

# APPENDICES

## Appendix I (Refer Para 1.2)

### List of network projects taken up by CSIR during Tenth Five year Plan

Projects selected for examination in the Performance Audit

Sl. No.	Title of the Project	Nodal Lab	Other participating Labs	Approved/estimated cost (₹ in crore)
1.	Spearheading small civilian aircraft design, development & manufacture	NAL	CMERI	297.70
2.	Exploration and exploitation of microbial wealth of India for novel compounds and biotransformation processes	IMTECH	IHBT, IICT, NBRI, NEERI, IGIB, NIO, IIIM, NEIST, NIIST, IMMT and NCL	20.47
3.	Molecular biology of selected pathogens for developing drugs targets	CDRI	IICB, IMMT, CCMB, IGIB, CIMAP and IIIM	24.88
4.	Study of mesozoic sediments for hydrocarbon exploration	NGRI	NIO	14.90
5.	Pollution monitoring mitigation systems and devices	NEERI	NGRI, NBRI, IGIB, NEIST, CRRI, CIMFR, AMPRI, CGCRI, NPL, IITR and CECRI	14.58
6.	Asthmatic and allergic disorders mitigation mission	IICB	IGIB, IICT, CCMB, IITR and IIIM	24.49
7.	Newer scientific herbal preparations for global positioning	IIIM	NBRI, CDRI, CIMAP, IITR, IICB, IICT, CFTRI, IHBT and IMMT	24.90
8.	Special electron tube technologies for large scale applications	CEERI	CMERI and CGCRI	8.65
9.	Comprehensive traditional knowledge digital documentation and library	NISCAIR	NBRI, IITR, CIMAP, URDIP, IMMT, IIIM, CBRI, CFTRI and IHBT	18.00
10.	Environment friendly leather processing technology	CLRI	NEERI, NML, NBRI, CSMCRI and CGCRI	18.20
11.	Development of specialised aerospace materials	NAL	CECRI, CGCRI, NML and NPL	16.87
12.	Developing cells & tissue engineering	CCMB	CIMAP, IHBT, IICB, NBRI, NCL and IIIM	24.50
13.	Toxicogenomics of polymorphism in Indian population to industrial chemicals for development of biomarkers	IITR	IICB, IGIB, CCMB and NEERI	23.49
14.	Designing animals and plants as bio-reactors for production of proteins & other products	CIMAP	IHBT, NBRI, IICB, NEIST, IICT and CFTRI	19.87
15.	Development of catalysis & catalysts	NCL	IICT, IIP, CIMFR, NEIST, IIIM, IICB, NIIST, CSMCRI and IMMT	23.00
16.	Developing green technology for organic chemicals	IICT	CIMAP, IHBT, IIIM, NEIST, NIIST, NCL, NEERI, CIMFR, CSMCRI, IIP, IMMT, IICT and CECRI	23.78
17.	Acquisition of oceanographic research vessel	NIO	Nil	226.51
18.	Impact of anthropogenic perturbations oceanographic atmospheric processes in	NIO	NGRI and NPL	14.01

Sl. No.	Title of the Project	Nodal Lab	Other participating Labs	Approved/estimated cost (₹ in crore)
	and around India in the context of global change			
19.	Development of key technologies for photonics and opto-electronics	CGCRI	CEERI, CSIO, IICT, NPL and NIIST	33.03
20.	Developing capabilities & facilities for microelectromechanical systems (MEMS) and sensors	CEERI	NCL, NPL, IICT, CECRI, CMERI, CCMB, AMPRI, CGCRI	31.71
21.	Coal resource quality assessment for specific end uses	CIMFR	NEIST, NML and NCL	13.32
22.	Developing new generation fuels & lubricants	IIP	NCL, CFRI, IIIM and NIIST	24.06
23.	Positioning Indian nutraceuticals and nutrigenomics on global platform	CFTRI	IICT, IHBT, CIMAP, NBRI, IIIM and CCMB	22.40
24.	Setting up a world class drug research institute (for preparing FR)	CDRI	Nil	176.14
25.	Predictive medicine using repeat and single nucleotide polymorphisms	IGIB	CCMB, IICB, CDRI, IITR, IGIB and IMTECH	24.47
26.	Drug target development using in-silico biology	IGIB	IICB, CDRI, IMTECH and IIIM	49.60
27.	Animal models and animal substitute technologies	CDRI	CCMB, CIMAP, IGIB, IICT, IITR and IMTECH	33.43
28.	Developing new building construction materials	CBRI	CECRI, CFRI, CGCRI, CRRRI, IICT, NML, AMPRI, IMMT, NEIST, NIIST and SERC	23.00
29.	Mathematical modeling and computer simulation	C-MMACS	CBRI, CRRRI, NEERI, NIO and IMMT	15.66
30.	Technologies standardisation of bioresources for and from leather	CLRI	CFTRI, IMTECH and CCMB	3.75
31.	Custom tailored special materials	CGCRI	CMERI, NML, NIO, AMPRI, IMMT and NIIST	24.03
32.	Capacity building for coastal placer mineral mining	CIMFR	CMERI, NIO, IMMT, AMPRI, NIIST and NML	15.41
33.	Upgradation of SI base units, national standards of measurements and apex calibration facilities	NPL	CFTRI, CIMFR, CMERI, CSIO, IIP, IITR, NAL, NEERI, NIO, NML, NEIST and SERC	21.21
34.	Developing and sustaining high science & technology for national aerospace programmes	NAL	CMERI, CSIO, NPL and AMPRI	80.70
35.	Development of medicinal plant chemotypes for enhanced marker and value added compounds	CIMAP	IHBT, IICB, IMMT, IIIM and NBRI	21.66
36.	Globally competitive chemicals processes and products	IICT	CFRI, CIMAP, CSMCRI, IHBT, IIP, NCL, NEERI, IMMT, IIIM and NIIST	16.63
37.	Development of novel polymeric materials	NCL	CSMCRI, NIIST, IICT, IIIM, CLRI, IIP, NEIST, CECRI and NPL	20.00

