REPORT OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA

FOR THE YEAR ENDED 31 MARCH 1995

NO.6 OF 1996

UNION GOVERNMENT (SCIENTIFIC DEPARTMENTS)

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Preface

This Report for the year ended 31 March 1995 has been prepared for submission to the President under Article 151 of the Constitution.

This volume covers matters arising from test-audit of the transactions of the Scientific Departments of the Union Government, the autonomous bodies funded by these Departments and some major scientific organisations associated with other Departments.

The Report includes audit reviews on the following :

i) National Programme on Improved Chulhas
ii) Indian Agricultural Research Institute
iii) National Physical Laboratory
iv) Central Road Research Institute
v) Central Glass and Ceramic Research Institute

Of the audit reviews, the one on National Programme on Improved Chulhas relates to the Ministry of Non-conventional Energy Sources. This is an All-India review incorporating the results of test-audit by Accountants General of fifteen states and other implementing organisations and test-check of the records in the Ministry.

The cases mentioned in this Report are those which came to notice in the course of audit during 1994-95 and early part of 1995-96. For the sake of completeness, matters relating to earlier years which could not be covered in the previous Reports are also included. Similarly, results of audit of transactions subsequent to 1994-95 have also been mentioned wherever available and relevant.

Overview

R&D expenditure of the major Scientific Departments and agencies of Government of India during 1994-95 was Rs 3847 crores, of which, Defence Research and Development organisation (Rs 1240 crores), Department of Space (Rs 757 crores) Indian Council of Agricultural Research (Rs 494 crores) Department of Atomic Energy (Rs 446 crores), Department of Science and Technology (Rs 390 crores) and Council of Scientific and Industrial Research (Rs 246 crores) accounted for Rs 3573 crores. The share of the private sector in the total R&D expenditure of the country in 1993-94 continued to be only around 15 **per cent**. R&D expenditure of the country as percentage of GNP decreased from 0.93 **per cent** in 1989-90 to 0.82 **per cent** in 1993-94.

There was an overall saving of Rs 478 crores against the budget allotment of the Scientific Departments / Institutions. This constituted about 9 **per cent** of their total allotment. Some of the major departments/ institutions where substantial savings occurred were Atomic Energy (Rs 288 crores), Electronics (Rs 53 crores), Non-conventional Energy Sources (Rs. 24 crores), Environment and Forests (Rs 31 crores) and C-DOT (Rs 37 crores).

19798 utilisation certificates with aggregate value of Rs 683.38 crores against grants-in-aid provided by the Scientific Departments were awaited. This did not include the utilisation certificates awaited in Ministry of Non-Conventional Energy Sources, where the records were stated to have been destroyed in fire.

Some of the important results of audit of the Scientific Departments and agencies (except DRDO) are set out in this overview.

Department of Atomic Energy

(i) Delay in completion of project

Department of Atomic Energy could not complete the project 'Loss of coolant accident' for conducting safety

related experiments and generating data for computer code validation in more than 10 years since its approval in 1985 due to changes in scope of the project two years after the due date of completion in 1990. Equipment and stores valued at Rs 29.35 lakhs procured during 1986-92 are lying idle due to tardy progress of the project.

(Paragraph 2.1)

(ii) Unfruitful expenditure on exploratory mining

Exploratory drilling up to II level for estimation of uranium reserve at Bagjata mines in Singhbhum district of Bihar and collection of bulk samples from there for examining ore characteristics and conducting leachability studies was carried out by Atomic Minerals Division **(AMD)** during March 1986 to January 1990 at a cost of Rs 314.74 lakhs. In the opinion of Uranium Corporation of India Limited **(UCIL)**, which is responsible for commercial exploitation, the exploratory drilling undertaken only upto the II level, did not provide adequate confidence for commercial exploitation unless exploratory drilling was undertaken upto the IV level. However, the decision of the AMD not to proceed with further exploratory drilling has put a question mark on commercial exploitation in future.

(Paragraph 2.2)

(iii) Delay in completion of projects

Department of Atomic Energy approved projects 'Waste Immobilisation Plant **(WIP)**' and 'Solid Storage Surveillance Facility **(S3F)**' for management of intermediate and high level radioactive wastes generated at the Power Reactor Fuel Reprocessing Plant Tarapur in 1972. While WIP was scheduled to be completed by 1978, S3F was scheduled for 1985. WIP was commissioned after a delay of five years with a cost overrun of Rs 6.39 crores, S3F is yet to be commissioned although Rs 17.15 crores has already been spent against the initial estimate of Rs 10.01 crores. The project has been progressing at extremely slow pace on account of problems faced due to indigenisation, changes in design required by regulatory authorities, delay in completion of trials and changes in technology over the last two decades. Thus,

immobilisation and storage surveillance of nuclear waste conceived more than two decades ago to protect human being and environment from radiological hazards, was yet to become fully operational.

(Paragraph 2.3)

Ministry of Non-Conventional Energy Sources

(i) National Programme on Improved Chulhas

Ministry of Non-Conventional Energy Sources spent Rs 79 crores towards subsidy and other incidental expenditure during 1990-95 for providing improved smokeless and fuel efficient chulhas to 112 lakh households through State Governments and other nodal agencies under the Centrally Sponsored 'National Programme on Improved Chulhas'. The Programme has twin objectives of saving the rural women from drudgery of cooking and health hazards besides controlling the degradation of forest cover.

Until 1994-95, improved chulhas have been supplied to only 16 **per cent** of targeted households in 10 years of this Programme. At the present level of funding, it would take another 40-50 years to cover the entire target households under this Programme. Review of the scheme brought out cases of excess expenditure (Rs 23.05 lakhs) excess claim of subsidy (Rs 4.79 crores), wastage due to chulhas not constructed in accordance with the specifications, non-realisation of beneficiary contribution (Rs 1.98 crores) etc. Surveys and feedback reports suggested that the intended benefits were far from being realised since in large number of cases the chulhas were either dismantled by the owners on account of poor performance or defects in design and material used. This indicated lack of motivation for sustained use of the chulhas among the users. Mass publicity and awareness campaign was also found to be deficient.

(Paragraph 3.1)

(ii) Wasteful expenditure

Solar Energy Centre procured an equipment worth Rs 6.12 lakhs in July 1987, which had not yet been installed as the equipment was found to be of no use to the Centre.

(Paragraph 3.2)

Indian Council of Agricultural Research
(Department of Agricultural Research and Education)

(i) Indian Agricultural Research Institute

The Research, Academic, Executive and Extension Councils of IARI are meant to provide assistance to the Board of Management in proper and effective discharge of its duties and responsibilities. Each of the Councils is required to meet once in every quarter. While the Research Council did not meet even once during 1990-95, other Councils also met only occasionally. Consequently, the institutional arrangement for selection and review of research projects and other administrative functions did not work in accordance with the guidelines issued by ICAR. While no new projects were undertaken during 1990-94, 230 ongoing projects were closed in March 1994 without the Research Council reviewing any of them. Contrary to ICAR's directions for preparation and maintenance of research project files **(RPFs)**, separately for each project, to enable the latter to conduct review on the progress of various projects, no RPF was sent to ICAR during the entire period of the Audit review.

(Paragraph 4.1)

(ii) Delay in supply of boats

Central Inland Capture Fisheries Research Institute, Barrackpore failed to get supply of three mechanised boats for which supply orders were placed in March 1990 and advance payment of Rs 13.86 lakhs was made to the supplier. The boats were to be supplied within 12 months of approval of technical drawings in October 1990. Thus, the objectives of undertaking research in capture fisheries for which the

mechanised boats were ordered were delayed by over 4 years (Paragraph 4.2))

(iii) Recovery at the instance of Audit

Indian Agricultural Statistic Research Institute did not levy penalty, in terms of the contract with a firm, for delay in supply and installation of computer hardware and software. On being pointed out by Audit, ICAR stated that penalty of Rs 8.27 lakhs would be recovered from the balance 20 **per cent** payment due to the contractor.

(Paragraph 4.3)

Council of Scientific and Industrial Research

(i) National Physical Laboratory

Out of 105 in-house projects, 37 were abruptly closed during 1990-95. Not a single in-house project was completed during this period. 29 projects were continuing for periods ranging from 10 to 45 years. NPL did not maintain project-wise files / records, which rendered it difficult to conduct their review with a view to ascertaining the reasons for their continuation. The Research Council did not conduct review and assessment of each on-going R&D project. Premature closure of the projects sponsored by Department of Science and Technology and Ministry of Non-Conventional Energy Sources rendered the expenditure of Rs 11.16 lakhs unfruitful. NPL incurred extra expenditure of Rs 12.88 lakhs on purchase of "Atomic Cesium Clock" and unfruitful expenditure of Rs 14.63 lakhs on purchase of two other equipment. Failure to invest surplus funds in short-term deposits, resulted in loss of interest of Rs 40 lakhs.. The Laboratory did not have any mechanism to monitor realisation of royalty from the parties to whom technologies were transferred.

(Paragraph 5.1)

(ii) Central Road Research Institute

Review of the working of the Institute revealed that sponsored and consultancy projects got preference over in-

house projects. While 138 sponsored and consultancy projects were completed during 1989-95, only six in-house core- area projects were completed during this period. The receipt from consultancy and sponsored projects did not meet even the cost of direct manpower deployed on them in some years. While 50 to 61 **per cent** of the scientists of the institute were engaged on consultancy and sponsored projects, the receipt from them constituted less than 25 **per cent** of R&D expenditure during 1990-95. The Planning Monitoring and Evaluation group of Institute did not maintain project-wise data on all projects undertaken , approved cost and duration, expenditure incurred and manpower deployed on them. This deprived the Institute of the scope to monitor the cost and time of each project. There were cases of infructuous expenditure, non installation and delay in installation of equipment valued at Rs 226 lakhs in nine cases. Non-investment of surplus funds resulted in loss of interest of Rs 13.63 lakhs.

(Paragraph 5.2)

(iii) Central Glass and Ceramic Research Institute

Out of 18 in-house projects scheduled to be completed by Central Glass and Ceramic Research Institute during 1990-95, only 9 were completed with time overrun of upto 5 years. Owing to delay in completion of project on "Optical communication fibre" costing Rs 152.80 lakhs, the parties showing initial interest backed out rendering the expenditure infructuous. The technical monitoring cell of CGCRI had no system for obtaining feedback from the sponsoring agencies on commercial exploitation of the research outputs . Pilot plant for developing optical glass technology was not successful since the optical glass was available in market at much cheaper rate. While the revenue expenditure on this plant increased, operation of the plant added only to unsold stock of optical glass. The science & technology committee of CGCRI did not review most of 21 on-going projects during January 1992 to March 1995. Project costing and budgeting had not been introduced despite directive of CSIR.

(Paragraph 5.3)

(iv) Unproductive expenditure

Inability of Regional Research Laboratory Jorhat to clear the consignment of accessories for the connecting system, from the Customs for over 8 months in spite of advance notice from the Indian agent of the foreign supplier that the spares were highly hygroscopic, resulted in the spares getting damaged in Customs warehouse. The Institute took another two years to obtain substitute spares to make the equipment operational resulting in delay in coupling of Gas Chromotograph with FTIR for continuous analytical performance of scientific data.

(Paragraph 5.4)

(v) Unfruitful expenditure

A "Continuous wet grinding set-up" costing Rs 28.45 lakhs was procured by National Metallurgical Laboratory, Jamshedpur in December 1992 for a research project sponsored by DRDO. Although the project was completed in December 1993, the main equipment was not installed as of November 1995. While on one hand the Laboratory stated that the equipment would be useful in their future projects, on the other, it failed to install it for three years on the ground of non availability of meagre amount needed for installation. It is noteworthy that the Institute had closing cash balances of Rs 44 to 72 lakhs during 1992-93 to 1994-95.

(Paragraph 5.5)

(vi) Injudicious purchase of equipment

A mobile drilling rig and a drilling machine were procured by Central Building Research Institute in January 1991 at a cost of Rs 22.90 lakhs without assessing their requirement. Drilling machine was used only for two months and the drilling rig has not been used at all during the last five years.

(Paragraph 5.6)

(vii) Injudicious placement of purchase order

Central Electronic Engineering Research Institute **(CEERI)** procured an equipment at a cost of Rs 36.92 lakhs in May 1991. The equipment was received without some of its vital components. The foreign firm did not honour its commitment for installing and commissioning the equipment, which resulted in equipment lying idle since its receipt. Failure of CEERI to obtain bank guarantee from the supplier for system installation and performance incapacitated it from taking any penal action against the supplier.

(Paragraph 5.7)

(viii) Extra expenditure for un-consumed power

Unrealistic assessment of requirement of electricity and failure to maintain the desired power factor resulted in avoidable payment of Rs 47.47 lakhs during 1991-95 to Delhi Electric Supply Undertaking by Centre for Biochemical Technology.

(Paragraph 5.8)

List of Acronyms

AICRP	All India Coordinated Research Projects
AIWC	All India Women's Conference
AMD	Atomic Minerals Division
ANERT	Agency for Non-Conventional Energy and Rural Technology
ATN	Action Taken Note
BARC	Bhabha Atomic Research Centre
BDOs	Block Development Officers
BRC	Budget and Research Committee
BREDA	Bihar Renewable Energy Development Agency
CBRI	Central Building Research Institute
CBT	Centre for Biochemical Technology
CEERI	Central Electronic Engineering Research Institute
CGCRI	Central Glass and Ceramic Research Institute
CICFRI	Central Inland Capture Fisheries Research Institute
CNG	Compressed Natural Gas
CPWD	Central Public Works Department
CRRI	Central Road Research Institute
CSIR	Council of Scientific and Industrial Research
CSTL	Central Seed Testing Laboratory
DAE	Department of Atomic Energy
DBT	Department of Biotechnology
DDD	Dynamic Deflection Device
DEDA	Delhi Energy Development Agency
DESU	Delhi Electric Supply Undertaking
DOD	Department of Ocean Development
DOE	Department of Electronics
DOS	Department of Space
DRDA	District Rural Development Agency
DRDO	Defence Research and Development Organisation
DSIR	Department of Scientific and Industrial Research
DST	Department of Science and Technology
FISBE	Facility for Integral System Behaviour
FTIR	Foriour Transform Infra Red
GAIC	Gujarat Agro Industries Corporation
GC	Gas Chromotograph
GEDA	Gujarat Energy Development Agency
GNP	Gross National Product
IAEA	International Atomic Energy Agency

IARI	Indian Agricultural Research Institute
IASRI	Indian Agricultural Statistic Research Institute
IBR	Indian Boiler Regulation
ICAR	Indian Council of Agricultural Research
ICMR	Indian Council of Medical Research
IRS	Indian Registrar of Shipping
KVIC	Khadi and Village Industries Commission
LOCA	Loss of Coolant Accident
MECL	Mineral Exploration Corporation Limited
MEDA	Maharashtra Energy Development Agency
MNES	Ministry of Non-Conventional Energy Sources
NARP	National Agricultural Research Project
NCAER	National Council for Applied Economic Research
NDDB	National Dairy Development Board
NEDA	Non Conventional Energy Development Agency
NEDCAP	Non-Conventional Energy Development Corporation of Andhra Pradesh
NGOs	Non Government Organisations
NML	National Metallurgical Laboratory
NPIC	National Programme on Improved Chulhas
NPL	National Physical Laboratory
NRC	National Research Centre
NSP	National Seeds Project
NTGCFL	National Tree Growers Cooperative Federation Ltd
OREDA	Orissa Energy Development Agency
P&RDD	Panchayat and Rural Development Department
PEDA	Punjab Energy Development Agency
PHC	Pubilc Healh Centre
PLA	Personal Ledger Account
PME	Planning, Monitoring and Evaluation
PREFRE	Power Reactor Fuel Reprocessing Plant
R&D	Research and Development
RAG	Research Advisory Group
RCC	Research Coordination Committee
RDD	Rural Development Department
RDPRD	Rural Development and Panchayat Raj Development
RDWCD	Rural Development and Water Consultancy Department
RPF	Research Project File
RPP	Rationalised Purchase Procedure
RRL	Regional Research Laboratory
S&T	Science and Technology
S3F	Solid Storage Surveillance Facility
SC	Scheduled Caste

SEC	Solar Energy Centre
SEW	Self Employed Workers
ST	Scheduled Tribe
TBUs	Technical Backup Units
TERI	Tata Energy Research Institute
UCIL	Uranium Corporation of India Limited
UNDP	United Nation Development Programme
UPAGRO	Uttar Pradesh Agro Industrial Corporation
UTs	Union Territories
WIP	Waste Immobilisation Plant

CHAPTER I

1.1 Introduction

1.1.1 In pursuance of the national objective of making scientific and technological progress and attaining self-reliance, Government of India have been making consistent efforts to foster research and development **(R&D)** activities. The Plan allocation for science and technology **(S&T)** increased from Rs 14 crores in the First Plan to Rs 9180 crores in the Eighth Plan. The efforts have resulted in development of infrastructure in diverse fields of S&T.

1.1.2 While the allocation for R&D has been increasing every year, the actual expenditure on R&D as a percentage of Gross National Product **(GNP)** has declined marginally over the past few years, as shown below:

Year	GNP (at factor cost)	R&D expenditure	Expenditure on R&D as percentage of GNP
	(Rs in crores)		
1989-90	402930	3725.74	0.93
1990-91	468059	3974.17	0.85
1991-92	540143	4512.81	0.84
1992-93	615831	5141.64	0.83
1993-94	695342*	5733.43	0.82

*** quick estimate**

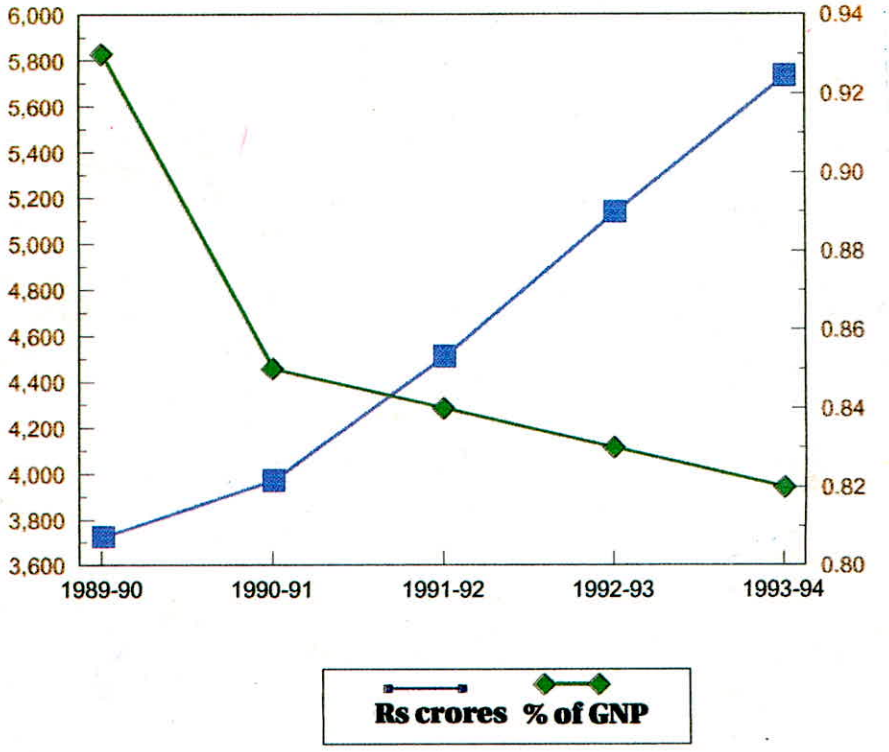
Source : R & D Estimates 1992-93 compiled by DST

Economic Survey 1994-95

While with R&D expenditure at almost one **per cent** of GNP, India is among the highest spenders on R&D among the developing countries, developed countries generally spend around 2.5 **per cent** of GNP on R&D.

