

**National Research Development Corporation**

6733. SHRI YELLAIAH NANDI: Will the PRIME MINISTER be pleased to state:

(a) the broad objectives of the National Research Development Corporation;

(b) whether the National Research Development Corporation also commercialises the Indigenous technologies;

(c) if so, the technologies sold to various entrepreneurs and foreign companies during the last three years and the value realised from each technology thus sold; and

(d) the studies undertaken by the National Research Development Corporation in the field of electronics and pharmaceuticals during the last three years and the charges paid for each study?

THE MINISTER OF STATE IN THE  
MINISTRY OF PERSONNEL, PUBLIC

GRIEVANCES AND PENSIONS (SHRIMATI MARGARET ALVA): (a) The broad objectives of the National Research Development Corporation (NRDC) are given in the attached statement-I

(b) NRDC licenses indigenous technologies to Industry for commercialisation.

(c) The technologies licensed to various entrepreneurs during the last three years (1988-89 to 1990-91) and the money value realised from each technology licensed, are in the attached statement II. The corresponding information in regard to foreign companies is given in the attached statement III.

(d) The studies got undertaken by the Corporation by external agencies in the fields of Electronics and Pharmaceuticals during the last three years and the charges paid for each study are given in the attached statement IV. However, the Corporation itself has undertaken several studies in-house of which a Project Report on Thick Film Hybrid Micro Circuits is a case in point in the areas of Electronics.

**STATEMENT - II.****OBJECTIVES OF NRDC**

- Commercialisation of Laboratory know-how
- Provide Technology Development Loans for setting up Pilot Plant to prove/scale-up laboratory processes prior to commercialisation.
- Licence indigenous technologies to industry
- Participate in equity to facilitate formation of new ventures using indigenous technologies
- **PROMOTION AND COMMERCIALISATION OF INVENTIONS**
- Provide financial support to prospective inventors
- Award meritorious inventions
- Assist inventors in commercialisation and patenting
- **DEVELOPMENT AND PROMOTION OF RURAL TECHNOLOGY**
- Identify, prove and demonstrate selected rural technologies
- Assist in commercialisation of selected rural technologies
- **EXPORT OF TECHNOLOGY**
- Promote export of technologies successfully commercialised in India.

— Execute turnkey projects abroad based on indigenous technologies

— Project India as a source of technology

• **DISSEMINATION OF INFORMATION ON TECHNOLOGY TRANSFER**

— Provide information on indigenous technologies

— Organise training programmes for Technology Development and Transfer

— Hold exhibitions, publish periodicals, arrange audio-visuals to popularise indigenous technologies

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## STATEMENT - II

Technologies Licensed by NRDC over the Three year Period 1989-89 to 1990-91 and Money Value Realised from each

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
1.	100W UHF Transmitting Antennas	0.53
2.	26 Channel RN Receiver (Modification Kit)	1.53
3.	S—Band Signal Generator for TVRO	1.23
4.	Lead Zirconate Titanate for High Powered Transducers	2.03
5.	High/Low Impedance Piezoelectric Accelerometer	0.23
6.	Solar Candle Making Machine	0.03
7.	Construction of Skirted Granular Piles	0.35
8.	Fire Retardant Paint	0.75
9.	Mini Climbing Crane	2.10

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
10.	Silicate based Water Proofing Formulation	0.50
11.	Water Proofing System for Exposed Masonary Lime Concrete Surface	0.10
12.	Corrugated Roofing Sheets from Coir Waste/Wood Wool	0.20
13.	Burning Building Bricks by Semi Mechanised Process including High Draught Kiln	2.60
14.	Improved Burning of Lime Stone	0.07
15.	Bored Compaction Piles	0.75
16.	Concrete Block Making Machine	0.25
17.	Solar Water heater (Large & Domestic Size)	0.05
18.	Brick Making Machine Extrusion	0.25
19.	Oil For Treatment of Psoriasis	0.20