Sl. No.	Title of the Project	Nodal Lab	Other participating Labs	Approved/estimated cost (₹ in crore)
38.	Development of techniques and methodologies for exploration, assessment and management of ground water in hard rock areas	NGRI	IITR, AMPRI and NEERI	24.44
39.	Tectonic and oceanic processes along the Indian ridge system and backarc basins	NIO	NGRI	23.68
40.	Electronics for societal purposes	CSIO	CBRI, CFTRI, CEERI, CMERI, CRRI, NGRI and NPL	21.14
41.	Industrial waste minimisation and clean up	NEERI	CECRI, CGCRI, CLRI, CMERI, CSIO, IGIB, IICT, IIP, IITR, NBRI, NCL, NGRI, NML, AMPRI, IMMT, NEIST and NIIST	15.93
42.	Quality enhancement of coal for its efficient utilisation	CIMFR	NML, IMMT and AMPRI	14.00
43.	Natural, nature identical and nature similar biomolecules	CFTRI	IGIB, CIMAP, IHBT, IICB, NBRI, IIIM, IMMT and NIIST	22.10
44.	Infectious diseases handling, storage and research facilities	CCMB	CDRI, IMTECH, IIIM, IGIB and IICB	13.26
45.	Design analysis and health assessment of special structures including bridges	SERC	CBRI, CMERI, CRRI, NML, CECRI and AMPRI	16.70
46.	New and improved road technologies	CRRI	CBRI, CMERI, IIP and SERC	23.92
47.	Establishing National Science Digital Library (NSDL)	NISCAIR	Nil	44.54
48.	CSIR E-journals consortium	NISCAIR	All laboratories	26.90
49.	Establishment of genetically modified food referal facility	CFTRI	CCMB and IITR	17.15
50.	Establishing advanced facility for safety evaluation of genetically modified/engineered drugs	CCMB	IGIB, CDRI, IMTECH and IITR	22.97
51.	Biomineral processing for extraction of metal values from ores and concentrates	IMMT	IICB and NML	16.00
52.	Developing capabilities in advanced manufacturing Technology	CMERI	CGCRI, NML, CSIO, NAL, AMPRI, NIIST and SERC	17.85
53.	Technology for engineering critical assessment	NML	CBRI, CGCRI, CMERI, CRRI, NAL, AMPRI and SERC	14.98
54.	Discovery, development and commercialisation of new bioactives and traditional preparation	CSIR Hqs.	CBRI, CCMB, CDRI, CIMAP, CFTRI, CLRI, IHBT, IGIB, CSMCRI, IICB, IICT, IMTECH, IITR, NBRI, NCL, NIO, AMPRI, IMMT, IIIM, NEIST and NIIST	39.60
<b>Total</b>				<b>1860.01</b>