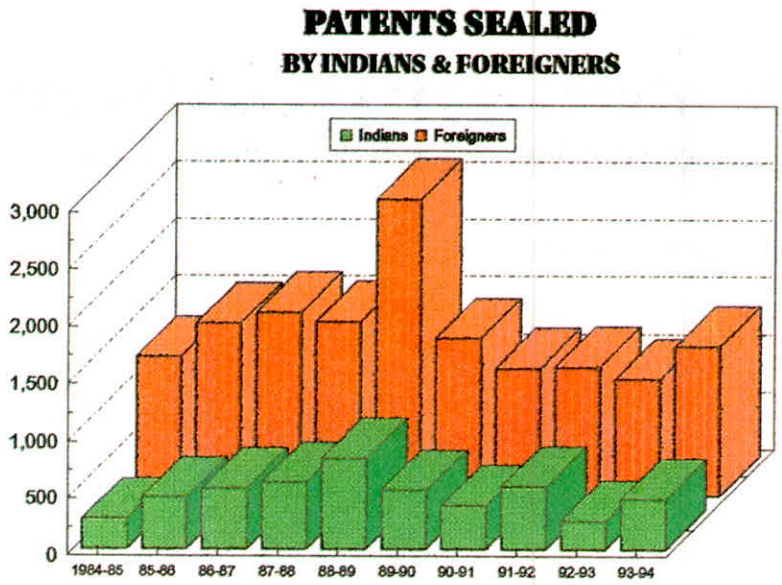
R&D Expenditure

as percentage of GNP

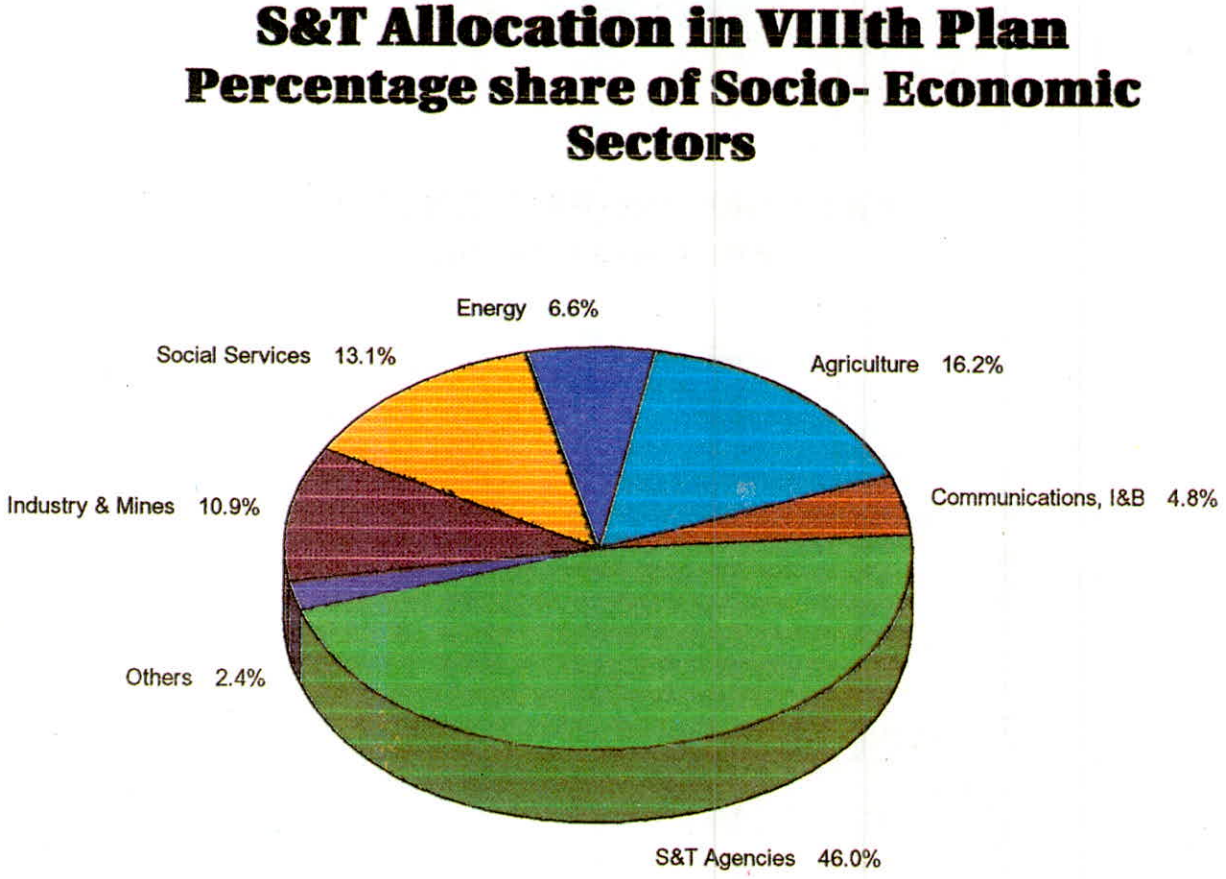


1.1.3 While there were more than 38 lakh people with science and engineering qualifications in India in 1990, which was about 449 per lakh population, the number of scientists and engineers engaged in R&D activities was, however, estimated at only 15 per lakh. It underscores the necessity of further efforts to enlarge the scope of R&D activities in the country and to harness the qualified manpower resources more fruitfully. Number of scientists and engineers engaged in R&D activities is more than 200 per lakh in the developed countries.

1.1.4 The number of patents sealed in the country, which is a measure of the efficacy of R&D efforts, showed steady increase during 1980's up to 1988-89, after which, there was a decline upto 1990-91. Thereafter it has shown a fluctuating trend till 1993-94. The position is depicted in the bar chart below. The number of patents sealed in the name of foreigners continued to be much higher than that by Indians throughout the period.



1.1.5 Percentage share of Eighth Plan S&T allocation by sectors was as follows:

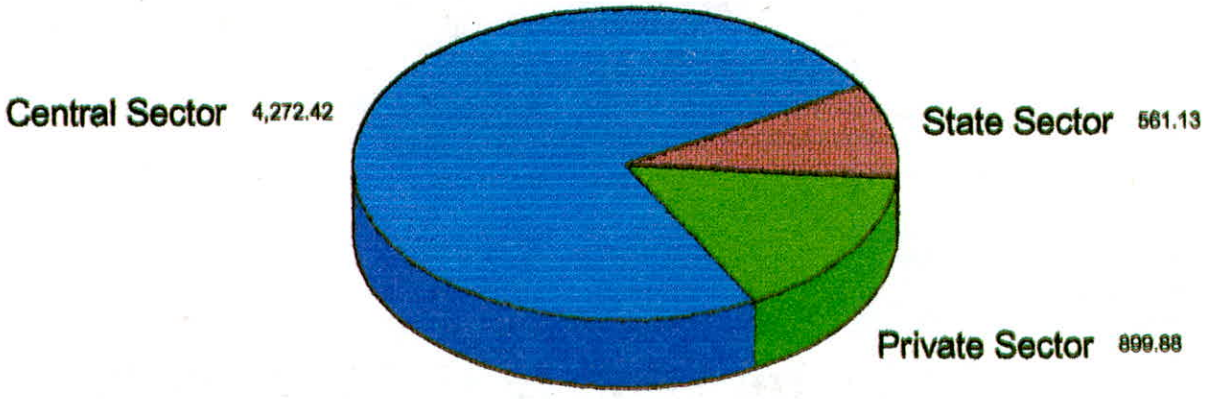


1.1.6 R&D activities

A characteristic feature of India's expenditure on R&D is that most of the R&D funding is in the Government sector, as shown in the graphs below:

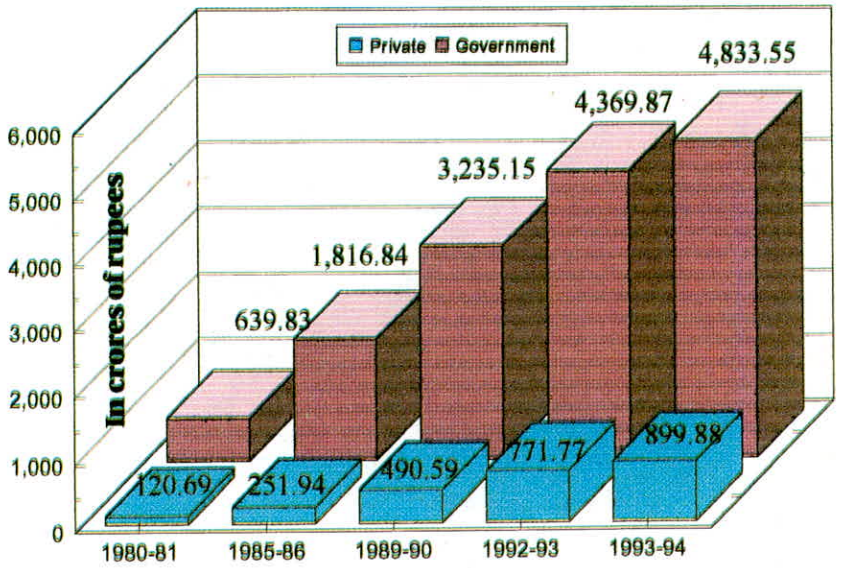
NATIONAL R&D EXPENDITURE
Share of financial inputs, 1993-94

Rupees in crores



Growth of Government and private expenditure on R&D during 1980-81 to 1993-94 is depicted in the bar chart below:-

NATIONAL R&D EXPENDITURE
Sources of Funding



The share of Government R&D expenditure in 1994-95 among the 12 major scientific agencies of Government of India was as follows:

Agency	**Actual (Rs in crores)**	**Percentage**
Defence Research and Development Organisation **(DRDO)**	1239.62	32.22
Department of Space **(DOS)**	757.43	19.69
Indian Council of Agricultural Research **(ICAR)**	494.18	12.85
Department of Atomic Energy **(DAE)**	445.83	11.59
Department of Science & Technology **(DST)**	390.11	10.14
Council of Scientific and Industrial Research **(CSIR)**	245.80	6.39
Department of Electronics **(DOE)**	63.59	1.65
Ministry of Environment and Forests **(MEF)**	62.26	1.62
Indian Council of Medical Research **(ICMR)**	59.32	1.54
Department of Ocean Development **(DOD)**	48.65	1.26
Department of Biotechnology **(DBT)**	37.27	0.97
Ministry of Non-Conventional Energy Sources **(MNES)**	3.17	0.08
Total	3847.23	100.00

1.1.7 Significant achievements during 1994-95

- The indigenously designed Polar Satellite Launch Vehicle **(PSLV-D2)** was successfully launched on 15 October 1994 demonstrating India's capability to launch IRS class of Indian Remote Sensing satellites. PSLV-D2 placed the 804 kg IRS P 2 satellite into the polar sun-synchronous orbit.

  India was elected as Chairman of the Board of Governors, International Atomic Energy Agency **(IAEA)** for 1994-95.

- Unit 2 of Kakrapara Atomic Power Station achieved criticality on 8 January 1995 and was synchronised with the Western grid adding 220 MW to the nuclear power generation capacity.

- International Convention on Nuclear Safety was signed by India.

- Infra-red telescope was commissioned and the scientific validation with trial observations was completed.

- An indigenously developed cryosampler was flown from Tata Institute of Fundamental Research Baloon Facility at Hyderabad on 16 April 1994.

- Scientists of Physical Research Laboratory derived a new one-dimensional integral representation of multiple scattering amplitude accounting for perturbation terms of all orders, for arbitrary excitation of hydrogen like atoms, and computed cross sections and rate coefficients, useful in the context of astrophysical applications.

- National Informatics Centre, New Delhi dedicated NICNET National Info Highway to the nation.

- An interfacial catalyst in a biphasic system using binding ligands developed by Council of Scientific and Industrial Research was granted a US patent.

- Fourteenth Indian Scientific Expedition to Antarctica consisting of 63 members was launched from Goa on 17 December 1994.

1.1.8 Coverage under the Report

The comparative position of the expenditure of major scientific departments/organisations, covered under this Report, during the year 1994-95 and in the preceding two years is given below:

(Rs in crores)

	Ministry/Department/ Organisation	1992-93	1993-94	1994-95
1.	Atomic Energy	1399.09	1804.38	1681.03
2.	Space	490.92	689.55	757.43
3.	Indian Council of Agricultural Research	355.46	441.99	494.18
4.	Environment and Forests including Zoological Survey of India and Botanical Survey of India	316.84	369.93	387.53
5.	Department of Scientific and Industrial Research (including grants given to Council of Scientific and Industrial Research)	286.38	338.86	374.00
6.	Science and Technology including Survey of India and India Meteorological Department	278.17	331.60	393.28
7.	Non-Conventional Energy Sources	126.56	201.45	202.49
8.	Geological Survey of India (Ministry of Mines)	105.14	116.08	125.36
9.	Electronics	87.12	166.95	123.77
10.	Biotechnology	76.13	81.04	84.12
11.	National Informatics Centre (Planning Commission)	58.16	56.87	77.79
12.	Indian Council of Medical Research	53.94	57.70	59.32

13	Ocean Development	45.53	47.52	57.63
14.	Centre for Development of Telematics (C-DOT) (Deptt.of Telecommunications)	42.06	39.74	44.11
	Total	3721.50	4743.66	4862.04

Important results of audit of accounts of these agencies and the institutions controlled by them which are engaged predominantly in the pursuit of science and technology, have been given in this Report.

1.1.9 Excess and savings in expenditure

A summary of Appropriation Accounts in respect of the scientific departments/major scientific organisations, mentioned above, is given below:

(Rs in crores)

Sl. No.	Ministry/Deptt./ Organisation	Grant/ appropriation (including supplementary)	Expenditure	(-)Saving (+)Excess
1.	Atomic Energy	1969.08	1681.03	(-) 288.05
2.	Space	775.00	757.43	(-) 17.57
3.	Electronics	176.82	123.77	(-) 53.05
4.	Non-Conventional Energy Sources	226.38	202.49	(-) 23.89
5.	Biotechnology	90.23	84.12	(-) 6.11
6.	Science and Technology including Survey of India and India Meteorological Department	404.86	393.28	(-) 11.58

7.	Scientific and Industrial Research (including grants given to Council of Scientific and Industrial Research)	379.29	374.00	(-)	5.29
8.	Ocean Development	64.40	57.63	(-)	6.77
9.	Environment and Forests, including Zoological Survey of India and Botanical Survey of India	418.28	387.53	(-)	30.75
10.	Indian Council of Agricultural Research	492.25	494.18	(+)	1.93
11.	Indian Council of Medical Research	55.83	59.32	(+)	3.49
12.	Centre for Development of Telematics (Deptt. of Telecommunications)	81.66	44.11	(-)	37.55
13.	National Informatics Centre (Planning Commission)	79.00	77.79	(-)	1.21
14.	Geological Survey of India (Ministry of Mines)	127.17	125.36	(-)	1.81
	Total	5340.25	4862.04	(-)	478.21

It would be seen from the above that there was an overall saving of Rs 478.21 crores, representing 8.95 **per cent** of overall provision of funds.

1.1.10 Adverse balance appearing in the Finance Accounts

The Finance Accounts for 1994-95 includes adverse balances in the following cases pertaining to the Scientific Departments:

(Rs in lakhs)

1. **Ministry of Environment & Forests**

   Major Head 8443 - Civil Deposits- Security Deposits — 3.42 (Dr.)

2. **Departments of Space**

   Major Head 8443 - Civil Deposits- Personal Deposits — 41.60 (Dr)

3. **Department of Ocean Development**

   Major Head 7610 F. Loans and Advances H.B.A. Advance — 3.63 (Cr.)

The adverse balances, which could be due to mis-classification, excess refunds/ repayments or non-repayment/ less repayment of loans and advances, non reconciliation of accounts etc. require early investigation and rectification.

1.1.11 Audit of Accounts of autonomous bodies

Accounts of autonomous bodies which received grants and loans from the Ministries and Departments of the Government are audited by the Comptroller and Auditor General of India under the relevant provisions of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971.

As on 31 March 1995, there were 42 autonomous bodies receiving recurring grants from the Scientific Departments of Government of India, as indicated in **Appendix I**, which were required to submit their accounts for audit by the Comptroller and Auditor General of India. Out of this, accounts of the 19 autonomous bodies for or upto the year 1994-95 have not been received for audit.

Under Sections 19 (2) and 20 (1) of this Act, Separate Audit Reports on the accounts of six autonomous bodies viz. Indian Council of Medical Research, Wild Life Institute of India, Central Zoo Authority, Sree Chitra Tirunal Institute of Medical Sciences and Technology, Council of Scientific and Industrial Research and Indian Council of Agricultural Research are prepared and sent to them and to the concerned Departments/Ministries.

1.2 Outstanding Utilisation Certificates

Certificates of utilisation of grants are required to be obtained by the Ministries and Departments from the grantees i.e. statutory bodies, non-government institutions etc. indicating that the grants had been utilised for the purpose for which they were sanctioned and that, where the grants were conditional, the prescribed conditions had been fulfilled. Utilisation certificates for grants aggregating to Rs 683.38 crores were outstanding (details given in **Appendix II**) in the Ministries and Departments other than the Ministry of Non-Conventional Energy Sources, where the information was not available as of December 1995 pending recontruction of the records stated to have been destroyed in fire.

Utilisation certificates in 13195 cases aggregating to Rs 421.38 crores were outstanding for more then three years. The Departments would need to look into this at the highest level and obtain the certificates or recover the amounts.

CHAPTER II

Department of Atomic Energy

2.1 Delay in completion of project

Department of Atomic Energy **(DAE)** approved a project titled "Loss of coolant accident - Studies on integral systems behaviour" **(LOCA)** at the Bhabha Atomic Research Centre **(BARC)** in September 1985 to set up a "Facility for Integral System Behaviour Experiments" **(FISBE)** to carry out safety related experiments and to generate data for computer code validation. The project was scheduled to be completed by September 1990 at an estimated cost of Rs 1.50 crores. At the time of sanctioning the project in September 1985, BARC had envisaged setting up FISBE in an existing building. The project was nowhere near completion in 1990. In October 1992, following a review of the facilities conducted and operated in other countries it was decided to enlarge the scope of the project for creating a facility for studying operational transients besides LOCA. The revised outlay of Rs 2.40 crores was approved in April 1993. The project is scheduled to be completed in March 1997.

With the scope of the project having undergone a change, the facility which was originally planned to be housed in an existing building, also underwent a change warranting erection of a concrete tower, adjoining the existing building, at an estimated cost of Rs 1.01 crores. The construction of tower was still in progress and only an amount of Rs 45.10 lakhs was utilised as of August 1995.

Thus, the project conceived a decade ago and planned to be completed by 1990 was already five years behind schedule. Upto January 1992, BARC had incurred an expenditure of Rs 36.27 lakhs which included expenditure on procurement of machinery and stores worth Rs 29.35 lakhs for the project during April 1986 - January 1992, which are lying idle. Due to inordinate delay, the objectives of conducting safety related experiments and generation of data for computer code validation have not been achieved.

DAE stated, in January 1996, that the project would be completed within the Eighth Plan period.

2.2 Unfruitful expenditure on exploratory mining

Exploration of atomic minerals is the responsibility of the Atomic Minerals Division **(AMD)**. However, developmental mining for commercial exploitation of uranium is undertaken by the Uranium Corporation of India Limited **(UCIL)**, a public sector undertaking of the Department of Atomic Energy.

Exploratory drilling by AMD during late sixties and early seventies had established presence of uranium resources of about 1100 tonnes at Bagjata in Singhbhum district of Bihar. Exploratory drilling for estimation of uranium reserves below the already proved depth zone, was undertaken again by AMD in mid 1980s. Developmental mining for commercial exploration was to be undertaken by UCIL after exploratory mining by AMD, to collect bulk samples for examining ore characteristics and leachability studies for gaining more confidence regarding grade, shape and size of the ore body, was completed. Accordingly, AMD agreed, at the instance of UCIL, for taking up exploratory mining initially upto level-I and subsequently, upto level-II. The Mineral Exploration Corporation Limited **(MECL)**, a public sector undertaking, was awarded the contract in March 1986 for exploratory mining. The mining work upto level-II was completed in January 1990 at a cost of Rs 314.74 lakhs.

As UCIL was to take over the mine for commercial exploitation, after the exploratory mining was completed by AMD with satisfactory results, the former was associated with the project even during the exploratory stage of mining. UCIL felt that the mining work completed upto level- II did not serve the purpose for which the exploratory mine work was taken up. It desired that AMD should continue the mining work upto level-IV to give confidence to them that the data generated by drilled bore holes were correct and reliable. Accordingly, UCIL put forth a plan to develop mining upto levels III and IV by MECL before UCIL could consider stepping in for commercial

exploitation of the ore. AMD, however, did not agree for further deepening of mine upto level-IV as it did not agree with UCIL that any further exploration was needed. Following UCIL's reluctance to take over the mine for its commercial exploitation on the basis of results of exploratory mining upto level-II, the mine had to be closed in February 1991.

Thus, the expenditure of Rs 314.74 lakhs incurred on exploratory mining did not meet the immediate objective of commercial exploitation.