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
20.	Cadmium Selenide Photo Conductive Cells	0.23
21.	Rust Converter	0.35
22.	Anti Corrosive Treatment to Steel Reinforcement Rods	2.03
23.	Aluminium Alloy Anodes, Zinc Alloy and Magnesium Alloy	2.03
24.	Acid Inhibitor in Solid Form	1.25
25.	Corrosion Meter	0.25
26.	Lead Acid Storage Batteries of 6 Volt-100 AH Plate type	0.728
27.	Potassium Iodate	0.23
28.	Zinc Ethyl Silicate Premier	0.15
29.	Copper Plating on Stainless Steel	0.63

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
30.	Succinic Acid	0.35
31.	Nickel Cadmium Batteries (Vented Type) and Sealed Type)	0.90
32.	Magnesium Cuperious Chloride Water Activated Batteries	0.10
33.	Magnesium Silver Chloride Water Activated Batteries	0.20
34.	Ion Selective Electrodes for Silver Cupric and Chloride Ion	0.10
35.	Calcium Halophosphate Daylight Phosphor	0.25
36.	Thick Film Hybrid Micro Circuits	4.50
37.	Microprocessor based Electronic Telephone Exchange	6.00
38.	Monochrome TV Picture Tubes	5.00
39.	Fly Ash Bricks	1.10
40.	Wax Emulsion	0.05

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
41.	Pectin from Pectineous Material	0.60
42.	High Gamma BHC (Lindane)	1.00
43.	Garlic Powder	0.80
44.	Instant Mango and Lime Pickle	0.05
45.	Spice Oleoresins	1.00
46.	Spice Oils	0.20
47.	Terpeneless Oil by Chromatographic Method	0.10
48.	Minitume Tablets	0.10
49.	Natural Food Colours	0.40
50.	Synthetic High Aluminium Aggregates	2.50



Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
51.	Single Fired Vitreous Type Matt Glazed Ceramic Tiles for Flooring & Facing	1.25
52.	Mica Based Texturised Coating	0.15
53.	Insulating Brcks from Rice Husk	1.20
54.	High Alumina Cement	0.75
55.	Glass Reinforced Gypsum & Plaster of Paris	2.00
56.	Glass Bonded Mica	0.05
57.	Ceramic Colours	0.50
58.	Glass Electrodes for pH, pNa and pk Measurement	0.558
59.	Heat Wheel (Rotary Regenerator) for Max Flue Gas Temp 86C	0.40
60.	High Alumina Cermics	0.50
61.	Sodium Silicate from Rice Husk Ash	0.20

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
62.	Environmental Data Acquisition System	0.05
63.	Lacquer CA	0.10
64.	Myrobalan/Wattle Tanning Extracts	0.25
65.	Sulphited Oil Fat Liquors	0.10
66.	Syntan Pur	0.209
67.	Antifungal Tablets	0.10
68.	Zirconium Salts from Zirconium Sands	0.10
69.	Acrylic Resin Emulsion as Binder "Binder RS"	0.10
70.	Friction Welding Machine	0.50
71.	Rescalite	0.25

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
72.	Non-fade ECG Monitor System	0.15
73.	Miricardioscope	0.05
74.	Cu-zn-Al Shape Memory Alloy	0.20
75.	Electrospot Testing Kit for Ferro and Nonferrous Alloys	0.103
76.	Ultrasonic Hardness Tester	0.15
77.	Magnesium Sulphate (Epsom Salt)	0.30
78.	Table Salt & Dairy Salt	0.05
79.	Sodium Chloride IP & AR	0.10
80.	Dry Chemical Powder for Extinguishing Fires Involving Metals	0.10
81.	Water Testing Field Kit	0.401

