboration with TNAU. Other technologies identified include banana fibre extraction, sanitary napkins and areca nut plate making in collaboration with Tiruchirappali Tiny/Small Industries Corporation and value added products in Fisheries in collaboration with CIFT, Visakhapatnam. (Fig. 57).

Technology Awareness Program in Coir Fibre processing for the Benefit of Women Workers

This is a ongoing three year program started in the year 2008-09. In the extraction process of husk from coconut, defibering machines are used. The fibre is harsh and so has to pass through the fingers of women workers. A new Process has been developed which is eco-friendly, does not generate effluent and the machines can be easily operated by women. The process yields good quality coir yarn with more output, superior texture and zero effluent. As a result of this large number of women workers working under various coir cooperatives have been benefited. This enhanced the overall output of the coir processing units.

Dry Fish Complex: A consultancy project for setting-up a dry fish complex of capacity 500 Kg/ batch using solar energy was successfully completed during 2009-10. The project was intended to provide infrastructure facilities and machinery support to self help group of Fisherwomen

During 2010-11 the corporation conducted Entrepreneurship Development Program for Women at Ch. C.S. University, Muzaffarnagar and another

at Aligarh Muslim University. These programs are mainly aimed at final year women students who are informed regarding latest technologies which can be taken up for commercialization.

16. Human Resource

The total manpower of the Corporation as on 31st March, 2010 was 87 viz. (Group A-32, Group B-31, Group C-19 and Group D-5).

During 2009-10, there were no employees receiving remuneration in excess of Rs.24 lakhs per annum or Rs.2,00,000 per month, requiring disclosure as per the Provisions of Section 217(2A) of the companies act, 1956 read with the Companies (Particulars of Employees) Rules 1975.

17. Human Resource Development

The thrust for better utilisation of Human Resource and improvement in work practice continued during 2009-10.

Training and development at all levels of employees was given due priority by the Corporation to increase effectiveness. Special emphasis was given to organisation building and shaping right attitudes, team building and work culture, besides preparing employees to understand the trends in fast changing technology and switching over to latest technology for achieving higher results in productivity and profitability. During 2009-10 year 22 executives of the Corporation were deputed to various training programmes to further develop their skill in various areas of management, communication, vigilance and advancement of technology.

18. Technology Absorption, Adaptation and Innovation

While a major objective of the corporation is the development and commercialisation of indigenous technology, the Corporation itself does not carry out any R&D. However, it promotes and finances R&D on a selective basis in both laboratories and industry. Hence the requirement to furnish information in respect of Technology Absorption, Adaptation and Innovation under Rule 2(B) of Companies (Disclosure of Particulars in the Report of Board of Directors) Rules, 1988, is not applicable to the Corporation.

19. Implementation of Official Language

The Corporation continued to make efforts to fulfil the targets prescribed by Govt. of India in the Official Language Act and Rules framed there in with regard to increasing the use of Hindi Rajbhasha in office during the year 2009-10. 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 in both Hindi & English since 1986-87. The Corporation also publishes a popular Science & Technology monthly magazine in Hindi, entitled 'Awishkar'.

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