DAE stated, in January 1996, that the objective of exploration had been achieved and the mine could be exploited commercially by UCIL, in future. The reply is not tenable since according to UCIL the mining upto II level did not provide confidence that the data generated by drilled bore-holes were correct and reliable for commercial exploitation.

2.3 Delay in completion of projects at Tarapur

For management of intermediate level and high level radioactive wastes generated at the Power Reactor Fuel Reprocessing Plant **(PREFRE)** Tarapur, Department of Atomic Energy **(DAE)** decided in 1972 to set up a Waste Immobilisation Plant **(WIP)** and Solid Storage Surveillance Facility **(S3F)** at Tarapur. In S3F the conditioned waste was to be kept in a retrievable store under cooling and constant surveillance for about 20 years to ensure substantial dissipaion/decay of heat and integrity of the waste product. DAE issued sanction for Rs 3.95 crores in May 1973 for WIP and Rs 10.01 crores in December 1979 for S3F. The projects were to be completed by 1978 and 1985 respectively.

The initial sanction issued in May 1973 for WIP was revised to Rs 5.72 crores in 1976 and again to Rs 6.04 crores in March 1979. WIP, which was scheduled to be completed by June 1980, was actually commissioned in 1985 at an expenditure of Rs 10.34 crores after a delay of five years. Similarly, the first trial runs scheduled to be started in

1980, were actually started in 1989 after a delay of nine years.

A major portion of this delay was attributed by DAE to lack of residential quarters at Tarapur, modification in design for safety clearance by the Atomic Energy Regulatory Board and replacement of defective pipeline in the active trench from PREFRE to WIP.

The total expenditure incurred on WIP was Rs 10.34 crores as of March 1985. Cost overrun of Rs 6.39 crores over the originally sanctioned amount of Rs 3.95 crores was attributed to change in the originally envisaged scope of work as the proposal for importing some of the critical instruments was replaced in favour of purchase of their indigenous equivalents and stainless steel equipment were purchased in place of those made of titanium after making major design modifications.

Pre-commissioning trials revealed failure of a few high level active waste transfer lines between PREFRE waste tank farm and WIP pump house due to cracks developing in the heat affected zones near weld joints. Tests revealed that the stainless steel used did not conform to the predetermined specifications. Six of these pipes were replaced in 1985 with pipes of specified material. Similar defects were noticed in the active trench from PREFRE to WIP in June 1988 at the time of preparations for the warm runs. The department had to incur an extra expenditure of Rs 0.86 crore on replacement of sub-standard stainless steel pipe lines. The work is now estimated to be completed by May 1998.

The metering pumps purchased indigenously in place of the imported ones did not give satisfactory results and had therefore to be replaced by imported pumps at an additional cost of Rs 38.63 lakhs in 1990.

Solid Storage Surveillance Facility

The initial sanction issued in December 1979 was revised to Rs 16.58 crores in June 1985 and to Rs 17.38 crores in July 1992. Against this, an expenditure of Rs 17.15 crores was incurred upto 1994-95. The facility scheduled to be

completed by September 1985 is yet to be completed as of September 1995.

Major factor for delay was non completion of piping work in process block. The contractor entrusted with this work was not in the list of approved Indian Boiler Regulation **(IBR)** contract. This fact came to the notice of the department in February/March 1988 after award of contract. The contract was awarded in October 1986 stipulating completion of work by October 1987 at a cost of Rs 58.48 lakhs. Despite the contractor having been granted several extensions the work is yet to be completed as of September 1995.

Thus, Immobilisation and storage surveillance of nuclear waste having been conceived more than two decades ago, with a view to protecting human beings and environment from radiological hazards had failed to become fully operational as of October 1995.

The Department stated, in January 1996, that the project work of WIP was completed within the revised sanctioned cost of Rs 6.04 crores and the amount of Rs 10.34 crores takes into account all O&M costs incurred after construction of the plant during initial trials. However, until commissioning of the plant in March 1985, Department had incurred expenditure of Rs 3.85 crores during 1979-85 under "Revenue", apart from the expenditure of Rs 6.49 crores upto 1981-82 in setting up of the plant. The total capital expenditure on WIP which includes revenue expenditure as of March 1985, was Rs 10.34 crores. The Department attributed the delay in completion of the projects to the need for conducting adequate trials and demonstration, modification and upgradation on the suggestion of regulatory authorities, provision of in-service monitoring of primary pipes containing the waste etc., and civil and mechanical works undertaken in a manner so as not to affect the operations. It added that WIP is now scheduled to be fully operational by May 1998. The Department further stated that incomplete piping work in S3F was being executed through in-house efforts. The fact, however, remains that the composite project has been delayed by over 10 years and the objectives of the project are yet to be fully realised.

CHAPTER III

Ministry of Non-Conventional Energy Sources

3.1 National Programme on Improved Chulhas

3.1.1 Introduction

About 80 **per cent** of the population in the country lives in villages. Around 40 **per cent** of the total energy consumed in the country is in the rural areas. Bulk of the energy demand in rural areas is for cooking; which is met through non-commercial energy sources like firewood, agro based residues and animal wastes. Besides, inefficient utilisation of fuelwood, coal, agro-wastes and animal wastes for cooking causes serious health problems. Improved Chulha programme was launched by the Ministry of Non-Conventional Energy Sources **(Ministry)** in December 1983 as a demonstrative project.It was converted into a National Programme from April 1985. The programme envisages implementation of fixed as well as portable models of chulhas and mainly consisted of supply of improved fuel efficient chulhas to individual families.

The Programme aims at accomplishing the following objectives:-

- Elimination/reduction of smoke, drudgery and health hazards particular to women and children

- Energy/fuel wood/forest conservation

- Employment generation

- Ecological/environmental improvement

3.1.2 Scope of Audit

This review of the programme is based on test-check of records of State nodal agencies in 15 States and other implementing organisations like All India Women's Conference **(AIWC)**, Khadi and Village Industries Commission **(KVIC)**, National Tree Growers Cooperative Federation Limited

(NTGCFL) on behalf of National Dairy Development Board **(NDDB)**. The review covers activities of the Programme during the period 1990-95.

3.1.3 Highlights

- **Only 16.34 per cent of the potential households were covered under the programme during 1991-95. At the present level of funding it would take another 40-50 years to cover the entire rural households.**

  (Para 3.1.5)

- **Though overall achievement exceeded the targets, 15 States/UTs/implementing agencies registered shortfall of achievement of 3.12 lakh chulhas.**

  (Para 3.1.6)

- **Fabrication of chulhas in disregard of guidelines, and procurement of chulhas at higher rates resulted in extra expenditure of Rs 23.05 lakhs in Tamil Nadu and Rajasthan and wasteful expenditure of Rs 1.77 crores in Karnataka.**

  Excess subsidy of Rs 4.79 crores was claimed by nodal/implementing agencies on account of supply of portable chulhas in place of fixed chulhas, overstatement of achivements and inadequate scrutiny of the claims in the Ministry.

  Beneficiary contribution aggregating to Rs 1.98 crores was not recovered in 10 States.

  Beneficiary contribution of Rs 5.54 lakhs realised by implementing agencies and unspent balance of Rs 36.90 lakhs with them were not adjusted against subsequent claims for subsidy.

  Funds aggregating to Rs 19.20 lakhs were diverted for items not covered under this programme.

Targetted percentage for coverage of SC/ST beneficiaries was not achieved in Assam, Himachal Pradesh, Maharashtra and Bihar.

(Para 3.1.7)

- **Despite a three tier monitoring system having been contemplated, survey of chulhas at grass root level was not conducted and corrective measures were not taken on the basis of the feedback received. Evaluation surveys revealed that large number of chulhas had either become non-functional or were dismantled due to defective installation/workmanship.**

(Paras 3.1.7 and 3.1.10)

3.1.4 Organisational set up

The Ministry was responsible for overall policy formulation, guidance, administration, budgetary and financial control of the Programme. The Ministry has also established eight Regional Offices with a view to having close interaction with Technical Backup Units **(TBUs)** and nodal/implementing agencies in execution, co-ordination and monitoring of the programme.

3.1.5 Position at a glance.

As per the Eighth Five Year Plan projection of the Ministry, there were 1200 lakh rural households during 1991-92 in the country which had to be covered under this programme. Against this, 120 lakh chulhas were supplied upto 1991-92. During the first 3 years of the Eighth Five Year Plan, i.e. 1992-93 to 1994-95, another 70 lakh chulhas have been supplied/installed. The percentage coverage at the end of 1994-95 was only 16.34 of the potential households. Thus, existing level of programme would take about 40 years to cover the rural households in the entire country without taking into account the increase in the number of rural household in the intervening period. As per the Eighth Plan paper of the Ministry, the number of rural households is expected to increase by another 300 lakh by 2001, the coverage of which would require another 10 to 11 years.

3.1.6 Financial outlay

Pattern of assistance

The National Programme on Improved Chulhas **(NPIC)** is a centrally sponsored scheme under which Ministry of Non-Conventional Energy Sources provides a part of the cost of the improved chulhas as subsidy at the rate fixed from time to time. The remaining cost is collected as contribution from the beneficiary. The pattern of central assistance for installation of chulhas was as under:

Fixed chulhas : Upto 1992-93 the central assistance was for full cost of the material for all categories. From 1993-94 onwards the subsidy was limited to Rs 50/-.
Portable chulhas : For general category the subsidy provided by the Ministry upto 1992-93 was 50 **per cent** of the cost. It was revised to 33 **per cent** of the cost subject to a maximum of Rs 50 from 1993-94.

Subsidy of 75 **per cent** of the cost was available to SC/ST households and in the hilly areas upto 1991-92. During 1992-93 the subsidy was limited to 75 **per cent** subject to a maximum of Rs 75. It was further revised to 50 **per cent** of the unit cost subject to a maximum of Rs 75 with effect from 1993-94.

Community chulhas: Subsidy of Rs 50/- was admissible for fixed and Rs 100/- for portable chulhas during 1990-92. The subsidy on community chulhas was stopped after 1991-92.

In addition, supervision fee for construction/ installation of chulhas to trained workers was also admissible at the rate of Rs 5/- per chulha for all models upto 1992-93, and thereafter at the rate of Rs 20/- per fixed chulha, Rs 5/- per portable chulha and Rs 25/- per community chulha. In addition grants-in-aid for oranisational and infrastructural support, training, TBUs, and extension of awareness and publicity programmes was also provided by the Ministry.

Release of funds, physical targets and achievements

Funds released by the Ministry, physical targets of

installation of chulhas and achievements during 1990-95 were as under:

Year	Funds released	Installation of chulhas	
		Targets	Achievements
	(Rs in crores)	(Units in lakhs)	
1990-91	13.25	16.72	19.88
1991-92	17.27	19.27	21.53
1992-93	13.69	17.50	19.75
1993-94	15.89	24.00	24.27
1994-95	19.25	26.00	26.42
Total	79.35	103.49	111.85

Though overall achievement exceeded the targets during 1990-95, there was a shortfall in achievement by 3.14 lakh chulhas in 15 States/UTs/implementing agencies ranging from two to 86 **per cent** as per details given in **Appendix IV**.

No follow up action was taken by the Ministry in cases where shortfall was reported by States/UTs/implementing agencies.

3.1.7 Implementation strategy and performance

The Programme is being implemented through State nodal departments/agencies, Khadi and Village Industries Commission **(KVIC)**, National Dairy Development Board **(NDDB)** and All India Women's Conference **(AIWC)**. These organisations are provided yearly targets and financial assistance against their annual targets for various components of the programme. The Research and Development **(R&D)** activities, training, publicity and public awareness for this programme are looked after by Technical Backup Units **(TBUs)** located in various universities/research institutions. At the grass-root level Block Development Officers **(BDOs)** are to implement the programme with help of Self Employed Workers **(SEWs)**.

Test-check of documents maintained by the nodal/implementing agencies revealed that nodal agencies did not follow the

guidelines strictly which resulted in improper construction of chulhas, excess claims of subsidy, diversion of funds etc.

Construction of chulhas not conforming to prescribed standards.

Ministry emphasised the need to provide ceramic/pottery liners in all mud fixed chulhas alongwith Asbestas Cement **(AC)** bridges, tunnels and tapering to accommodate different pot sizes. In Karnataka, the mud chulhas manufactured with subsidy of Rs 1.77 crores during 1990-95 did not provide ceramic/pottery liners. Without the liners, chulhas developed cracks and broke due to impact of heat after few months of their installation. Rural Development Department **(RDD)** Government of Karnataka stated, in March 1995, that the implementing agencies would be requested to maintain the prescribed standard.

Excess expenditure

(i) In Tamil Nadu, Rural Development Department **(RDD)** purchased 0.80 lakh chulhas in 1993-94 from three firms at unit cost of Rs 135 ignoring the offer of another firm to supply them at Rs 128 per chulha on the ground that it did not possess ISI mark. Scrutiny in Audit revealed that the firm from where the chulhas were actually procured also did not possess the ISI mark. This resulted in avoidable excess expenditure of Rs 5.61 lakhs. The Tamil Nadu Slum Clearance Board, one of the agencies implementing the programme in the state purchased chulhas at the unit rate of Rs 128 during the same period.

Rural Development Department, Government of Tamil Nadu purchased 1.46 lakh portable chulhas in 1994-95 at a cost of Rs 201.96 lakhs at the unit rate of Rs 138/- while the chulhas were available at the rate of 134.20 from a Bangalore firm from where chulhas were normally being purchased. This resulted in avoidable extra expenditure of Rs 5.56 lakhs .

(ii) Rural Development and Panchayat Raj Department **(RDPRD)**, Rajasthan purchased 87,960 medium size portable chulhas at

unit rate of Rs 128/- without inviting tenders during June 1992 to June 1993. In June 1993, RDPRD invited tenders for supply of chulhas and received the lowest unit rate of Rs 114.50. Thus, purchase of 87960 chulhas at higher rate resulted in avoidable extra expenditure of Rs 11.88 lakhs.

Irregular/excess claims of subsidy

In 11 cases, Government departments and implementing agencies claimed Rs 61.21 lakhs in excess of the admissible subsidy during the period 1990-95 as per the details indicated in **Appendix V**. Some of the reasons for excess claims were (i) claim of subsidy at higher rate applicable in case of SC/ST (ii) claim of subsidy for portable chulhas whereas fixed chulhas were installed and (iii) claim of market promotion incentive for cooperative stores/fair price shops though no portable chulha was sold by them. Ministry did not scrutinise the correctness of claims of subsidy before releasing the funds.

Supply of portable chulhas leading to extra expenditure

Fixed chulhas being cheaper, portable model chulhas were to be supplied only in case of clear beneficiary preference. During March 1990 to December 1994, Non-Conventional Energy Development Corporation of Andhra Pradesh **(NEDCAP)** supplied 3.62 lakh portable chulhas to Government agencies for distribution among beneficiaries without survey of user's preference and claimed additional central subsidy of Rs 1.78 crores compared with the cost of fixed chulhas. Had user preference been taken into account, part of this expenditure could have been avoided.

Over-statement of progress/expenditure

Nine nodal/ implementing agencies in six states overstated the physical progress and/or expenditure resulting in claim of excess subsidy of Rs 2.40 crores as per details given in **Appendix VI**.

Non-realisation of beneficiary contribution

The difference between the approved unit cost and subsidy

admissible was to be borne by beneficiaries as their contribution. The cost of chulhas was initially paid out of funds made available by the Ministry pending recoupment from the blocks by way of beneficiary contribution.

Test-check in audit revealed that beneficiary contribution aggregating to Rs 1.98 crores as indicated in **Appendix VII** was not recovered in 10 States. Since beneficiary share was a pre-requisite with a view to ensuring their participation in the Programme, actual installation of chulhas in their houses could not be verified in its absence.

Non-accounting of interest on funds for the Programme and beneficiary contribution

(i) Interest

Accrued interest of Rs 7.33 lakhs as on March 1995 on funds provided under this Programme in Himachal Pradesh and Tamil Nadu, was neither utilised for the programme nor reported to Ministry.

(ii) Non-adjustment of unspent subsidy/beneficiary contribution

(A) Contribution of 0.13 lakh beneficiaries amounting to Rs 4.08 lakhs, recovered by Rural Development and Water Consultancy Department **(RDWCD)** in Maharashtra during 1990-92 and Rs 1.46 lakhs realised by RDPRD Karnataka during 1990-94 were not adjusted against subsequent subsidy claim.

(B) Unspent balance amounting to Rs 36.90 lakhs was neither refunded nor adjusted in the subsequent claims in the following states:-

(a) Non-Conventional Energy Development Corporation of Andhra Pradesh **(NEDCAP)**, - Rs 2.10 lakhs since October 1988.

(b) Orissa Energy Development Agency **(ORDEA)**- Rs 1.90 lakhs since 1984-89 and Rs 1.39 lakhs since 1990-91.

(c) Gujrat Energy Development Agency, **(GEDA)** - Rs 1.92 lakhs since November 1992.

(d) Bihar Renewable Energy Development Agency **(BREDA)** made advance payment of Rs 21.07 lakhs during 1989-90 for installation of 50,000 fixed chulhas to a Mahila Kalyan Mandal. The Mandal constructed only 964 chulhas at a cost of Rs 0.67 lakh. Since the balance amount of Rs 20.40 lakhs was not refunded, an FIR was lodged against the Mandal in August 1991. Besides, a defalcation of Rs 8.60 lakhs against funds provided to this organisation prior to 1989-90 was also detected. Total amount of Rs 29.00 lakhs was yet to be recovered as of March 1995.

Diversion of funds

Diversion of funds aggregating to Rs 19.20 lakhs for items not covered under this programme in the following States were noticed in test-check:

Name of state	**Amount**	**Purpose of Diversion**
	(Rs in lakhs)	
Tamil Nadu	1.51	Diverted to Bio-gas programme
Tamil Nadu	7.90	Diverted to Jawahar Rojgar Yojna
Rajasthan	6.54	For purchase of photo copier, running and maintenance of vehicles, purchase of electronic typewriters, furniture and jute carpet.
Punjab	3.25	Transfer of funds by TBU to Thapar Polytechnic for construction of building.
Total	19.20	

Further, in 10 out of 23 units test-checked in Andhra Pradesh beneficiary contribution amounting to Rs 44.23 lakhs in respect of 87277 chulhas supplied during 1990-95 was met out of funds received for other central schemes.

Installation of improved chulhas in priority areas

(i) Priority areas

Priority was to be given to the areas experiencing serious deforestation and areas having high fuel scarcity, semi-urban and slum areas, community kitchens of hospitals, hostels, military and para military forces etc. where wood/ other biomass was used as fuel. Test-check revealed that identification of priority areas was not done in Himachal Pradesh, Assam and Karnataka.

(ii) Coverage for SC/ST beneficiaries

At least 20 and 10 **per cent** chulhas were to be supplied to persons belonging to SCs and STs respectively. However, in Assam the coverage of SC beneficiaries ranged between 5 and 11 **per cent**, in Himachal Pradesh the coverage of SC ranged between 9 and 14 **per cent** and that of ST was negligible. In Bihar, the total number of chulhas installed in SC, ST and hilly areas was below 30 **per cent** of the targets during the years 1990-91 and 1992-95.

Functionality of chulhas

In order to improve the functionality of chulhas, Ministry emphasised, in August 1991, that the functionality rate should be enhanced by 10 **per cent** over and above the then National average of 70 **per cent**. Test-check in Audit revealed that in five states the percentage of non-functional chulhas ranged between 27 and 93 during 1990-95, as indicated in **Appendix VIII**.

Dismantled/defective chulhas

(i) Rural Development Department **(RDD)** Himachal Pradesh installed 0.29 lakh fixed chulhas in five districts during 1990-95. Out of this 11030 (38 **per cent**), on which subsidy

aggregating to Rs 6.93 lakhs was paid, became non-functional because of broken pipes on account of use and were dismantled by the beneficiaries.

(ii) Test-check of records in six blocks in Nalabari and Kokrajhar districts of Assam revealed that 793 fixed chulhas, valued at Rs 0.92 lakh were dismantled due to defective installation. Panchayat and Rural Development Department **(P&RDD)** stated, in May 1995, that report would be called for from the concerned blocks.

(iii) Of 6117 chulhas physically verified by Technical Backup Units in West Bengal, 1414 were dismantled due to defective workmanship and improper maintenance of chulhas by users.

(iv) Gujarat Energy Development Agency, installed 2.16 lakh chulhas in the state during 1990-95. Survey of functioning of 1.61 lakh chulhas revealed that 22935 chulhas were not in working condition, 8652 were dismantled and 7026 chulhas were not found installed.