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
82.	Dry Shampoo	0.25
83.	Instant Gel	0.403
84.	Microprocessor Trainer Kit	0.25
85.	Educational Robots	0.25
86.	Anti-Resistant Insecticidal Formulations	0.25
87.	Monocrotophos Technical including Monocrotophos 36-WSC	18.75
88.	Cardanol and Other Products based on Cardanol and Cashew Nut Shell Liquid	0.25
89.	Monochloro Acetic Acid	2.50
90.	RE-refining of used IC Engine Crank Case Oil	0.73
91.	Precipitated Silica from rice Husk	0.20

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
92.	Spiral Grooved Grinding Wheels	2.00
93.	Rice Husk Particle Board	10.65
94.	Hypospray Jet Injector	0.10
95.	Bone Stimulator	0.25
96.	Eddy Current Precision Wire Tensioner	0.27
97.	Automatic Charger for Lead Acid batteries	0.05
98.	Foil Type Strain Gauges	0.83
99.	Bonded wire Strain Gauge Column Type Load Cells	0.10
100.	Necebone	0.20
101.	Theophylline, Aminophylline, Caffeine	1.00

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
102.	Ethephon	0.25
103.	Vitamin B6	4.00
104.	Can Sealing Composition Based on Natural Rubbeer	0.30
105.	Radiosonde Thermister	0.25
106.	Chloroscope	0.05
107.	Chlorine Tablets	0.50
108.	Air & Nitrogen Atomised Extra Fine Non-farrous Metal Powders	0.35
109.	Zinc Oxide from Zinc waste such as Zinc Ash/Zinc Hydroxide	0.60
110.	Electrolytic Manganese Dioxide	10.00
111.	Non Ferrous Metal Powder	0.70

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
112.	Inhibitor Suitable for Pickling of Steels in Hydrochloric Acid Solutions room Temp	0.20
113.	Direct Reduced Iron (Sponge Iron) by VRDR Process	2.00
114.	Black Stamp Cancellation Ink	0.35
115.	Silver Impregnated Graphite Contacts	1.10
116.	Flat Plate Collector	0.10
117.	Liquid Nitrogen Containers	0.15
118.	Flexible Graphite	1.35
119.	Magnetic Tape	0.30
120.	Indelible Ink	0.25
121.	Recovery of Silver from Waste Hypo Solution	0.10

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
122.	Toe Load Measuring Device	0.20
123.	Improved Liquid Fuel Burner	1.00
124.	Synthetic iron Oxide black & Red	0.20
125.	Dichlorovos	2.00
126.	Cardanol & CNSL Based Surface Coatings	0.75
127.	Menthol from Mint Oil	0.20
128.	Silica Gel	0.20
129.	Caffeine from Tea Wastes	0.50
130.	Diosgenin	0.50
131.	Water Filter Candles	1.00



Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
132.	Thermographic Paper	1.50
133.	Phosphamidon Technical Including Phosphanidon 85-WSC	2.00
134.	Direct Copy Paper	0.40
135.	Paper Slate	0.10
136.	Handy Layout Technique for Moulding of Banana Fabric Composite	0.05
137.	Partially Defatted Edible Coconut Grating	0.45
138.	High Pungent Fraction and Colour from Indian Spice Oleoresin	0.15
139.	Bottling of Coconut Water	0.15
140.	Disposable Blood Bags, Soft Shell Blood Oxygenator & Soft Shell Blood Oxyg. & sof	12.00
141.	Semi-automatic Building Blocks Making Machine	0.20

Sl. No.	Technology	Money Value Realised (Rs. lakhs)
1	2	3
142.	Pre-cast Ferrocement Cylindrical Units	1.80
143.	Fibre Reinforced Cement Concrete Manhole	0.55
144.	Ferrocement Manhole Covers for heavy duty	0.875
	Total	145.202

## STATEMENT - III

*Technologies Licensed to Foreign Companies During the years 1988-89 to 1990-91 and the Money Value Realised from each*

<i>Sl. No.</i>	<i>Technology</i>	<i>Value of Contract* (Rs. in lakhs)</i>	<i>Money Value Realised to date (Rs. in lakhs)</i>
1	2	3	4
1.	Tricontanol	15.15	2.65
2.	Dehydrated Green Paper	33.46	5.41
3.	Synthetic and Natural Dyes	120.30	20.15
4.	Menthhol	72.66	72.66

Includes know how, consultancy and supply of plant and machinery.