(v) Delhi Energy Development Agency**(DEDA)** jointly conducted a study with Tata Energy Research Institute**(TERI)** which evaluated the performance of fixed and portable chulhas in the rural and urban areas of Delhi. It revealed that chulhas installed three years ago or earlier did not exist.

(vi) Test-check of records in three districts of Orissa regarding fuel consumption and the time taken for cooking revealed that out of 26673 chulhas surveyed, fuel consumption in 14221 was same as that of traditional chulhas and in 97 cases the time taken for cooking was more when compared with traditional chulhas. This was attributed to non-adherence to the specifications of tunnel and fire mouth as also due to the model of chulhas not being suitable to the beneficiaries.

(vii) Survey conducted in Kerala in 1990-91 by TBU revealed that out of 2297 chulhas surveyed, only 1890 chulhas were found in working condition. No survey was conducted by TBU thereafter.

Core organisational support

The required manpower was not deployed in Himachal Pradesh, Maharashtra, Rajasthan and Punjab. No grant was received from KVIC Headquarters for core organisational support in Madhya Pradesh. National Tree Growers Co-operative Federation Limited **(NTGCFL)** Gujarat, one of the implementing agencies of NDDB received Rs 2.40 lakhs as subsidy for core organisational support during 1990-95 which was given to 67 milk unions. However, details of staff deployed were not made available.

Public awareness and publicity

Creation of awareness among the beneficiaries and publicity were important components of this programme. An amount not exceeding three **per cent** of the cost of chulhas upto 1992-93, and thereafter Rs two per chulha were provided for awareness programme.

In nine states the media viz Doordarshan, All India Radio and Press, were not utilised for public awareness and publicity.

In Andhra Pradesh and Madhya Pradesh KVIC did not spend any amount on public awareness and publicity programme. In Uttar Pradesh only one Doordarshan programme was telecast in five years during 1990-95 at an expenditure of Rs 16.43 lakhs. Pamphlets prepared for publicity in UP were retained in headquarters and were not distributed to district level offices for circulation in rural areas.

3.1.8 Technical Back up unit (TBU) and training

A Technical Backup Unit **(TBU)** in each State was to be established in order to aid, advise and extend technical support to the nodal/implementing agencies and to carry out research and development. 17 such TBUs had been established till March 1995. Ministry released Rs 2.21 crores to the TBUs during 1990-95.

TBU also imparts training to Self Employed Workers, organises refresher courses, provides users' training and

offers management training for officers connected with implementation of the Programme.

There was a shortfall of 95 **per cent** in training in Maharashtra during 1993-94 and between 37 and 56 **per cent** in Punjab during 1992-93. In Gujarat the details of expenditure on training courses conducted by Gujarat Energy Development Agency for the years 1990-95 were not made available. No training courses were conducted by Rural Development Department, Tamil Nadu, Non-Conventional Energy Development Corporation of Andhra Pradesh and Rural Development Department, Himachal Pradesh in 1994-95 due to non-receipt of funds. In Andhra Pradesh, TBU did not impart any training to the implementing staff in KVIC. TBU Himachal Pradesh organised four demonstrative courses, which were attended by 173 Self employed workers **(SEWs)**. Under the programme, the trainees/TBU had to construct 519 chulhas to facilitate practical training. Not even a single chulha was constructed since mud, sand, cow dung and 'bhoosa' were not made available by the BDOs despite availability of funds.

3.1.9 Self Employed Workers

The concept of SEWs was introduced under the programme in 1988-89 to construct/distribute, monitor, maintain, repair, provide feedback report on performance of the chulhas for a period of one year. SEWs are responsible for identification of beneficiaries, their training and regular interaction. SEWs are to be selected at block level amongst skilled artisans/potters with due preference to women and they are imparted training in the TBU. After training, they are required to work with block level implementing agencies.

The services of Self Employed Workers were to be utilised for repair and maintenance of chulhas installed. An amount of Rs 10/- per chulha in plain area and Rs 15/- per chulha in hilly areas/difficult terrain was to be paid by the implementing agencies to them in instalments for repair and maintenance spread over a period of one year, after ensuring that the responsibilities were carried out by Self Employed Workers satisfactorily. Self Employed Workers were also entitled to get Rs five per portable chulhas. Test-check revealed the following:

i) In Tamil Nadu, Ahmednagar and Beed districts of Maharashtra and Himachal Pradesh, payment of service charges for repair and maintenance was made to SEWs without ensuring the performance of chulhas for a period of one year.

ii) In Rajasthan, only 28 SEWs were engaged for installation of chulhas against 600 SEWs trained during 1990-95. In West Bengal the services of SEWs were not utilised for repair and maintenance during 1990-95. KVIC in Andhra Pradesh and Madhya Pradesh did not maintain proper accounts of repair and maintenance charges paid to SEWs.

iii) In Uttar Pradesh, Rural Development Department **(RDD)** kept an amount of Rs 15.50 lakhs in Personal Ledger Account **(PLA)** without paying it to SEWs. Rs 12.75 lakhs were shown as paid to SEWs by Uttar Pradesh Agro Industrial Corporation **(UP AGRO)** without engaging any SEWs.

iv) During 1989-93, Kerala received an amount of Rs 4.76 lakhs as service charges from Ministry for payment to SEWs through Agency for Non-Conventional Energy and Rural Technology **(ANERT)**. Rs 2.08 lakhs were paid to SEWs and the balance amount of Rs 2.68 lakhs was retained by ANERT.

3.1.10 Monitoring and evaluation

A three tier monitoring system through the nodal/implementing agencies, TBU and Regional offices of the Ministry was contemplated in the programme. The nodal/implementing agencies were also required to have a feedback of the programme by conducting 100 **per cent** survey of chulhas at the grassroot level and atleast five **per cent** by the district level officers and random sample survey by the State level officers. The feedback reports were required to be sent to the Ministry. Following shortcomings were noticed in the monitoring system.

i) Survey was not conducted by the nodal/implementing agencies in Himachal Pradesh, Assam, Maharashtra, Punjab, Bihar, Tamil Nadu, Karnataka, Uttar Pradesh, Kerala and Gujarat for assessment of the effectiveness of the scheme and its acceptability by the people.

ii) Survey conducted by TBU in Himachal Pradesh pointed out poor quality of construction, size of family having been ignored before installation resulting in dismantling of chulhas and faulty installation where pipes were fixed to the traditional chulhas due to non-availability of trained SEWs.

iii) Non-conventional Energy Development Corporation of Andhra Pradesh did not devise system to get feedback on regular basis. Surveys in 1991-92 and 1992-93 revealed that 9 to 45 **per cent** chulhas were not in proper working condition. Corrective measures were not taken on the findings of the survey.

iv) Though KVIC in Andhra Pradesh received feedback from SEWs, monitoring and evaluation was not undertaken due to lack of sufficient staff. The evaluation report of NCAER was not received by KVIC.

v) Out of 5597 chulhas surveyed by TBU, Tamil Nadu in 13 districts during 1988-95, 1302 chulhas were found to be non-functional due to reasons such as breakage, construction not being as per design, consumption of more fuel and time and emission of more smoke. No reports were available with TBU regarding action taken for rectification of defects.

vi) In Karnataka, Survey report of National Council for Applied Economic Research **(NCAER)**, which carried-out inspection of 12123 chulhas during 1991-95, revealed that the percentage of chulhas not in working condition, dismantled or altered ranged between from 26 and 49. The nodal/implementing agencies did not initiate any follow up action.

vii) In Uttar Pradesh the District Magistrate, Chonoti in his reports in March 1994 and May 1994 to the Commissioner, Rural Development Department **(RDD)**, stated that non-adaptability of the programme by the rural poor was due to inherent practical difficulties regarding design of chulhas, reduction in the subsidy and non-cooperation of village development officers. The State association of village

development officers at Pithoragarh and Ghaziabad had demanded immediate closure of the programme as it could not gain any momentum amongst the beneficiaries whose portion of contribution was compulsorily deducted from the salaries of the staff in order to show better progress.

viii) In Kerala, State level survey of portable chulhas installed in 1991-92 and 1992-93 conducted in May 1993 revealed that out of 524 chulhas inspected, only 60 chulhas were in continuous use, 274 were used intermittently, 154 were not in use and 36 chulhas were dismantled. Information as to whether the defects in installation were rectified and the deficiencies removed were not available.

ix) Functionality reports on chulhas based on 100 **per cent** verification called for by Rural Development Department, Tamil Nadu, in May 1994 were not completed upto January 1995. An inspection of a random sample carried out by TBU disclosed that out of 5597 chulhas during 1988-95, 1302 chulhas (23 **per cent**) were not functional due to breakage, defects in construction, consumption of more fuel and emission of more smoke.

National Council for Applied Economic Research **(NCAER)** conducted in April/June 1992 an evaluation survey of the Programme for the years 1988-92. According to their report, only 49.2 **per cent** chulhas were in working condition in Tamil Nadu which was far below the all India average of 55.6 **per cent**. The report indicated that out of 738 chulhas selected for evaluation, 32 chulhas were not installed. 207 chulhas were not working and 91 were dismantled. Non-functioning of chulhas was attributed to defective installation, corrosion/breakage of liners/chimneys etc. while dismantling of chulhas was attributed to dissatisfaction over their performance.

x) In Gujarat TBU conducted survey in respect of only 4016 chulhas (1.51 **per cent**) out of 2.65 lakh chulhas installed during 1992-95.

xi) All India Women's Conference did not devise any system to check that the chulhas installed by it were in working condition and were being used by the beneficiaries.

xii) In Bihar, National Council for Applied Economic Research conducted evaluation on the working of the Programme for the period 1988-91. It revealed that the programme lacked infrastructural support at various stages and the implementing agency paid attention to physical achievements without any reference to the quality of work done. NCAER noticed absence of proper co-ordination among the agencies working on the programme and interaction of the nodal agencies with the Ministry.

3.1.11 Other points

In Karnataka out of 21326 chulhas procured at a cost of Rs 25.56 lakhs during 1990-95 in five districts, 15373 chulhas costing Rs 18.51 lakhs were lying idle with BDOs as of May 1995 for a period ranging between three and 24 months. 5953 fixed chulhas were neither constructed nor installed even after the distribution of components to mandal panchayats/beneficiaries 9 to 12 months earlier, thus depriving the beneficiaries of the benefit. The implementing agencies stated, in December 1994 and May 1995, that action would be taken for early installation of chulhas.

Punjab Energy Development Agency **(PEDA)**, had a stock of 2521 chulhas as in March 1991. It purchased a total 22836 chulhas during 1991-95. Of these, only 16792 chulhas were sold leaving a balance of 8565 chulhas valued at Rs 11.98 lakhs, which were lying for more than two years.

3.2 Wasteful expenditure

With a view to reducing the cost of solar system by substituting expensive materials with equivalent low cost materials, the Solar Energy Centre **(SEC)** Gwalpahari (Haryana) procured in July 1987 a "Instron Universal Testing Machine" from a foreign firm for carrying out physical testing of various materials at a cost of UK £ 28893.00 equivalent to Rs 5.40 lakhs. SEC spent Rs 6.12 lakhs on the purchase - Rs 5.91 lakhs paid to the supplier through a letter of credit and Rs 0.21 lakh towards payment of 80 **per cent** of the agency commission.

In September 1992, the officer in charge of the workshop reported that there was no use of this machine in the workshop. The machine has not been installed/commissioned more than eight years after its procurement. SEC stated, in September 1995, that the delay in installation of the machine was mainly because an integrated test facility had been established in the SEC under the Indo-German bilateral assistance programme. It also added that efforts were now being made to use this machine for some of the material tests. Apparently the decision for procurement of machine was taken without careful examination of requirement resulting in wasteful expenditure of Rs 6.12 lakhs.

The Ministry stated, in October 1995, that there had been a shortage of scientific personnel. These factors together with reorientation of SEC's programmes led to non-utilisation of the machine.

CHAPTER IV

Indian Council of Agricultural Research

(Department of Agricultural Research and Education)

4.1 Indian Agricultural Research Institute

4.1.1 Introduction

Indian Agricultural Research Institute,New Delhi **(IARI)** is a premier institution for research and higher education in agriculture.

4.1.2 Organisational set up

The Institute is headed by a Director and managed by a Board of Management. It has 18 divisions, four multidisciplinary centres, nine regional centres and two off-season nurseries. It also houses project directorate of All India Coordinated Research Projects **(AICRP)**. The Board of Management is assisted by an Academic Council, a Research Council, an Executive Council and an Extension Council to guide and monitor the functions of the Institute.

Audit of IARI is conducted under Section 20(1) of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. Present review covers research and financial management in IARI during 1990-95.

4.1.3 Highlights

- **IARI closed 230 ongoing projects without their critical appraisal.**

  No research project files indicating the progress report of each project was maintained for review.

  The Research Council did not meet even once during the last six years against the mandate of once in each quarter.

  (Para 4.1.5)

- **Rs 3.92 crores out of Rs 10.70 crores under research and education scheme remained unutilised.**

  Setting up of National Phytotron Facility was delayed by more than five years.

  (Para 4.1.6)

- **As on 31 March 1995, Rs 30.42 lakhs was spent on sponsored schemes in excess of deposits.**
  Equipment costing Rs 23.70 lakhs was lying idle.

  (Para 4.1.7)

- **Non-inclusion of electrical fittings and air-conditioning in the estimate of glass house complex necessitated revision in the estimate after five years which resulted in delay in completion of glass house complex.**

  Failure of IARI to obtain permanent electric connection of requisite load led to many equipment not being utilised to their optimum capacity.

  (Para 4.1.9)

4.1.4 Budget and expenditure

IARI is financed mainly through grants released by the Department of Agricultural Research and Education to the Indian Council of Agricultural Research **(ICAR)**. It also receives funds from the Agricultural Produce Cess Fund, foreign agencies and other departments/ministries for specific schemes. A statement containing receipts and expenditure of IARI during the period 1990-95 is annexed.

4.1.5 Research activities

Monitoring and evaluation

Monitoring of research projects was to be undertaken at divisional level and reviewed by the Research Council. Research Project Files **(RPF)** are required to be maintained in three parts, namely, RPF-I for basic information, RPF-II for annual progress and RPF-III for final report to facilitate periodic monitoring of research projects and five yearly assessment of the scientists.IARI stated that while

RPF-I was maintained, RPF-II and RPF-III were not maintained in major divisions like Genetics, Entomology, Plant Physiology, Nuclear Research Laboratory, Nematology, Agronomy and Seed Science Technology. In other divisions like Biochemistry,Fruit and Horticulture Technology and Agricultural Economics only RPF-I and II were maintainned and that too,for the year 1990-91 and thereafter no RPFs were maintained.This apart,Water Technology Centre stated that the Centre had dispensed with the maintainance of RPFs from 1987. Further, annual RPFs required to be sent to ICAR were not sent during 1990-95.On the matter being pointed out in Audit, ICAR stated, in January 1996, that RPFs for the relevant period were being obtained from various divisions of IARI.

Research Council, the apex body for identification, approval and review of projects, required to meet every quarter, did not meet after June 1989. IARI stated, in September 1995, that the meetings could not be held regularly due to delay in constitution of the Board, non-availability of agenda items, change in programme of the Chairman of the Council and other unavoidable reasons. ICAR stated, in January 1996, that the projects were reviewed by the Director and Joint Director (Research) of IARI. However, no evidence was made available in support of this statement. ICAR also did not explain as to why the Research Council did not meet even once during the last six years.

In-house projects

During 1990-95,IARI implemented 230 projects which were started between 1986-88. All these projects were terminated on 31 March 1994 without their critical appraisal, contrary to ICAR's instructions. Test-check revealed that out of 230 projects, 139 projects were continued beyond their scheduled dates of completion for a period ranging from 12 months to 60 months. ICAR stated, in January 1996, that continuance of 139 projects beyond their scheduled dates of completion was necessitated due to inadequate yearwise allocation of funds for these projects resulting in the projects taking longer span of time for completion.

4.1.6 Research and education schemes

Schemes and projects other than in-house and sponsored projects under deposit schemes, are discussed below:

Underutilisation of funds

IARI received Rs 10.70 crores for the following schemes. Of this, Rs 3.92 crores remained unutilised as on 31 March 1995.

(Rs in lakhs)

S.No	Name of Scheme	Opening Balance	Amount received during 1990-95	Total	Expenditure during 1990-95	Unutilised balance
(A)	Schemes funded by ICAR					
(i)	NRC Plant biotechnology	(-) 3.39	392-30	388.91	208.17	180,74
(ii)	Promotion of research and development on hybrid seeds	24.96	241.40	266.36	192.67	73.69
(B)	AP cess fund schemes	24.76	196.47	221.23	158.83	62.40
(C)	World Bank funded schemes National seed project (NSP)-III	9.51	183.99	193.50	118.40	75.10
	Total	55.84	1014.16	1070.00	678.07	391.93

ICAR stated, in January 1996, that due to reasons like non-filling up of posts, observance of prescribed procedure for purchase of equipment and construction activities, funds received could not be utilised fully.

Non-achievement of objectives of projects financed from Agricultural produce cess fund

Objectives of the following projects were not achieved in full for the reasons mentioned against each.

Sl. No.	Name of project and period	Objectives	Expenditure (Rs in lakhs)	Reasons	Remarks
1.	Integrated nutrient management in irrigated transplanted rice based cropping system (June 1992 to May 1995)	To economise the use of nitrogen in rice-wheat cropping system	6.83	(i) Equipment i.e. Atomic Absorption Spectrophotometer was not installed and put into operation. (ii) Research associate left the project.	The reply of ICAR of January 1996 that non-availability of spectrophotometer did not interfere with the work plan is not acceptable as the Division of Agronomy had stated earlier in May 1995 that many soil and plant samples collected could not be analysed to achieve the complete objectives of the project in the absence of the Spectrophotometer.
2.	Description, cataloguing and conservation of vegetable crops of Indian origin (December 1991 to June 1994)	Identification of collections of germplasm of vegetable crops	2.45	Frequent changes of principal investigator and associates.	ICAR accepted the facts in January 1996.

Externally aided project : Delay in setting up of National Phytotron Facility

Phytotron facility is meant to provide controlled environment for study of response of plants to climatic condition. In April 1990, Government of India entered into an agreement with UNDP to set up this facility at IARI and to train their scientific staff to undertake research on plants and crops in relation to their environment.

The project was to be implemented for five years commencing

from August 1990 in two phases with the UNDP assistance of Rs 6.91 crores in the form of consultancy, training and equipment. ICAR and Department of Science and Technology **(DST)** were jointly responsible for providing financial assistance of Rs 3.64 crores for creating infrastructural facilities like building and other equipment. A sum of Rs 86.20 lakhs was spent upto March 1995 for this purpose.

Despite the fact that the original project duration was only for a period of 5 years upto July 1995, which was further extended for one year upto July 1996, construction of the main building to house the facility scheduled to be completed by October 1993 could not be started till March 1995 due to abnormal delay in selecting a construction agency.Initially,IARI was of the opinion that the work should be entrusted to a public sector undertaking through open tender; due to the delay experienced with the Central Public Works Departmment **(CPWD)** in the past. Accordingly, estimates were called for from six public sector undertakings in December 1992. However, IARI changed its decision in February 1993 and decided to entrust the work to CPWD. The public sector undertakings were consequently asked not to send their estimates. However, negotiation with CPWD did not succeed since the reduction in estimated cost from Rs 5.78 crores to 5.56 crores only was not acceptable to IARI. Finally,the work was entrusted to a public sector company at a cost of Rs 3.01 crores in May 1994. The contractor who was awarded the work by the construction agency had no previous experience of this type of construction.Despite the fact that the stipulated period for construction was 15 months from the date of handing over the site to the agency, the work was started in March 1995 after a delay of 10 months from the date of agreement. By that time even the approval of the building plan and models by Urban Arts Commission were not obtained. Thus complete duration of five years initially sanctioned for the project was taken just to start the construction work.

The project also envisaged training of scientific and technical personnel besides consultancy services by UNDP.For this, UNDP had provided a sum of Rs 2.53 crores. Against the target of training 19 scientists/engineers, only seven personnel were imparted training upto March 1995. There was

considerable shortfall in obtaining consultancy service also. Accepting the facts, ICAR stated, in January 1996, that two more consultants would be coming in 1996 and six personnel are expected to undergo training in 1996.

World Bank aided schemes

Schemes implemented with the aid of World Bank are initially financed by ICAR and later reimbursed by World Bank through the Government of India on the basis of claims made.

(i) Unproductive expenditure

Two equipment costing Rs 13.95 lakhs, procured during July-September 1994 for identification and characterisation of plant virus for a project to be completed between October 1992 and September 1995, were not installed as of March 1995 for want of helium gas and computer facilities. Letters of credit for import of two more equipment, at a cost of Rs 6.53 lakhs, were opened only in March 1995, just six months before the scheduled date of completion of the project, resulting in unproductive expenditure. IARI stated, in June 1995, that the equipment would be commissioned after completion of the laboratory repair work. ICAR stated in January 1996 that the equipment were installed and the project has been extended upto March 1996. The fact however, remains that the equipment were not used for major part of the project.

(ii) Slow progress

ICAR allocated Rs 40.00 lakhs for procurement of equipment during 1990-95 to strengthen the Central Seed Testing Laboratory **(CSTL)** under'National Seed Project-III'. The Institute could procure equipment worth Rs 31.87 lakhs upto December 1995. Similarly, against the sanction of Rs 89.70 lakhs for development of off-season nurseries at regional station of IARI at Wellington, only Rs 44.86 lakhs were spent till January 1996. The World Bank authorities also expressed concern about non-utilisation of funds.

4.1.7 Deposit schemes

Excess expenditure

IARI implemented schemes sponsored by other departments in various fields of agricultural research. As on 31 March 1995, a total amount of Rs 30.42 lakhs spent on 15 schemes in excess of the deposits was outstanding from the sponsoring departments for periods ranging from one to four years. In one case, the sponsoring agency, Department of Biotechnology **(DBT)**, refused to reimburse the excess expenditure of Rs 10.96 lakhs as it was not covered under the terms and conditions of the scheme. While accepting the fact of non-reimbursement of Rs 10.96 lakhs by DBT, ICAR stated, in January 1996, that efforts were being made to get the amount from DBT.

Non-achievement of objectives of the project 'Technology Development and Demonstration of Biofertilizer on Blue Green Algae'

The above project sponsored by DBT for five years from September 1990 was meant for undertaking research on blue green algae and production of germplasm for supply to other centres.

For production of biofertilizer, without air contamination, an equipment called bioreactor of 100 litre working volume was to be imported. However, an equipment having lesser working volume of 71.6 litre was procured for Rs 23.70 lakhs from a firm in USA in June 1995 just two months before the completion of the project. The equipment was, however, not installed till July 1995. The project was not reviewed till July 1995 by the Steering Committee although it was envisaged to be conducted once in six months. ICAR accepted the facts in January 1996.

Non-installation of equipment

Two equipment for water purification system costing Rs 11.27 lakhs purchased during the year 1992-93 for the project 'National Research Centre on Plant Biotechnology' were lying idle for more than 2 years. IARI stated in July-August

1995 that due to non-completion of electric connection in the new building and delay in procurement of water de-ionizer, these equipment could not be installed. ICAR stated, in January 1996, that action was being taken for installation of the equipment.

4.1.8 Accounts

Outstanding advances

As on 31 March 1995, accumulated balance of Rs 388.44 lakhs against advances given to the employees towards TA/LTC/contingency and to various Government departments for procurement of equipment etc. was pending for adjustment/recovery.Some of the outstanding advances remained unsettled since 1982-83. ICAR accepted the facts in January 1996.

Bank reconciliation

Test-check revealed that cheques issued upto 1979 for Rs 7.00 lakhs and, from 1985-86 to March 1995, for Rs 1027 lakhs remained unencashed and were not debited in the bank account. Time barred cheques had not been cancelled and credited in the Cash Book.

Further, Rs 24.00 lakhs credited by the bank was not taken in the cash book. Of this, Rs 4.00 lakhs related to the period upto 1979. Rs 23.00 lakhs have been deposited in the bank, which have not been accounted for in the cash book of the Institute. Of this Rs 6.00 lakhs related to the period upto March 1979. Further, cheques worth Rs 169.00 lakhs received from outside have been taken into IARI's cash book but these have not been credited in IARI's account in bank. Of this, Rs 1.24 lakhs remained unaccounted for by the bank even after 16 years. These irregularities persisted inspite of yearly Audit comments. ICAR stated, in January 1996, that efforts were being made to reconcile the figures.

4.1.9 Works

A sum of Rs 40.42 crores was outstanding as of March 1995

against the deposits made by IARI with CPWD for execution of various works from time to time. Two cases test-checked are discussed below:

Extra expenditure due to delay in construction and change in specification of building

Preliminary estimate of Rs 6.88 crores for the construction of Lal Bahadur Shastri Centre for Advance Research in Biotechnology and Crop Protection sent to ICAR in February 1985 was approved in February 1987, but the work commenced in December 1988. Thus, there was a delay of 24 months in approval of estimate and 22 months in commencement of work.Besides,there were some changes in specifications, from time to time, which necessitated revision of estimate at different stages resulting in delay in construction. The preliminary estimate of Rs 6.88 crores was finally revised to Rs 13.75 crores in September 1991. Consequently, the work to be completed by December 1991 was completed in June-July 1994 at a total cost of Rs 15.70 crores as against the revised estimate of Rs 13.75 crores. Accepting the facts, ICAR stated, in January 1996, that the delay was due to difficulties in coordination between many agencies involved in demolishing of the existing structures for clearing the site for construction.

Underutilisation of equipment

IARI could not get electric connection to the building for the sanctioned load of 1494.76 KW despite deposit of Rs 30.67 lakhs made to Delhi Electric Supply Undertaking **(DESU)** in July 1992. Therefore, it availed of temporary connection of 500 KW. However, it continued to make the payments of electricity charges at the minimum rate applicable for the sanctioned load without upgrading the temporary load connection.The resultant overpayment on this account could not be computed due to relevent information not having been made available by IARI. In the absence of upgradation of electric supply, National Research Centre on Plant Biotechnology housed in this building was unable to operate most of the equipment which required much higher load. Further, Agricultural Chemicals Division also was not in a position to operate five equipment worth Rs 73.04

lakhs procured during 1993-94 and installed in this building to their optimum capacity resulting in their underutilization . ICAR accepted the facts in January 1996.

Incorrect estimate leading to delay in construction of glass house complex

The estimate of Rs 49.29 lakhs approved by ICAR in February 1988 for construction of glass house complex comprising of five glass houses, did not include the requirement of electrical fittings and air-conditioning. However,additional demand of Rs 49.29 lakhs for this purpose was made in March 1993 after a delay of five years which necessitated revision of estimate to Rs 98.58 lakhs in August 1993. Despite deposit of full amount with CPWD, the construction scheduled to be completed by December 1988 was not completed as of July 1995. ICAR stated in January 1996 that two glass houses had since been handed over to IARI in November 1995.

4.1.10 Stores and purchases

IARI placed an order with a firm at Hyderabad in February 1992 for supply of laboratory furniture costing Rs 114 lakhs to Lal Bahadur Shastri Centre for Advanced Research in Biotechnology and Plant Protection. While placing the order the lowest offer of Rs 83 lakhs was ignored resulting in loss of Rs 31 lakhs. Reasons for not accepting the lowest quotation were not furnished to Audit. Approval of ICAR was also not obtained before awarding of the contract. ICAR stated in January 1996, that the matter was under examination.

Annexure

Budget and expennditure of IARI during 1990-95.

(Rs in crores)

Head	1990-91		1991-92		1992-93		1993-94		1994-95	
	Budget provision	Expenditure	Budget provision	Expenditure	Budget provision	Expenditure	Budget provision	Expenditure	Budget provision	Expenditure
1. Institute										
Non-Plan	23.01	22.89	23.50	23.49	27.56	27.57	30.51	30.51	30.20	30.20
Plan including Institute Schemes of Basic and Applied Research	5.77	5.35	5.00	5.00	5.31	5.31	8.50	8.50	9.57	9.57
2. Research and Education Schemes										
(i) Schemes met out of ICAR funds.	-	1.13	-	1.19	-	1.77	-	1.44	-	3.67
(ii)Schemes met out of Agricultural Produce (A.P) Cess Fund	0.55	0.28	0.48	0.48	0.36	0.25	0.44	0.30	0.14	0.27
(iii)Schemes met out of PL 480 funds	0.31	0.26	0.28	0.13	0.10	0.05	0.04	0.03	0.02	0.02
(iv)World Bank funded schemes	-	-	-	0.30	-	2.97	-	2.42	-	3.79
(v) Foreign aided schemes	-	-	-	0.15	-	0.12	-	0.02	-	0.05
3. Deposit Schemes	-	1.70	-	1.46	-	2.29	-	1.90	-	2.20

4.2 Delay in supply of boats

For undertaking research on capture fisheries, the Central Inland Capture Fisheries Research Institute **(CICFRI)**, Barrackpore entered into an agreement with a firm in March 1990 for manufacture and supply of three mechanised wooden boats at a cost of Rs 15.40 lakhs. The delivery period was upto twelve months from the date of approval of the technical drawings subject to **force majeure**. The drawings were approved in October 1990. 90 **per cent** of the cost was payable to the supplier in advance in four instalments and the balance 10 **per cent** on expiry of the guarantee period or at the time of delivery against bank guarantee. The agreement provided for recovery of demurrage for delay in delivery @ Rs.500/- per day limited to a maximum of 5 **per cent** of the total contract price.

CICFRI paid Rs 13.86 lakhs as advance to the firm between September 1990 and February 1995 without obtaining bank guarantee towards security against advance payments. It also paid Rs 0.57 lakh towards price hike on engine in February 1995. However, the boats had not been delivered as of September 1995.

Thus, non-delivery of boats even after a delay of four years and an investment of Rs 14.43 lakhs defeated the purpose for which these were proposed to be acquired.

The Indian Council of Agricultural Research attributed, in September 1995, the delay to change in the specification of engine, acceptance of supplier's proposal for amendment in the agreement, negotiation of price variation of engines, delay in obtaining approval from Indian Registrar of Shipping's **(IRS)** for the drawings of the stern gears and delay in getting the approval of design and material of the propeller by IRS. It further added that the boats were ready for despatch and the formalities for transporting them were under process. CICFRI has, however, not indicated that it would invoke the contractual clause to recover demurrage for delay in delivery of boats.

4.3 Recovery at the instance of Audit

Indian Agricultural Statistic Research Institute **(IASRI)** New Delhi, entered into an agreement with a firm in March 1991 for supply and installation of a new computer system at a cost of Rs 82.70 lakhs. The hardware and software items scheduled to be supplied by 30 March 1991, were supplied during June 1991 to March 1993.

As per the agreement, if the firm failed to supply the items within the stipulated date, penalty at the rate of 2 **per cent** per week subject to a maximum of 10 **per cent** was to be levied. But IASRI failed to invoke the contractual penal provision, since it had not obtained bank guarantee of Rs 8.27 lakhs.

ICAR stated, in September 1995, that at the instance of Audit, they have obtained a bank guarantee of Rs 8.27 lakhs from the firm. It also added that a penalty of 2 **per cent** per week upto a maximum of 10 **per cent** of the cost for delayed supply would be imposed and deducted from the balance 20 **per cent** payment withheld from the firm.

Chapter V

Council of Scientific & Industrial Research

5.1 National Physical Laboratory

5.1.1 Introduction

National Physical Laboratory **(NPL)**, New Delhi was set up in 1947 as a national laboratory of the Council of Scientific and Industrial Research **(CSIR)** to pursue research on national standards of measurements and to strengthen and advance physics based research and development **(R&D)** appropriate to the needs of the nation.

5.1.2 Scope of audit

The accounts of NPL are audited under Section 20(1) of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. A review of project planning, implementation, monitoring, purchase and management of stores and financial management pertaining to the period 1990-95 was conducted during May-September 1995.

5.1.3 Organisational set up

NPL is headed by a Director who is assisted by a Research Council and a Management Council. The functions of Research Council are to advise and recommend formulation of research programme, conduct periodic review of research activities to assess their progress and to advise on fostering linkage between NPL and academic institutions, other research organisations, industry and potential clients. Management Council is responsible for management of day to day affairs of the Laboratory.

Research Council is required to meet not less than twice and Management Council not less than four times in a calendar year.

5.1.4 Highlights

- Planning, monitoring and evaluation group in NPL did not perform their assigned task rendering it ineffective. No high level Internal Committee was constituted for periodical review and evaluation of progress of the projects. Research Council did not conduct review and assessment of individual on-going R&D project.

  Out of 105 in-house projects, 37 were dropped midway during 1990-95 without assigning reasons by NPL. Projectwise files/records were not maintained by Laboratory. In the absence of project files, the ground on which 29 in-house projects were continuing for over 10 to 45 years could not be ascertained.

  Midway closure of a project resulted in unfruitful expenditure of Rs 5.59 lakhs. Similarly, stage -closure of another project had resulted in an infructuous expenditure of Rs 5.57 lakhs.

  (Para 5.1.7)

- During 1990-95, NPL developed 12 technologies. Out of these, eight technologies were transferred to industry and remaining four are yet to be transferred. Only three technologies were patented.

  (Para 5.1.8)

- NPL could generate external cash flow of 20.86 to 22.24 per cent of its total expenditure on R&D during 1992-95 against the target of 33.3 per cent.

  (Para 5.1.6)

- Failure to invest surplus funds in short-term deposits resulted in loss of interest of Rs 40 lakhs.

  (Para 5.1.11)

- The status of installation for 19 imported equipment procured at a cost of Rs 115.33 lakhs was not available on record.

  NPL incurred an extra expenditure of Rs 12.88 lakhs

towards purchase of an 'atomic cesium clock'. In another case unfruitful expenditure of Rs 5.40 lakhs was also incurred. on procurement of damaged 'high temperature horizontal tube furnace'.

NPL procured an equipment costing Rs 9.23 lakhs after completion of the project rendering it unfruitful.

(Para 5.1.9)

5.1.5 Manpower

As on 1 April 1995, NPL had 288 scientists, 687 technical and 305 administrative personnel against sanctioned strength of 317, 784 and 311 respectively. The ratio between scientific, technical and administrative personnel was 1:2:1. During 1990-95 seven to eleven **per cent** of the sanctioned scientific posts remained vacant.

5.1.6 Financial outlay and expenditure

NPL is financed mainly through funds released by CSIR. The receipt and expenditure of NPL during 1990-95 were as under:

(Rupees in Lakhs)

	Receipt				Expenditure			
Year	Opening balance	Grant	Misc Receipt	Total	Capital	Revenue	Total	Closing balance
1990-91	187.95	1026.00	72.00	1098.00	251.14	774.85	1025.99	260.05
1991-92	260.05	1062.30	86.44	1148.74	183.59	878.55	1062.14	109.27
1992-93	109.27	1123.50	42.54	1166.04	54.47	956.81	1011.28	245.82
1993-94	245.82	1185.00	82.99	1267.99	167.35	1017.09	1184.44	252.11
1994-95	252.11	1525.00	25.83	1550.83	243.40	1149.61	1393.01	493.97

It would be seen from the above that:

- the closing balance at the end of each year during 1990-95 was between Rs 109.27 lakhs and Rs 493.97 lakhs indicating release of fund in excess of requirement or slow progress of projects.

- 'miscellaneous receipts' decreased substantially during 1992-93 and 1994-95.

NPL was expected to generate one third of its expenditure on R&D from other sources by the year 1992-93 as per directive of CSIR. The percentage of external cash flow generated by NPL during 1990-95 was as under :

(Rs in lakhs)

	Receipt			Expenditure				
Year	Misc	Deposits	Total	Capital	Revenue	Deposits	Total	Percentage
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(4 to 8)
1990-91	72.00	261.78	333.78	251.14	774.85	258.42	1284.41	26.00
1991-92	86.44	171.39	257.83	183.59	878.55	270.10	1332.24	19.35
1992-93	42.54	229.16	271.70	54.47	956.81	210.33	1221.61	22.24
1993-94	82.99	210.66	293.65	167.35	1017.09	173.63	1358.07	21.62
1994-95	25.83	299.52	325.35	243.40	1149.61	166.67	1559.68	20.86

Percentage of external cash flow generated from outside agencies was 20.86 to 22.24 of the total expenditure during 1992-95, which was below the target of 33.3 **per cent** fixed by CSIR.

5.1.7 Research activities

The research activities of NPL are conducted as in-house, grants-in-aid, sponsored and consultancy projects.

Project planning, monitoring and evaluation

A planning, monitoring and evaluation **(PME)** group with full complement of staff was set up in NPL. PME group was responsible for budgeting, costing and maintenance of project folders for each project. However, since these functions were not performed by the PME group the estimated cost vis-a-vis actual expenditure incurred on each in-house project could not be ascertained in Audit.

NPL was also required to constitute a high level Internal Committee for conducting periodical review and evaluation of progress of the individual project. NPL did not constitute this committee.

NPL stated, in July-August 1995, that due to untrained staff in costing, the procedure could not be followed by PME group. The reply is not convincing because the composition of PME and Internal Committee as laid down by CSIR, did not provide the posts of cost accountants nor is a cost accountant necessary for project costing in NPL, once the guidelines are framed for costing them.

The minutes of Research Council meetings held during 1990-95 revealed that no periodic review and assessment of individual on-going R&D project was conducted by Research Council. As a result, R&D projects were continuing for considerable time without any appraisal of the progress.

In-house projects

In-house projects are undertaken as core activities of the laboratory and are financed from the funds received from CSIR. These projects are approved by Research Council keeping in view the objectives of the Laboratory.

NPL had 61 ongoing projects at the beginning of 1990-91. It undertook 44 research projects during 1990-95. 37 projects were dropped during this period while not a single project was completed.

NPL did not furnish information on objectives of the individual in-house projects, approved cost, duration and actual expenditure incurred on each of them and reasons for abandoning/dropping the projects.

Thus, no analysis regarding achievement of stated objectives, adherence to sanctioned cost, duration, deployment of manpower and assessment/finalisation of project report could be undertaken.

NPL stated, in May 1995, that files of individual in-house

projects were not maintained by them.

Eighth Five Year Plan document of NPL indicated the following position of projects as on 1 April 1992.

Years for which the project has been going on	No. of projects
45 and above	2
34-41	8
18-25	13
10-15	6
4-9	24
3 and below	10

In the absence of project files/records, the grounds for continuation of the projects, approval of time and cost by competent authority and periodic review by Research Council could not be ascertained in Audit. Besides, the correctness of the figures included in their Eighth Plan document could not be verified in the absence of projectwise folder/documents.

Consultancy projects

Consultancy projects are undertaken in areas of expertise of the laboratory and the cost of the project is recovered from the client. NPL undertook 57 projects, including one carried over from the previous year during 1990-95. 43 of them were completed and remaining 14 are continuing.

In 27 cases, the approved duration and actual date of completion were not available from the documents made available. Similarly, the details of the scientific/technical manpower actually deployed under individual consultancy projects were also not available. Thus, correctness of the amount recovered for the consultancy projects could not be ascertained.

Sponsored and grants-in-aid projects

Sponsored projects are wholly funded by the sponsoring agencies, while the grants-in-aid projects are funded by Government departments/agencies or international agencies either in full or in part.

While NPL undertook only two sponsored projects during 1990-95, the position of grants-in-aid projects, including collaborative projects, undertaken by NPL during 1990-95 is given below :

Year	No. of Projects				
	Brought forward	Undertaken during year	Completed during year	Dropped midway	Carried over
1990-91	40	5	4	-	41
1991-92	41	15	12	1	43
1992-93	43	17	14	-	46
1993-94	46	10	14	-	42
1994-95	42	33	9	1	65
Total		80	53	2	

Unfruitful expenditure

Out of 80 files relating to these projects requisitioned in Audit, only 50 were made available. Scrutiny of the files revealed that the expenditure incurred was rendered unfruitful in the following cases :

(i) Department of Science & Technology **(DST)** sanctioned a project titled "Data base on Electronic Materials" in November 1988 at a cost of Rs 6.60 lakhs to generate a comprehensive data base on electronic materials which was to cover defects in crystals, crystal structure of new compounds, thermodynamics and structure of nitrides and structure of amorphous silicon. The duration of the project was three years. The project envisaged exchange visits

between Russian and Indian Scientists. The cost of the project was revised to Rs 7.80 lakhs in November 1990. However, NPL did not complete even preparatory work relating to development of software till October 1992 when the project was closed after incurring an expenditure of Rs 5.59 lakhs.

NPL stated, in July 1995, that due to weakening of interaction with Russian counterparts during 1991-93, the project was closed.