**STATEMENT - IV****A. ELECTRONICS****MARKET SURVEY REPORTS**

- (1) On Bio-Medical Devices conducted by M/s. Chanakaya Consultants Pvt. — Charges — Rs. 60,000/-
- (2) On the following Electronic Products
- (i) Educational Robot
  - (ii) Microprocessor Trainer Kit
  - (iii) EPROM Programmer
  - (iv) Digital Conductivity Meter
  - (v) Ultrasonic flowmeter (wettted type + vortex type)
  - (vi) Industrial Timer
  - (vii) Ultrasonic Viscometer
  - (viii) Automatic Bio-chemical Analyser
  - (ix) Linear Accelerator

(x) Universal Counter/Timer by M/s Behoam Wadia and Associates

— Charges Rs. 65,000/-

**PROJECT REPORTS**

(1) Report on Monochrome TV Picture Tube Phosphor-Charges - Rs. 1.15 lakhs to Central Electronics Ltd.

**B. PHARMACEUTICALS**

**MARKET SURVEY REPORTS**

(1) On Collegen Sheets conducted by M/s. Business Horizon, — charges Rs. 30,000/-

(2) On Spirulina Algae conducted by M/s. Business-Horizon — charges Rs. 30,000/-

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**Survey of Cycle Corporation Of India**

6734. SHRI HARDHAN ROY: Will the PRIME MINISTER be pleased to state:

(a) whether M/s. Tata Consultancy Limited have undertaken a survey of Cycle Corporation of India Ltd. Kanyapur/Kalyani, West Bengal and have recommended some measures to make it viable;

(b) if so, whether the Government have examined the report and have accepted it; and

(c) if so, the modus operandi of its implementation?

THE MINISTER OF STATE IN THE MINISTRY OF INDUSTRY (SHRI P.K. THUNGON): (a) Yes, Sir. The Comprehensive Viability Study has been undertaken by M/s. Tata Consultancy Service, commissioned by Cycle Corporation of India Ltd., Calcutta.

(b) and (c) The report is being examined by the company in the first instance.

[*Translation*]

**Inclusion Of Potato In The Category Of Food**

6735. SHRI UPENDRA NATH VERMA: Will the Minister of FOOD be pleased to state;

(a) whether the Government propose to include the edible roots like potato and sweet potato in the category of food;

(b) if so, the details thereof; and

(c) if not, the reasons therefor?

THE MINISTER OF STATE OF THE MINISTRY OF FOOD (SHRI TARUN

GOGOI): (a) to (c). The root crops like potato and sweet potato are already considered as the food crops. However, there is no separate category or compilation of production of total food crops as such.

[*English*]

**Production Targets of H.P.C.**

6736. SHRI UDDHAB BARMAN: Will the PRIME MINISTER be pleased to state:

(a) whether there has been shortfall in achieving the production target of Cachar Paper Project, Hindustan Paper Corporation, Pachgram for a considerable period and production target is also showing a decline almost daily; and

(b) if so, the reasons thereof?

THE MINISTER OF STATE IN THE MINISTRY OF INDUSTRY (SHRI P.K. THUNGON): (a) and (b). The Cachar paper Mill of Hindustan Paper Corporation went into commercial production in April, 1988. The production during the last three years is:

<i>Year</i>	<i>M. T.</i>
1988-89	37,435
1989-90	47,160
1990-91	57,624

The targetted production could not, however, be achieved due to certain problems in boiler and T.G. set, Grid power and monsoon conditions.

In the first five months of 1991-92, the mill achieved a production of 20,845 MT. against the target of 32,000 MT. The production at the Mill is usually lower during monsoon compared to the other months of the year on account of floods, land slides, trans-