(ii) Department of Non-Conventional Energy Sources **(DNES)** sanctioned in March 1989 a project titled "Development and Fabrication of 5 KW Sterling Engine suitable for working with a Solar dish or with any other equivalent heat source" at a total outlay of Rs 35.83 lakhs with a view to developing decentralised power production systems for supplying mechanical/electrical energy in remote villages using biomass or solar energy as fuel. The duration of the project was three years. Under the project, NPL was expected to develop and fabricate a solar dish suitable for operating with 5 KW engine at a cost of Rs 19.49 lakhs (revised to Rs 23.08 lakhs). NPL spent only Rs 5.57 lakhs on the project till March 1993. The project was, however, stage-closed, after more than five years in September 1994 on the ground that the project investigator was to retire in October 1994. This resulted in an infructuous expenditure of Rs 5.57 lakhs.

(iii) Department of Electronics **(DOE)** sanctioned a project "Development of Expert Optical System" at Rs 7.82 lakhs in December 1989 to be completed in four years. DOE released grant of Rs 3.28 lakhs in March 1990. NPL spent Rs 2.71 lakhs upto March 1993 on this project, which included purchase of equipment at Rs 2.66 lakhs in 1990-92. There has been no progress since the project investigator retired from service in December 1990. NPL had forwarded a proposal in 1989 and took up this project in December 1989, knowing fully well that the project investigator was to retire in December 1990. The equipment has been lying idle and the entire expenditure on the project has been rendered infructuous.

Shortfall in achievement of objectives

DST sanctioned a project titled "Meteorological Studies on Standards of Measurement" in July 1988 at a cost of Rs 49 lakhs for completion in three years. The project was to be implemented by NPL in collaboration with National Institute of Standards and Technology, USA.

Out of four components of the project, only two were completed at a cost of Rs 49 lakhs till May 1993. In June 1993, NPL approached DST for extension of the project by two years with additional funds of Rs 20 lakhs. The request was, however, not accepted.

Thus, even after spending the entire amount originally approved by DST during more than the expected duration of the project, only two out of four components of the research was completed.

5.1.8 Development of technology

NPL developed 12 technologies during 1990-95. Of these, only 8 technologies were transferred to industries for commercial exploitation. It is yet to transfer 4 technologies to industries.

In cases where technology is transferred by NPL, it receives royalty as per the norms laid down by CSIR. However, NPL had no mechanism to monitor receipt of the amount of royalty due from the concerned parties to whom technologies were transferred directly.

In the context of specific products/process/services to be marketed, Research Council had in its meeting held in August 1993 suggested NPL to involve a consultant with its marketing cell on case to case basis. NPL is yet to act on this suggestion.

5.1.9 Purchase of equipment

A rationalised purchase procedure **(RPP)** was prescribed by CSIR in 1988 which was to be followed by the Laboratories/Institutes under its control. RPP, **inter-alia**,

provided for constitution of separate standing purchase committees for purchases. The prescribed purchase procedure was, however, not followed in some cases.

Test-check of purchases made during 1990-95 revealed the following :

Purchase of equipment/materials

(i) Purchase of item costing upto Rs 0.50 lakh was to be made by inviting limited tender and those exceeding this amount by inviting open tender. It was observed that in 11 purchase cases involving an amount of Rs 79.65 lakhs, as against open tenders, NPL invited single tender in 6 cases and limited tenders in 5 cases.

(ii) NPL imported 19 equipment valuing Rs 115.33 lakhs during 1992-95. But there was no record to ascertain whether these equipment were installed/commissioned. In the absence of relevant details, installation and utilisation status of these equipment could not be verified in Audit.

Extra expenditure

NPL placed purchase order in February 1990 on a foreign firm for procurement of 'atomic cesium clock' at a cost of Rs 7.95 lakhs. While placing the purchase order NPL did not ascertain whether the foreign firm had valid export licence. In the meantime NPL established letter of credit for the same amount. The firm however, did not supply the clock since it could not obtain export licence. NPL had to place purchase order on another foreign firm in September 1992 at a cost of Rs 20.83 lakhs, resulting in extra expenditure of Rs 12.88 lakhs. NPL stated, in August 1995, that they would exercise greater care in future.

Unfruitful expenditure

(i) NPL placed purchase order in December 1991 on a foreign firm for procurement of 'high temperature horizontal tube furnace' under a grants-in-aid project at a cost of Rs 6.68 lakhs. The equipment was received in June 1992. On

inspection, it was found that out of its 19 heating elements, 12 were damaged in transit. Insurance claim of Rs 1.28 lakhs was obtained by NPL in July 1993. The equipment could not be used in the project for which it was acquired due to damage, resulting in unfruitful expenditure.

(ii) The laboratory imported in January 1993, a 'spray drier' at a cost of Rs 9.23 lakhs for use in the project titled "Development of Sodium Sulphur Batteries for Electric Vehicles". The project was, however, completed in March 1992 without its use. Thus, procurement of spray drier at a cost of Rs 9.23 lakhs in January 1993 was not justified. In the absence of this equipment NPL resorted to manual granulation and could achieve life cycle of upto 120 cycles against the target of 500 cycles. The equipment was still lying idle, resulting in unfruitful expenditure of Rs 9.23 lakhs in addition to non-achievement of desired objective of the project.

Non maintenance of log books of equipment

NPL held equipment valuing Rs 24.56 crores till March 1995. However, no log books in respect of major and costly equipment were maintained. In the absence of log books, the extent of utilisation of these equipment could not be ascertained in Audit.

5.1.10 Stores

Overstocking and unserviceable stores

(i) Test-check of the stock registers revealed that 176 items having book value of Rs 5.18 lakhs had never been issued for periods ranging from two to twenty four years since the date of their purchase.

NPL stated, in October 1995, that action to dispose them off was under process.

(ii) 573 items of unserviceable stores, having book value of Rs 153 lakhs as identified by committee constituted for the purpose were lying for disposal since 1988-95. NPL did not take action to dispose them off so far.

Physical verification of stores

Annual physical verification of the stores is required to be done once in a year. It was, however, observed that no physical verification was conducted during 1991-94. Physical verification which started in June 1994 for 1994-95 was yet to be completed as of October 1995.

5.1.11 Other points

Loss of interest

Substantial amount representing unspent balances relating to grants-in-aid and to grants-in-aid and collaborat invested in short term deposits by NPL as detailed below:

(Rs in lakhs)

Year	Opening Balance	Closing Balance
1990-91	217.34	219.05
1991-92	219.05	116.98
1992-93	116.98	129.04
1993-94	129.04	164.47
1994-95	164.47	269.34

Failure to invest the unspent amount of Rs one crore every year in short term deposits, resulted in a loss of interest of Rs 40 lakhs at the rate of 8 **per cent** during 1990-95.

NPL stated, in October 1995, that the surplus funds would be invested in future.

Demurrage charges

NPL took 10 to 107 days for clearance of various consignments from the date of their receipt at the airport resulting in payment of demurrage charges of Rs 4.86 lakhs for clearance of 664 consignment during 1990-95. Further, NPL did not report the cases of demurrage charges exceeding

Rs 250 to CSIR as required under CSIR's instructions.

Bank reconciliation

Bank reconciliation was completed by NPL upto March 1995. It revealed the following short-comings/discrepancies :

a) In 55 cases, pertaining to the period from June 1987 to March 1995, although receipts of the credits totalling Rs 112 lakhs had been accounted for in cash book, these had not been included in bank account. Of these, 24 items aggregating to Rs 7.88 lakhs pertained to the period 1990-94. No follow up action was taken by NPL with its bankers to get credit of this amount.

b) Rs 104 lakhs debited to its account by the bank did not have corresponding entries in the cash book. Of these, Rs 65.37 lakhs were pertaining to the period 1990-94.

NPL stated, in September 1995, that the matter would be pursued more vigorously at higher level with the bank.

Outstanding advances

An amount of Rs 96.66 lakhs was outstanding against officials, private parties, government organisations etc. on account of travelling allowance, purchase and supply of materials/equipment etc. as of September 1995. as indicated in the table below :

(Rs in lakhs)

Year	Government. officials	Government. departments	Private parties
1966-78	-	0.22	-
1978-85	-	0.44	1.23
1985-86	-	0.48	0.37
1986-87	-	0.20	2.41
1987-88	0.05	0.17	1.45
1988-89	0.21	0.10	0.23

1989-90	0.02	0.05	1.38
1990-91	0.01	0.86	1.25
1991-92	1.00	11.50	1.53
1992-93	1.93	3.88	2.20
1993-94	3.18	6.91	8.66
1994-95	20.60	3.45	20.69
Total	27.00	28.26	41.40

Of these, Rs 41.40 lakhs was outstanding with private parties from 1978-79 onwards while an amount of Rs 27 lakhs towards travelling allowance/leave travel concession and local purchases was outstanding with officials of NPL since 1987-88.

5.2 Central Road Research Institute

5.2.1 Introduction

The Central Road Research Institute **(CRRI)**, New Delhi was set up in July 1952 to undertake research and development in the area of roads and road transportation.

The objectives of CRRI are as under:

- Development of technologies for investigation, design, construction and maintenance of different types of roads, runways and bridges;
- Characterisation of road construction materials;
- Development of techniques for rural road network;
- Research in transportation planning, traffic engineering, road safety and environmental problems; and
- Providing technical advice to solve highway problems, dissemination of technical information and training of in-service highway professionals.

5.2.2 Scope of Audit

The accounts of CRRI are audited under Section 20(1) of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. The present review covers activities of the Institute for the period 1989-95.

5.2.3 Organisational set-up

CRRI is headed by a Director who is assisted by a Research Council and a Management Council. As on 1 April 1994 CRRI had 125 scientific, 253 technical and 149 administrative personnel against the sanctioned strength of 165, 287 and 170 respectively.

5.2.4 Highlights

- **Out of 25 in-house projects, only six were completed during 1989-95. In eight sponsored projects delay ranged for more than three to ten years. Only six in-house projects were completed during 1989-95 whereas 138 consultancy projects were completed during this period.**

  (Para 5.2.6)

- **Recoveries on account of salary component in sponsored and consultancy projects was not made in accordance with actual deployment of scientists.**

  (Para 5.2.7)

- **The amount earned by CRRI towards technology development and transfer of know-how was insignificant.**

  (Para 5.2.8)

- **Irregularities in procurement, infructuous expenditure, equipment lying idle, delay in installation of equipment/machineries were noticed in nine cases involving Rs 226.14 lakhs.**

  (Para 5.2.10)

- **Lack of follow up action resulted in irregular transfer of Rs 4.42 lakhs to laboratory reserve.**

- **Failure to invest surplus funds in short term deposits resulted in loss of Rs 13.63 lakhs in the form of interest income.**

(Para 5.2.9)

- **Receipt from external sources during 1992-93 and 1994-95 ranged between 10 and 21 per cent,which was below the norms fixed by CSIR..**

(Para 5.2.5)

5.2.5 Financial management

Receipts and expenditure

The Institute is financed mainly through funds released by CSIR. The receipts and expenditure of CRRI other than those on sponsored/consultancy projects during 1989-95 was as under:-

(Rs in lakhs)

Year	Opening balance	Grant	Misc.* Receipts	Total	Expenditure * Capital	Revenue	Total	Closing balance
1989-90	175.79	275.00	36.99	311.99	54.75	272.75	327.50	218.10
1990-91	218.10	340.00	23.80	363.80	56.85	303.69	360.54	237.92
1991-92	237.92	280.00	4.96	284.96	70.10	324.34	394.44	30.06
1992-93	30.06	445.00	Nil	445.00	60.89	404.93	465.82	295.74
1993-94	295.74	498.00	6.62	504.62	55.78	457.73	513.51	164.95
1994-95	164.95	580.00	8.65	588.65	58.79	460.69	519.48	86.98

* Does not include certain other receipts and expenditure items

It would be seen from the above that:

(i) During four out of six years, the institute was left with huge closing balance of 32 to 66 **per cent** of the expenditure during the years. This indicated that either the projects were not undertaken as per the schedule or the institute obtained funds from CSIR in excess of its requirements.

(ii) The amount received on account of "miscellaneous receipts", which included royalty/premia, consultancy fee,

analytical testing charges, fee from sponsored projects, lab equipment service etc., declined from Rs 36.99 lakhs to Rs 8.65 lakhs in 1994-95 (there was no receipts during 1992-93).

Generation of resources

As per directive of CSIR, CRRI was expected to be more user responsive and to generate at least one third of its expenditure on R&D from 1992-93. The position of generation of external resource vis-a-vis total expenditure, including that on sponsored/consultancy projects during 1989-95 was as under:

(Rs in lakhs)

Year	Receipts			Total expenditure	Percentage (4) of (5)
	Misc. Receipts	Deposit of sponsored/ consultancy projects	Total		
(1)	(2)	(3)	(4)	(5)	(6)
1989-90	36.99	150.45	187.44	429.22	43.67
1990-91	23.80	87.91	111.71	425.65	26.24
1991-92	4.96	79.23	84.19	377.55	22.30
1992-93	-	49.39	49.39	503.07	9.82
1993-94	6.62	61.02	67.64	542.47	12.47
1994-95	8.65	114.56	123.21	588.94	20.92

Receipt from external sources during 1992-93 and 1994-95 was between 10 and 21 **per cent** of expenditure, which was below the norms of 33 **per cent** fixed by CSIR.

5.2.6 Research activities

Research & development **(R&D)** activities of CRRI are carried out through in-house, sponsored, consultancy, grants-in-aid and collaborative projects.

Monitoring and evaluation

CRRI constituted a Planning, Monitoring and Evaluation **(PME)** Division consisting of one scientist and three supporting technical staff as a focal point for project budgeting, monitoring and evaluation for projects. PME Division was also responsible for maintenance of records relating to recommendations of Research Council. Though PME Division was to act as a repository of consolidated data about the number of projects sanctioned, those successfully completed, abandoned or terminated, expenditure incurred thereon vis-a-vis sanctioned estimates, manpower deployed, duration and nature of individual projects etc., no such information was available with it. Project-wise accounts were not made despite instructions of CSIR and recommendation of Research Advisory Group **(RAG)** in its meeting held in January 1992.

In the absence of relevant details about in-house projects, the extent of delay in respect of individual projects and cost over-run could not be ascertained.

In-house projects

In-house projects are core function of the institute. These are financed entirely from funds received from CSIR. The projects are undertaken with approval of Research Council in the context of requirement of technology of road sector.

CRRI had 16 ongoing in-house projects as on 1 April 1989. It undertook nine in-house projects during 1989-95. The institute, however, completed only six projects during this period which included two projects undertaken prior to April 1989. The main in-house projects were re-named and re-classified in 102 sub-projects, of which, 71 were completed and eight were dropped. CRRI did not prepare project-wise progress reports in spite of suggestion of Research Council. The sub-projects did not yield any new results/technology and were derived from sponsored and consultancy projects as stated by CRRI in May 1995. CRRI did not maintain accounts of actual expenditure incurred vis-a-vis projected financial outlay on the individual

in-house projects as no separate accounts were maintained.

In the absence of project files of in-house projects, scrutiny of related documents was undertaken by Audit which revealed as under:

(i) Study of compositional factors of granular mixes

This project was undertaken in 1984 at an estimated cost of Rs 14.38 lakhs to be completed by 1990. The objective of the project was to study the effect of quality of stone grading of coarse aggregate, plasticity and plastic fraction of fillers etc. Proceedings of Research Advisory Group, revealed that while reviewing the progress in July 1989, it recommended that the project be kept in abeyance due to staff constraint. The remaining part was to be undertaken in the Eighth five year plan. The Research Council, however, in its meeting held in the same month recommended that the work on granular material characteristics should be continued by diverting additional manpower. CRRI did not follow the recommendation of either of them and merged it with another project "Material Characteristics of Pavements". Thus, the in-house project, which was pursued for over five years out of total duration of six years, was left incomplete.

(ii) Study and development of basic traffic flow characteristics and traffic control devices

This project was undertaken in April 1985 at an estimated cost of Rs 25.25 lakhs for completion in six years. The project comprised of six sub-projects, namely, (i) Performance of signals, (ii) Traffic flow models, (iii) Evaluation of public transport routes, (iv) Speed flow studies, (v) Traffic simulation studies and (vi) Traffic flow data. The progress of the sub-projects was slow because of inadequate scientific and technical manpower and funds. However, a new project called "Basic traffic flow characteristics" with financial outlay of Rs 72.91 lakhs was undertaken by the institute in Eighth Plan to pursue objectives of the original project. The expenditure incurred on the sub-projects of the earlier project during five years of its execution was not available with CRRI nor

were the results of five years of research available. Without concluding the original project, it was renamed after its scheduled date of completion for continuance during the Eighth plan period. This practice of taking up of new projects by other name but with more or less same objective deprived the institute of means to assess the cost and time at which the projects were completed and did not promote accountability.

(iii) Development of a rolling resistance test facility

In order to set up a test facility which would result in evaluation of tyres in terms of fuel efficiency that affects the road user costs, the transient and steady state etc., the Research Council approved in January 1991 a project "Development of rolling resistance test facility" at an estimated cost of Rs 3.70 lakhs. Only Rs 0.80 lakh was spent on the project till March, 1995. The estimates of the project were revised to Rs 10.10 lakhs in March 1995 with a duration of two years by the Director of the institute. Thus, a facility not available in India and which was proposed to be set up in the national interest was delayed by over four years.

(iv) Low priority to in-house projects

Total number of in-house projects vis-a-vis sponsored and consultancy projects taken up by CRRI during 1989-95 and the rate of completion of different categories of projects revealed that large number of consultancy projects were undertaken as compared to in-house thrust area projects. Only six in-house projects were completed as against 138 consultancy projects as shown below:

S.No.	Nature of Project	Projects taken up including brought forward	No. of Projects Completed	Rate of completion (in **per cent**)
1.	In-house	25	6	24
2.	Sponsored/ Consultancy	185	138	75

On an average 50-60 **per cent** scientists in the institute were engaged on consultancy projects. This indicated that the consultancy/sponsored assignments were given precedence over in-house projects, in disregard of the recommendation made by Research Council in April 1990 to accord lower priority to consultancy projects.

Sponsored/consultancy projects

Sponsored projects are wholly funded by the sponsoring agencies while consultancy projects are undertaken upon request from clients and the cost of such project is fully recovered from the concerned agencies.

Out of total 185 sponsored/consultancy projects including those continuing from previous years undertaken during 1989-95, 138 were completed and one project was dropped.

Test-check of 15 sponsored projects revealed considerable delay in six completed and two ongoing cases as given in table below:

Period of delay	Name of Projects	
	Completed	Ongoing
3 years or more	1. Preparation of state of art report on landslides correction techniques.	1. Development and Application on Traffic Simulation Model
	2. Development of thermo-plastic as a substitute to reflective road marking paints	2. Estimate of short haul urban and sub-urban Freight Traffic
	3. Pavement performance study - EPS Part-I	
	4. Maintenance of cost studies for pavements under different conditions	

10 years or more	1.	Criteria for the choice of type of bituminous surface course for flexible pavements.
	2.	Development of specifications for constructions of roads on expensive (Black cotton) clay areas.

The maximum delay was in project 'Criteria for the choice of type of bituminous surface course for flexible pavements'. This project was undertaken in July 1977 for completion by July 1982 but was completed 12 years three months later in September 1994.

5.2.7 Costing of sponsored/ consultancy projects

Pro-rata expenditure on salaries of scientists engaged in sponsored/consultancy projects and receipt from them during 1989-95 were as under:

(Rs in lakhs)

Year	Expenditure on salary of scientists	Percentage deployment of scientists on consultancy/ sponsored projects	Proportionate salary of scientists deployed on consultancy/ sponsored projects	Total receipt from consultancy/sponsored projects
1989-90	76.66	50.49	38.70	150.45
1990-91	81.64	52.63	42.97	87.91
1991-92	96.65	55.65	53.78	79.23
1992-93	114.97	54.69	62.88	49.39
1993-94	125.55	53.54	67.22	61.02
1994-95	133.45	60.98	81.38	114.56

The cost of sponsored projects is made up of salary of scientists/staff directly deployed on the project, purchase

of equipment, contingent expenditure, charge for equipment use, consumables at prescribed rates besides administrative/ institute overheads. It would be seen from the above table that the receipt from consultancy/sponsored projects did not even meet the expenditure on salary of scientists directly deployed on them during 1992-94. Thus, CRRI was, in effect, subsidising the research sponsored by other agencies from the funds received from CSIR. CSIR would need to revise costing norms of consultancy projects so as to recover not only full expenditure on the project but also to charge a margin for use in R&D in the institute.

5.2.8 Transfer of technology

CRRI developed 19 technologies including eight technologies relating to improvement of existing technologies during 1989-95. It filed 11 patents during the same period and obtained licence for only four. The patents for remaining seven technologies were yet to be obtained as of November 1995.

The total amount of royalty received by CRRI in six years was a meagre Rs 2.50 lakhs.

CRRI was required to conduct annual review of intellectual property licensed, including follow up with the licensee to determine status of utilisation and to examine any technical modification/development. However, it did not conduct annual review during the entire period 1989-95.

5.2.9 Accounts

Non-reconciliation of difference

CRRI had completed bank reconciliation upto March 1995. Test-check of bank reconciliation revealed that CRRI had deposited cheques/drafts worth Rs 1.25 lakhs during August 1978 to August 1994 for which no credit was afforded by bank. Bank had also afforded excess credit amounting to Rs 5.88 lakhs to the institute during the same period. Besides, there was a difference of Rs 0.22 lakh in bank statements. It credited the net balance of amount of Rs 4.42 lakhs in the cash book and transferred it to the laboratory reserve

instead of reconciling these differences individually. CRRI need to reconcile the difference immediately.

Non-investment of surplus funds

During July 1992 to August 1993 CRRI held surplus funds of Rs 106.46 lakhs to Rs 312.21 lakhs in its accounts against minimum and maximum monthly expenditure of Rs 33.95 lakhs and Rs 70.15 lakhs respectively. Failure to invest the surplus cash balances in short term deposit resulted in loss of interest of Rs 13.63 lakhs at the rate of eight **per cent** per annum.

Outstanding advances

Advances to officials, private parties, government organisations etc of Rs 77.46 lakhs upto March 1995 were outstanding for adjustment as under :

(Rs in lakhs)

Year	Private parties Amount	Government Organisation Amount	Advances to officials: Contingent	Advances to officials: TA/LTC	Total Amount
Upto 1984-85	1.029	5.383	-	-	6.412
1985-86	1.071	0.106	-	-	1.177
1986-87	-	0.037	-	-	0.037
1987-88	0.263	0.370	-	-	0.633
1988-89	2.892	0.034	-	-	2.926
1989-90	1.774	4.086	0.007	-	5.867
1990-91	1.377	0.058	0.016	-	1.443
1991-92	0.234	-	-	0.019	0.253
1992-93	11.512	0.350	-	0.061	11.923
1993-94	3.359	0.078	0.006	0.309	3.752
1994-95	27.477	0.827	4.745	9.979	43.038
Total	50.988	11.331	4.774	10.368	77.461

Though the institute had constituted a committee to review the position of outstanding advances, there was no perceptible improvement. The institute needs to expedite adjustment or recovery of the outstanding advances from outside agencies. Outstanding advances against staff may be recovered forthwith. Besides, institute needs to strengthen the mechanism to monitor the advances for quick recovery or adjustment.

5.2.10 Purchase of equipment

Procurement of equipment

Test-check of procurement of equipment revealed following shortcomings:-

(i) Unfruitful expenditure

CRRI procured a vehicle 'Prime Mover' and 'Trailer' at a cost of Rs 6.58 lakhs in October 1990. These were to be used with main equipment 'Horizontal drain drill' for which a separate purchase order had already been placed in September 1988 (amended in January 1989) with a foreign firm at a cost of US $ 363201. However, the main equipment could not be procured by CRRI as the World Bank loan did not materialise. Thus, the total expenditure of Rs 8.75 lakhs, including incidental charges on vehicle and trailer, without firm arrangements regarding financing of the main equipment, was rendered unfruitful. The Prime Mover and trailer were disposed off by CRRI in September 1994 for Rs 4.61 lakhs only against the highest bid of Rs 7.01 lakhs received in July 1992 due to administrative delays. It resulted in avoidable loss of Rs 2.40 lakhs.

(ii) Infructuous expenditure

For continuous measurement of skid resistance, CRRI procured 'Mu-meter' from a foreign firm at a cost of £ 34380 in April 1989. The operation of equipment needed a high speed towing vehicle. This requirement was not included by the institute in its supply order. Thus, the equipment costing Rs 10.30 lakhs could not be commissioned and made operational as of July 1995.

Equipment lying idle

(i) With a view to conducting realistic studies on actual skidding aspects during vehicle pavement interaction, CRRI imported a 'Skid Resistance Trailer' at a cost of Rs 21.68 lakhs in March 1985. The institute released the agency commission of the local agent, though they had failed to calibrate the equipment. The equipment was used for data collection on five days only and thereafter it was lying idle in the absence of caliberation and due to other defects since January 1988.

(ii) CRRI imported a 'Lacroix deflectograph' in October 1989 at an expenditure of Rs 52.03 lakhs. During inspection in February 1990 it was noticed that a vital component of the system was damaged. The equipment was commissioned in May 1990 after carrying out repairs. However, it went out of order in August 1991. CRRI could not get it repaired as of July 1995. Thus, the equipment costing Rs 52.03 lakhs was used only for 57 days in more than five years.

(iii) To undertake non-destructive testing of pavement and study of pavement deflection response under dynamic loading conditions, CRRI acquired an equipment "Dynamic Deflection Device **(DDD)**" costing US $ 2,23,312.00 equivalent to Indian Rs 29.49 lakhs in June 1988 under United Nations Development Programme **(UNDP)**. In February 1989, while commissioning the equipment, it was noticed that its load cells were damaged and required to be replaced. Spare parts required to be received alongwith the equipment were also found missing. Due to expiry of the validity period, claim could not be preferred with the insurance company. The equipment was lying idle since its receipt in February 1989. CRRI has not made alternative arrangements to make the machine operational.

(iv) In order to carry out the R&D works of Flexible Pavement Division, CRRI procured "Model 1700 FTIR Spectrophotometer" in September 1986 from a foreign firm through its local agent at a cost of £ 42,978 equivalent to Rs 8.76 lakhs. The equipment was commissioned in February 1987. It, however, stopped functioning in July 1990. CRRI took 54 months to repair it in May 1994.

Delay in installation

In the following cases there were delays of 11 to 45 months in installation of equipment:

S.No.	Equipment	Cost (Rs in lakhs)	Month of receipt	Month of Installation	Delay in months
1.	Bump Integrator Unit	9.56	July 1989	March 1993	45
2.	MTS Triaxial Soils Testing System Model B-10-20	73.80	November 1989	January 1992	27
3.	Walk-in-Environment Chamber-type VEM-03-5500	11.77	July 1989	June 1990	11

CRRI did not furnish reasons for delay in installation.

5.3 Central Glass and Ceramic Research Institute

5.3.1 Introduction

Central Glass and Ceramic Research Institute **(CGCRI)**, Calcutta, was established in 1950 to undertake research and development in the field of glass, ceramics, refractories, vitreous coatings and allied disciplines.

5.3.2 Scope of Audit

Audit of CGCRI is conducted under Section 20(1) of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. The present review is based on test-check in audit of transactions of CGCRI pertaining to the period 1990-95.

5.3.3 Organisational set up

CGCRI is headed by a Director who is assisted by a Research

Council and a Management Council. Research Council consists of external experts, representatives of Government of India and CSIR, Director of the Institute and a senior scientist from another national laboratory. The Council advises and recommends on formulation of research programmes, conducts periodic reviews of research activities, assesses the progress of projects and advises on fostering linkages between the institute and other research organisations/ industry. Management Council consists of the Director and Scientists from CGCRI and other organisations and the Director General of CSIR or his nominee. It is responsible for managing the day to day affairs of the Institute.

The Institute has extension centres at Khurja, U.P. and Naroda, Gujarat for rendering technical assistance to local industries.

The Institute has 846 sanctioned posts of which 135 are scientists and 543 are technical personnel. As on 1 April 1995, it had 695 personnel in its stength which consisted of 116 scientists and 446 technical personnel. The remaining were non technical/administrative staff.

5.3.4 Highlights

- **Out of 18 projects scheduled to be completed during 1990-95, only nine projects were completed after a time overrun ranging from 12 months to 60 months.**

  Failure of CGCRI to maintain project-wise cost deprived it of a vital management control and diluted the accountability.
  CGCRI had no system for obtaining feedback on the utilisation of its findings by sponsors. It deprived the Institute of opportunity to offer the technology to others.

  Despite creation of a Technology Marketing Cell, six out of nine processes developed by CGCRI during 1990-95, could not be released to the industry for want of buyers and lack of interest from the industry.
  (Para 5.3.6)

- **Science and Technology Committee of the Institute did not review 14 out of 21 on-going projects during January 1992 to March 1995.**

(Para 5.3.7)

Failure to invest the entire available surplus funds of Laboratory Reserve resulted in a loss of interest of Rs 7.52 lakhs.

(Para 5.3.8)

- **Pilot plant for developing optical glass technology was not successful since the optical glass was available in market at much cheaper rate. While the revenue expenditure on the plant increased, operation of the plant only added to unsold stock of optical glass.**

(Para 5.3.6)

5.3.5 Receipts and Expenditure

The Institute is financed mainly through funds released by CSIR. The receipts and expenditure of CGCRI during 1990-95 were as under:

(Rs in lakhs)

Year	Funds from C.S.I.R	Other Receipts	Total Receipts	Total Expenditure
1990-91	734.00	43.40	777.40	640.12
1991-92	588.00	48.35	636.35	735.14
1992-93	732.00	59.98	791.98	751.45
1993-94	875.00	49.07	924.07	850.24
1994-95	770.00	37.94	807.94	859.74

5.3.6 Research activities

Research and Development **(R&D)** activities of CGCRI are conducted mainly as in-house projects, grants-in-aid projects, sponsored and consultancy projects.

In-house Projects

In-house projects are undertaken to develop technology/ products in the context of national requirement and demand from industry. At the beginning of 1990-91, CGCRI had 16 on-going projects. It undertook five new research projects during 1990-95. In house research projects are proposed by Scientists of the institute and recommended by two in-house committees, namely the Glass and Ceramic Apex Committee and the Science and Technology Committee.

The research projects are to be taken up after a market and technology survey to establish demand from industry and national need. However, the institute did not carry out proper market and techno-economic survey before approving any in-house project on the ground that it did not have enough resources.

Out of 18 projects scheduled to be completed during this period, only nine were completed after a time overrun of 12 to 60 months.

CGCRI did not maintain project-wise cost. Thus, it did not have means to ascertain and analyse the cost at which projects were completed. The original cost estimates prepared at the time of approval of the projects were rendered irrelevant since no record of expenditure on individual projects was kept. Thus, the cost overrun on the projects could not be worked out and analysed. The existing system of non-maintenance of project-wise cost data dilutes the accountability of researchers to stick to time and cost schedule.

Out of 17 patents filed by CGCRI during 1990-95 only 13 were commercialised.
Test-check of documents relating to seven projects undertaken during 1990-95 revealed as under:

(a) Optical communication fibre

CGCRI undertook a project on optical communication fibre in 1980 at a cost of Rs 152.80 lakhs with stipulated date of completion as 1990. The project period was later extended

upto 1993-94. Due to delay in completion of the project, the parties showing initial interest had backed out rendering the expenditure infructuous.

(b) New generation of optical glasses

A project on "development of new generation of optical glasses" was taken up in 1987 at a cost of Rs 99.05 lakhs to develop six types of optical glass by 1990 against a demand projected by Defence Services. The project was stated to have been completed in 1994-95. However, only two types of glass could be developed. 900 kgs special quality glass worth Rs 19.75 lakhs was lying unsold as of October 1995.

(c) Low moisture castables

A project to develop (i) low moisture castables, (ii) ultra low moisture castables and (iii) acousto ultrasonic study was shown as completed in 1994. However, scrutiny of the documents revealed that only one part of the project, viz, development of low moisture castables had actually been completed.

(d) Super conducting ceramic and thin film application

The duration of another project on "super conducting ceramic-basic studies and thin film application", taken up in 1988, was extended in 1992-93 for continuance upto 1997. However, the project was merged midway with another project in 1993-94, without including its objectives in the merged project. The original project having been abandoned midway, the expenditure of Rs 53.40 lakhs incurred before merger was rendered unfruitful.

Sponsored and grants-in-aid projects

Sponsored projects are wholly funded by the sponsoring agencies, while the grants-in-aid projects are funded by Government departments/agencies or international bodies either in full or in part.

CGCRI completed 36 projects out of 64 projects undertaken during 1990-95 as under:-

	1990-91	1991-92	1992-93	1993-94	1994-95
1. Opening balance	6	13	18	22	24
2. Taken up	10	15	9	10	14
3. Completed	3	10	5	8	10
4. Closing balance	13	18	22	24	28

The grantors/sponsors are required to commence commercial exploitation of the process within six months of receipt of the final report and to start production within two years. In the event of default CSIR could offer the process to any other party and share the royalty received on 50:50 basis with the sponsor/grantor subject to the condition that maximum amount payable to sponsor/grantor is restricted to the amount received by CSIR from them for developing the process.

The Technical Monitoring Cell of the institute did not have any system for obtaining feedback from the sponsoring agencies on commercial exploitation and production of the research output against the projects sponsored by them. Therefore, CGCRI had no scope to offer the processes to other interested buyers and increase its receipts from other sources.

Pilot plant

A Pilot Plant was established in 1959 to develop optical glass technology to meet the requirement of defence forces and optical glass industry.

The annual production declined from 6736 Kg in 1990-91 to 1849 Kg. in 1994-95 on account of lack of demand, mainly because the optical glass is freely available from industry at much cheaper rates. The revenue expenditure on operation of the plant, however, increased from Rs 52.50 lakhs in 1990-91 to Rs 73.00 lakhs in 1994-95. The total revenue

expenditure of Rs 323.68 lakhs during 1990-95 was more than double the total value of production (Rs 160.70 lakhs). The value of unsold stock of optical glass produced in the pilot plant had increased from Rs 65.32 lakhs in 1990-91 to Rs 140.61 lakhs during 1994-95.

5.3.7 Monitoring and Evaluation

As per the guidelines issued by CSIR, CGCRI was required to set up a project monitoring and evaluation cell for project budgeting, cost accounting and maintenance of project folders with all project details as well as physical and financial reports. The Institute was also required to set up an internal committee for allocation of resources to different projects and periodic monitoring and evaluation of the projects.

Project costing and budgeting has not been introduced so far. Project folders containing essential details including physical and financial targets and outlays, progress and completion reports have also not been maintained.

Science and Technology Committee is supposed to review the research projects at regular intervals. However, it did not review 14 out of 21 on-going projects during January 1992 to March 1995.

5.3.8 Loss of interest

Laboratory Reserve fund was introduced by CSIR with effect from April 1992, authorising each laboratory/institute to retain receipts generated through specified types of research and development as its Laboratory Reserve. The laboratories were authorised to invest surplus funds. CGCRI had accumulated surplus of Rs 63.28 lakhs by 1994-95 in Laboratory Reserve. It invested only Rs 30.00 lakhs in December 1994. Failure to invest the entire available surplus funds resulted in loss of interest of Rs 7.52 lakhs at 10 **per cent** per annum for the period April 1992 to March 1995. CGCRI stated, in July 1995, that the steps were being taken to invest the balance amount.

5.4 Unproductive expenditure

With a view to coupling the existing and functional Gas Chromotograph (GC) with FTIR for continuous analytical performance of scientific data, Regional Research Laboratory **(RRL)** Jorhat placed purchase order in August 1992 on a foreign firm for supply of connection system 2000 FTIR perkin elmer along with accessories at a cost of Rs 5.09 lakhs.

The connection system was received at RRL in January 1993 but could not be installed as the accessories were found damaged/defective. The warranty replacement, were air-lifted by the supplier in July 1993 free of charge. However, this consignment was cleared from Customs warehouse, Calcutta in March 1994 after a delay of eight months despite Indian agent's advice in October 1993 to clear the consignment at the earliest as the item was highly hygroscopic. Due to delay in clearance, the accessories were found in spoiled condition.

The replacements for defective accessories costing Rs 0.20 lakh had to be procured by RRL which were finally received at RRL in August 1995. These accessories have been coupled combining both the equipment.

Thus, delay in non-coupling of the units hampered proper analysis of scientific data and did not yield desired objectives for over two and half years.

CSIR stated, in October 1995, that the delay occurred due to Customs formalities, remote location of the laboratory and the considerable distance between Jorhat and Calcutta, the nearest port. The reply is not convincing as the reasons for not securing parts/accessories were purely due to administrative inefficiency on the part of RRL Jorhat to get the consignment cleared in time.

5.5 Unfruitful Expenditure

National Metallurgical Laboratory **(NML)**, Jamshedpur, placed an order on a firm in January 1991 for purchase of a "Continuous Wet Grinding Set-up" alongwith accessories, at a

cost of Rs 28.45 lakhs for research project titled "Benefication and purification of tungsten ores" sponsored by the Defence Research and Development Organisation **(DRDO)**. Advance payment of Rs 26.79 lakhs was made to the supplier as per the terms of the purchase order. The main equipment and its accessories were received by NML between September 1991 and December 1992. However, the equipment was not installed as of November 1995 while the project for which the equipment was procured had already been completed in December 1993. NML stated, in May 1995, that this equipment would be needed for their future projects. It further added that the equipment could not be installed as the amount for installation provided by DRDO, proved insufficient. CSIR stated, in November 1995, that allocation of additional funds for installation and commissioning of equipment has been made during 1995-96.

While on one hand, NML stated that equipment would be useful for them on other projects even after completion of the project for which it was purchased, on the other, it failed to install it for over four years on the plea that funds were not made available.

Since the installation of an equipment costing Rs 26.79 lakhs only should not cost much, NML could have managed this amount within its resources. The annual accounts of the Laboratory revealed closing balance of Rs 44.33 lakhs to Rs 71.99 lakhs during 1992-93 to 1994-95.

5.6 Injudicious purchase of equipment

Central Building Research Institute **(CBRI)** procured, in January 1991, a mobile drilling rig and a drilling machine at a cost of Rs 22.90 lakhs for use on research and development programmes.

Scrutiny by Audit in February 1995 revealed that the mobile drilling rig was used only for demonstration and trial purposes while the mobile drilling machine was used for about two months in one project. Thereafter equipment have not been used. Thus, procurement of these equipment was injudicious.

CSIR stated, in October 1995, that the equipment were considered necessary infrastructural facility for generating more funds from outside agencies and that CBRI was making efforts to get sponsored projects from various Government departments.

CBRI had not taken up any other projects necessitating use of these equipment even after a lapse of 57 months. Thus, the contention of CSIR for possible use of these equipment in future is not convincing. The purchase of the mobile drilling rig and mobile drilling machine costing Rs 22.90 lakhs without their definite requirement was, therefore, avoidable and injudicious.

5.7 Injudicious placement of purchase order

Central Electronics Engineering Research Institute **(CEERI)** placed supply order for an equipment 'LPCVD/PECVD for Tungsten Deposition System' on M/s Nanosil, U.S.A., a foreign firm through their Indian agent M/s VS Scientific Instruments Agencies, New Delhi in February 1990 at FOB cost of US $ 1.78 lakhs. The supply order was placed on this firm, though the quotation from its Indian agent was received after the due date, on the grounds of technical suitability and lower price. 90 **per cent** advance payment was to be made on proof of shipment.

The firm had offered a bank guarantee for the system installation and performance. However, CEERI did not include the condition of bank guarantee, which was offered by the foreign supplier, in the procurement order. US $ 1.76 lakhs was released in May 1991 on proof of shipment.

The equipment was received in May 1991. Some components were, however, not supplied by the manufacturer with the equipment. Efforts of CEERI to obtain them have failed as of November 1995 and the equipment has not been commissioned. The project, for which this equipment was procured, was completed in March 1994, without this equipment.

Thus, failure of CEERI to obtain bank guarantee before releasing payment resulted in equipment valued at Rs 36.92

lakhs lying idle for over four years.

CSIR have referred the matter in November 1995 to their Chief Vigilance Officer for investigation.

5.8 Extra expenditure for unconsumed power

Centre for Biochemical Technology **(CBT)**, formerly Centre for Biochemicals, entered into an agreement with the Delhi Electric Supply Undertaking **(DESU)** in April 1991 committing itself for a period of five years to obtain from DESU electrical energy at maximum demand of 1739 KVA high tension electricity for its laboratories and to install such apparatus as approved by DESU to maintain minimum power factor of 0.85. The agreement also stipulated that in the event of the actual power factor being less than 0.85, maximum demand would be adjusted for the purpose of billing by multiplying it by 0.85 and dividing by the power factor actually achieved. The agreement was for a period of five years.

Scrutiny of the power consumption during April 1991 to March 1995 (except September 1992 - March 1993, for which the figures of consumption were not available) revealed that the consumption ranged between 214 KVA and 1242 KVA, which was much less than the contracted demand. CSIR noted in August 1992, that the contracted maximum demand was much higher than the consumption of electricity at any point of time and advised the Centre to approach DESU for reduction in contracted demand from 1739 KVA to 900 KVA. The request of CBT for reduction in electrical load was not accepted by DESU as the agreement was valid for five years. Consequently, CBT had to make payments to DESU for contractual demand of 1739 KVA, resulting in avoidable extra payment of Rs 13.22 lakhs with reference to peak consumption of 1242 KVA, for unconsumed power during April 1991 - March 1995. The avoidable payment would work out to much more, when worked out to actual consumption during each month rather than on the basis of maximum consumption.

Though the agreement provided for installation of "capacitor power factor correction apparatus" of required rating by the consumer, this was not done. Non-installation of capacitor

resulted in continuous failure to maintain the power factor and consequential avoidable payment of Rs 34.25 lakhs during April 1992 to March 1995.

Thus, the Centre incurred total avoidable extra expenditure of more than Rs 47.47 lakhs in four years during 1991-95 as a result of unrealistic assessment of requirement of electricity and failure to maintain the desired power factor.

The Council stated, in January 1996, that CBT had applied for only 1130 KW, being the effective load worked out after applying the diversity factor on the connected load projected in the application. But DESU arbitrarily sanctioned 1477.56 KW (1739 KVA) on the basis of connected load without taking into account the diversity factor. The Council also stated that DESU had made ajustments arbitrarily in contract demand for different periods on account of low power factor without checking the power meters. However, the fact remains that CBT had entered into agreement with DESU without resolving the requirement of load, which resulted in extra expenditure of Rs 47.47 lakhs.

CHAPTER VI

6.1 Follow up on Audit Reports

Lok Sabha Secretariat issued instructions in April 1982 to all Ministries requesting them to furnish notes to the Ministry of Finance (Department of Expenditure) indicating remedial/corrective action taken by them on various paragraphs contained in the Audit Reports of the Comptroller and Auditor General of India as soon as they were laid on the table of the House, duly vetted by Audit.

A review of the position regarding receipt of 'Action Taken Notes' on the paragraphs included in the Audit Reports on Scientific Departments upto the period ending 31 March 1994 revealed that the Ministries/Departments had not submitted the remedial/corrective Action Taken Notes on the following eight paragraphs in spite of repeated instructions, as of December 1995:

Ministry/ Department	**No. of Para-graphs for which ATNs awaited**	**Audit Reports to which Para-graphs indicated in column 2 pertains**
Biotechnology	1	1993-94
Environment and Forests	3	1989-90 and 1993-94
Ministry of Mines (Geological Survey of India)	1	1993-94
Science and Technology	1	1993-94
Indian Council of Agricultural Research	1	1993-94
Space	1	1993-94

Details of individual paragraphs for which ATNs are awaited are indicated in Appendix III.

(T.K.SANYAL)
Principal Director of Audit
Scientific Departments

New Delhi
The 27 FEB 1996

Countersigned

(C.G.SOMIAH)
Comptroller and Auditor
General of India

New Delhi
The 29 FEB 1996

APPENDICES

Appendix I

Grants paid to Autonomous Bodies

(Reference - Paragraph No. 1.1.11)

S. No.	Ministry/Department Name of Body	Amount of grants received in 1994-95
		(Rs in crores)
Department of Atomic Energy		
1.	Tata Memorial Centre, Bombay	27.40
2.	Saha Institute of Nuclear Physics, Calcutta	8.30
3.	Institute of Physics, Bhubaneswar	4.61
4.	Atomic Energy Education Society's School, Bombay	2.75
5.	Tata Institute of Fundamental Research, Bombay	46.48
	Total	89.54
Department of Electronics		
6.	Centre for Development of Advance Computing, Pune	6.90
7.	Society for Applied Microwave Electronics Engineering Research, Bombay	3.96
8.	Electronic Research and Development Centres of India	4.20
9.	National Centre for Software Technology, Bombay	0.50

10.	Centres for Electronics Design and Technology of India	3.20
11.	Software Technology Parks of India	4.45
12.	Centre for Materials for Electronics Technology	0.45
	Total	23.66

Department of Environment, Forests and Wildlife

13.	Central Pollution Control Board, New Delhi	8.23
14.	Indian Institute of Forest Management, Bhopal	2.92
15.	Wild Life Institute of India, Dehradun	4.35
16.	Indian Council of Forestry Research & Education, Dehradun	47.67
17.	Central Zoo Authority of India, New Delhi	3.30
18.	Padmaja Naidu Himalayan Zoological Park, Darjeeling	0.06
19.	G.B. Pant Himalayan Paryavaran evam Vikas Sansthan	4.85
20.	Indian Plywood Research and Training Institute,Bangalore	1.10
21.	Animal Welfare Board	1.67
	Total	74.15

Department of Science and Technology

22.	Sree Chitra Tirunal Institute of Medical Sciences and Technology, Trivandrum	13.12
23.	National Institute of Immunology, New Delhi	8.93
24.	Raman Research Institute, Bangalore	5.66
25.	Bose Institute, Calcutta	5.18
26.	Indian Institute of Tropical Meteorology, Pune	3.46
27.	Indian Association for Cultivation of Science, Calcutta	5.05
28.	Indian Institute of Astrophysics, Bangalore	6.90
29.	Indian Institute of Geomagnetism, Bombay	3.48
30.	Indian National Science Academy, New Delhi	4.12
31.	Birbal Sahni Institute of Palaeobotany, Lucknow	2.80
32.	Wadia Institute of Himalayan Geology, Dehradun	3.05
33.	S.N.Bose National Centre for Basic Sciences, Calcutta	2.41
34.	Maharashtra Association for Cultivation of Science, Pune	2.34

35.	Indian Academy of Science, Bangalore	1.39
	Total	67.89

Department of Space

36.	National Remote Sensing Agency, Hyderabad	11.15
37.	Physical Research Laboratory, Ahmedabad	7.24
38.	National MST Radar Facility	0.39
	Total	18.78

Department of Agriculture Research and Education

39.	Indian Council of Agricultural Research, New Delhi	492.25
	Total	492.25

Ministry of Health & Family Welfare

40.	Indian Council of Medical Research, New Delhi	55.83
	Total	55.83

Department of Scientific and Industrial Research

41.	Council for Scientific and Industrial Research, New Delhi	357.35
	Total	357.35

Department of Telecommunications

42.	Centre for Development of Telematics **(C-DOT)**	28.00
	Total	28.00
	Grand Total	**1207.45**

Outstanding Utilisation Certificates

(Reference - Paragraph No. 1.2)

Ministry/Department	Period to which grant relates	Number of utilisation certificates outstanding at the end of March 1995	Amount **(Rs in lakhs)**
Atomic Energy	1985-86	1	1.50
	1987-88	4	1.29
	1988-89	3	3.78
	1989-90	7	6.71
	1990-91	9	3.99
	1991-92	12	16.71
	1992-93	15	19.80
	1993-94	12	27.00
	Total	63	80.78
Environment and Forests	1980-81	25	33.90
	1981-82	85	48.31
	1982-83	92	165.75
	1983-84	256	271.53
	1984-85	257	428.18
	1985-86	286	799.07
	1986-87	274	1970.82
	1987-88	611	11683.53
	1988-89	594	3775.40
	1989-90	779	492.19
	1990-91	177	303.44
	1991-92	112	1748.64
	1992-93	297	3471.44
	1993-94	140	192.96
	Total	3985	25385.16

Ocean Development	1983-84	26	250.97
	1984-85	30	25.61
	1985-86	66	53.40
	1986-87	51	85.51
	1987-88	41	398.76
	1988-89	93	196.01
	1989-90	171	830.27
	1990-91	57	514.98
	1991-92	120	1588.92
	1992-93	18	55.76
	1993-94	94	1448.67
	Total	767	5448.86
Space	1976-77	1	0.05
	1977-78	1	0.15
	1978-79	2	0.08
	1979-80	2	0.21
	1980-81	5	0.72
	1981-82	7	4.63
	1982-83	21	7.34
	1983-84	14	3.83
	1984-85	31	8.15
	1985-86	15	3.29
	1986-87	17	5.73
	1987-88	16	7.79
	1988-89	11	10.73
	1989-90	5	3.33
	1990-91	7	7.84
	1991-92	11	13.05
	1992-93	16	23.19
	1993-94	34	43.33
	Total	216	143.44
Science and Technology	1977-78	80	71
	1978-79	85	90
	1979-80	60	100
	1980-81	100	125
	1981-82	175	114
	1982-83	225	250
	1983-84	400	312
	1984-85	350	405

	1985-86	600	702
	1986-87	725	801
	1987-88	645	708
	1988-89	1500	1106
	1989-90	1462	1205
	1990-91	1697	1055
	1991-92	1500	1140
	1992-93	1571	1469
	1993-94	1800	1900
	Total	12975	11553
Geological survey	1991-92	8	0.50
of India	1992-93	3	0.20
Department of Mines	1993-94	4	0.30
	Total	15	1.00
Electronics	1982-83	23	36.32
	1983-84	63	161.69
	1984-85	92	868.28
	1985-86	71	360.85
	1986-87	70	523.74
	1987-88	66	728.06
	1988-89	98	1815.43
	1989-90	248	4422.99
	1990-91	210	3767.67
	1991-92	270	4884.63
	1992-93	291	4318.73
	1993-94	275	3837.83
		1777	25726.22
Grand Total		**19798**	**68338.46**

Appendix III

Outstanding Action Taken Notes

(Reference - Paragraph No. 6.1)

Sl. No.	Report No. and year	Chapter of the Report	Para No.	Pertains to	Brief subject
1.	2 of 1991	II	7	Deptt. of Environments Forest and Wildlife	Unutilised grant-in-aid
2.	6 of 1995	III	3.1	Deptt. of Biotechnology	Audit review of the Department
3.	6 of 1995	V	5.2	Ministry of Environment and Forest	Forest Survey of India
4.	6 of 1995	V	5.3	- do -	Budget Management
5.	6 of 1995	VI	6.1	Geological Survey of India	Avoidable payment of Customs duty
6.	6 of 1995	VII	7.1	Deptt. of Science and Technology	Audit review on Bose Institute
7.	6 of 1995	VIII	8.1	Deptt. of Space	Budget Management
8.	6 of 1995	IX	9.1	Indian Council of Agricultural Research	National Bureau of Plant Genetic Resources

Appendix - IV

Statement showing shortfall in achievement of targets during 1990-95

(Reference - Paragraph No. 3.1.6)

S.No	Name of State/ Union Territory/ implementing agency	Target	Achievement	Shortfall	Percentage of shortfall
1.	Assam	240000	193128	46872	19
2.	Bihar	538000	428640	109360	20
3.	Haryana	294000	286049	7951	2
4.	Jammu & Kashmir	196000	130320	65680	33
5.	Kerala	305000	295525	9475	3
6.	Nagaland	15200	2565	12635	83
7.	Sikkim	22600	21810	790	3
8.	Daman &Diu	2050	675	1375	67
9.	Lakshadweep	3250	988	2262	69
10.	NDDB	65000	51832	13168	20
11.	Meghalaya	15000	2000	13000	86
12.	Tripura	10200	7132	3068	30
13.	Pondicherry	11300	8510	2790	24
14.	Andaman & Nicobar	19000	16173	2827	14
15.	Punjab	395000	372434	22566	5
	Total	2131600	1817781	313819	

Appendix V

Irregular/excess claims of subsidy
(Reference - Paragraph No.3.1.7)

S.No.	Name of State	Name of agency	Amount of Excess subsidy (Rs in lakhs)	Remarks
1.	Tamil Nadu	RDD	11.92	RDD, Tamil Nadu installed 10000 pairs of family size portable chulhas in "Nutritious Meal Programme Centres" and claimed subsidy at higher category as applicable to SC/ST categories.
2.	Rajasthan	RDPRD	3.50	In Rajasthan subsidy and supervision charges for the years 1991-94 were claimed at approved rates for chulha instead of actual expenditure incurred.
3.	Andhra Pradesh	NEDCAP	10.30	NEDCAP had fixed the unit cost of fixed chulhas at higher rate than the actual purchase price resulting excess expenditure.
4.	Andhra Pradesh	KVIC	5.33	The unit cost of "Sukhad fixed model chulha" was enhanced to Rs 105/- from Rs 72/- per chulha during 1993-94. 38033 chulhas were sold at enhanced rate resulting in excess expenditure of Rs. 5.33 lakhs.
5.	Himachal Pradesh	RDD	3.40	In 7322 cases subsidy on full unit cost was claimed without limiting to the prescribed limit of Rs 50/- or Rs 75/-.
6.	Maharashtra	RDWCD	10.12	In seven districts RDWCD had paid during 1991-95 an amount of Rs 44.75 lakhs for purchase of 70,000 chulhas against an admissible subsidy of Rs 34.63 lakhs resulting in excess claim of Rs 10.12 lakhs.

7.	Maharashtra	RDWCD	4.34	Against actual installation of 15258 (Rs 8.24 lakhs) number of chulhas, the implementing agency reported 22772 chulhas (Rs 12.58 lakhs) to the Ministry resulting in excess subsidy of Rs 4.34 lakhs.
8.	Kerala	ANERT	3.13	Excess subsidy for 8335 chulhas at Rs 37.50 was claimed in 1991-92 as admissible for SC,ST categories, whereas these were installed in general category house hold.
9.	Kerala	ANERT	2.16	ANERT Kerala claimed market promotion incentive for 43200 portable chulhas even though no portable chulha was sold through Co-operative stores/fair price shops.
10.	Gujarat	NTGCFL	4.45	NTGCFL had claimed central subsidy at the rate of Rs 50/- eventhough fifty per cent of approved cost of chulha was less than Rs 50/- which resulted in excess claim for 22829 chulhas installed in 1993-95. NTGCFL stated that the claim was based on maximum prescribed limit.
11.	Gujarat	NTGCFL GAIC	2.56	NTGCFL and GAIC had distributed 7894 portable chulhas and claimed subsidy at higher rate admissible to SC/.ST categories without proof of identification of caste
		Total	61.21	

Appendix - VI

Over-statement of progress/expenditure

(Reference - Paragraph No. 3.1.7)

S.No.	Name of State	Name of agency	Amount mis reported (Rs in lakhs)	Remarks
1.	Tamil Nadu	RDD	12.39	RDD, Tamil Nadu had reported Rs 15.26 lakhs to MNES as expenditure on core-organisational support during 1990-93 against an actual expenditure of Rs 2.87 lakhs.
2.	Tamil Nadu	DRDA	0.71	Against actual number of 13213 chulhas installed in Salem and Madurai Districts in 1989-92, utilisation certificate was furnished for 13906 chulhas resulting in excess reporting of 693 chulhas involving expenditure of Rs 0.71 lakh.
3.	Tamil Nadu	RDD/DRDA	5.82	RDD, Tamil Nadu claimed subsidy for installlation of 8538 chulhas in 1992-93 and 1993-94 though the funds were not released to blocks due to shortcomings in the claims of subsidy.
4.	Karnataka	RDPRD	72.54	RDPRD, Karanataka furnished expenditure statement to MNES for 242805 fixed chulhas against the actual installation of 128357 chulhas resulting in re-inbursement of excess subsidy of Rs 72.54 lakhs. RDPRD stated in March 1995 that chulhas built under HUDCO scheme where provision for chulhas already existed in the estimates were also included in the progress reports sent to MNES.
5.	West Bengal	Director of Social Welfare (DSW)	66.68	DSW, West Bengal reported in March 1995 to MNES that the Central Assistance of Rs 86.31 lakhs was fully utilised in the year 1993-94. However, an expenditure statement for Rs 19.63 only lakhs was made available to audit.

6.	Uttar Pradesh	RDD	66.48	RDD, UP had claimed subsidy for 1203855 chulhas against the actual installation of 1147182 chulhas during 1990-95 resulting in excess subsidy for 56673 chulhas.
7.	Punjab	RDPD	8.57	RDPD, Punjab spent Rs 8.57 lakhs during 1990-95 for purchase of pipes and claimed the amount against awareness and publicity eventhough no such programme was arranged.
8.	Punjab	PEDA	4.03	PEDA spent Rs 4.03 lakhs for purchase of portable chulhas during 1991-95 and claimed subsidy against awareness and publicity eventhough no such programme was arranged in the State.
9.	Gujarat	GEDA	2.65	Against utilisation certificate for Rs 22.75 lakhs for the year 1990-91 an expenditure of Rs 20.10 lakhs was incurred. GEDA stated that the mistake would be rectified in the account for the year 1994-95.
		Total	239.87	

Note: 1. In Rajasthan, as against actual installation of 7664 chulhas, the nodal/implementing agencies reported installation of 41217 chulhas resulting in excess reporting of 33553 chulhas.

2. PEDA, Punjab had reported installation of 23484 chulhas against the actual installation of 13793 portable chulhas during 1991-94 inflating the achievement by 9691 chulhas.

Appendix.- VII

Statement showing the particulars of non-realisation of beneficiary's contribution.

(Reference - Paragraph No. 3.1.7)

S.No.	Name of State	Name of agency	Amount (Rs in lakhs)	Remarks
1.	Assam	P&RD	28.13	P&RD, Assam had not recovered beneficiary's contributions from 67819 beneficearies during 1992-95.
2.	Maharashtra	RDWCD	2.78	RDWCD, Maharashtra had not recovered beneficiary's contribution from 47577 beneficiaries during 1990-95.
3.	Maharashtra	MEDA	1.51	MEDA, Maharshtra failed to recover beneficiary's contribution in respect of 30106 fixed chulhas installed during 1990-95.
4.	Karnataka	RDPRD	38.52	Beneficiary's contribution for the period 1990-95 was not recovered.
5.	West Bengal	DSW	30.65	Beneficiary's contribution for 1990-95 was not recovered in West Bengal.
6.	Tamil Nadu	RDD	0.33	Beneficiary's contribution for 426 number of chulhas was not recovered in ten blocks.
7.	Himachal Pradesh	RDD	0.29	Beneficiary's contribution was not recovered in 6 blocks of Himachal Pradesh.
8.	Uttar Pradesh	RDD	61.47	Beneficieary's contribution for installation of 107925 chulhas installed during 1990-95 was not recovered.
9.	Punjab	RDPD	1.58	Beneficiary's contribution of the cost of AC pipes was not recovered during 1993-94.

10.	Madhya Pradesh	Urja Nigam	14.83	Beneficiary's contribution of the chulhas sold through departments like Tribal Welfare, Social Welfare and other departments during 1986-94 was not recovered.
11.	Orissa	OREDA	16.25	OREDA, Orissa had not recovered Rs 16.25 lakhs towards sale proceeds of 18129 chulhas distributed for installation under India Awas Yojna.
12.	Orissa	Orissa Forest Development Corporation (OFC)	1.70	Sale proceeds of 4401 portable chulhas issued to 17 organisations of OFC during 1986-87 was not recovered.
		Total	198.04	

Appendix - VIII

Statement showing the low functionality of chulhas installed during the years 1990-95

(Reference - Paragraph No. 3.1.7)

S.No	Name of State	Agency	Period/ years	No. of chulhas installed	No. of chulhas Non-functional	Percentage of non-functional chulhas	Reasons for non functionality
1.	Maharashtra	RDWCD	1990-93	129988	58627	45.10	Reasons not furnished
2	Maharashtra	MEDA	1990-93	40000	16000	40	The feed back and follow up system did not function effectively, shortage of skilled SEWs and lack of users training programme.
3.	Rajasthan	RDPRD	Random Check	41217	38379	93	Records relating to chulhas in working condition/ not in use and dismantled was not maintained at any stage. Test-check of 14 Panchayat Samities indicated that only 2838 use out of 41217 chulhas (6.89 percent) were in use out of 41217 chulhas installed.
4	Punjab	RDPD	1990-95	262488	79748	30	Beneficiaries preferred liquid petroleum gas (LPG) connection to smokeless chulhas. The dismantlement of 63431 chulhas was attributed to heavy rains and floods in the state.
5.	Gujarat	GEDA	1989-90	63034	16969	27	Survey conducted in 1990-91 by Lok Bharati, a private agency engaged by GEDA, Gujarat indicated 16969 chulhas not working out of 63034 chulhas installed during the years 1989-90.