**Appendix II (Refer Para 2)****Details of 27 projects selected for audit***(₹ in crore)*

Sl. No.	Name of project	Nodal Lab	Other participating Labs	Number of activities			Activities completed <sup>#</sup>			Sanctioned cost	Actual expr.
				Total	Net-work Mode	Non-Net-work Mode	Fully	Partially	Not achieved		
1.	Developing new building construction materials	CBRI	CGCRI, CFRI, CECRI, CRRI, IICT, NML, AMPRI, IMMT, IIIM, NIIST and SERC	36	30	6	36	Nil	Nil	23.00	19.34
2.	Developing cells & tissue engineering	CCMB	IIIM, NCL, IHBT, IICB, CIMAP and NBRI	13	13	Nil	12	Nil	1	24.50	22.59
3.	Animal models and animal substitute technologies	CDRI	IICT, IITR, IGIB, CCMB, CIMAP and IMTECH	7	7	Nil	6	1	Nil	33.43	30.56
4.	Developing capabilities for micro electromechanical systems and sensors	CEERI	CMERI, CCMB, NPL, AMPRI, CGCRI, IICT, CECRI and NCL	6	6	Nil	4	2	Nil	31.71	31.89
5.	Positioning Indian nutraceuticals and nutrigenomics on global platform	CFTRI	IIIM, CIMAP, NBRI, IHBT, IICT and CCMB	6	6	Nil	5	Nil	1	22.40	14.09
6.	Development of key technologies for photonics and opto-electronics	CGCRI	CEERI, NPL, CSIO, IICT and NIIST	4	4	NIL	4	NIL	NIL	33.03	31.93
7.	Development of medicinal plant chemotypes for enhanced marker and value added compounds	CIMAP	IIIM, IHBT, NBRI, IICB and IMMT	8	8	Nil	Nil	8	Nil	21.66	21.66
8.	Quality enhancement of coal for its efficient utilisation	CIMFR	AMPRI, NML and IMMT	3	3	Nil	3	Nil	Nil	14.00	7.31
9.	Capacity building for coastal placer mineral mining	CIMFR	CMERI, NIO, NML, AMPRI, IMMT and NIIST	5	5	Nil	5	Nil	Nil	15.41	5.29
10.	Environment friendly leather processing technology	CLRI	CGCRI, CSMCRI, NBRI, NEERI and NML	15	15	Nil	15	Nil	Nil	18.20	17.44
11.	Developing capabilities in advanced manufacturing technology	CMERI	NAL, NML, SERC, CGCRI, CSIO, AMPRI and NIIST	10	10	Nil	8	Nil	2	17.85	16.13
12.	New and improved road technologies	CRRI	CBRI, CMERI, IIP and SERC	4	4	Nil	4	Nil	Nil	23.92	24.30
13.	Electronics for societal purposes	CSIO	CRRI, CBRI, CFTRI, CEERI, CMERI, NGRI and NPL	10	10	Nil	8	1	1	21.14	18.87
14.	Discovery, development and commercialisation of new bioactives and traditional preparation	CSIR-Hq	AMPRI, CDRI, CBRI, IICT, IICB, IMTECH, IHBT, NIIST, NEIST, NIO, IIIM, CIMAP, NBRI, NCL, IITR, CFTRI, IGIB, CLRI, CCMB, IMMT and CSMCRI	10	10	Nil	Not indicated			39.60	32.77

(*₹ in crore*)

Excess (-)/ Un-spent Balance (+)	Date of start	Date of finish	Delay* (months)	Outputs from project							
				Technologies developed		Patents filed and granted		Publications and impact factor		ECF earned	
				Target	Actual	Target	Actual	Target	Actual	Target	Actual
(+)3.66	01-08-2003	31-03-2007	Nil	10	33 developed, 19 transferred and 19 commercialised	20	19 filed and none granted	150	134 with impact factor ranging from 0.114 to 2.216	9.5	9.5
(+)1.91	29-07-2003	31-03-2007	Nil	3	2 developed, none transferred and commercialised	Not set	5 filed and none granted	Not set	34 with impact factor 3.46 (average)	Not set	Nil
(+)2.87	29-10-2003	31-03-2007	Nil	Nil	41 developed, none transferred and commercialised	Not set	5 filed and 5 granted	Not set	106 with impact factor ranging from 0.36 to 6.40	Not set	Nil
(-)0.18	06-01-2004	31-03-2007	Nil	Nil	16 developed, none transferred and 2** commercialised	50	16 filed and 2 granted	Not set	76 with impact factor ranging from 0.218 to 5.361	15.0	10.5
(+) 8.31	01-08-2003	31-03-2007	Nil	Nil	7 developed, 2 transferred and 2 commercialised	60	7 filed and 3 granted	35	28 with impact factor zero	2	Nil
(+) 1.10	01-08-2003	31-03-2007	Nil	Nil	26 developed, 1 transferred and 1 commercialised	Not set	Nil	Not set	55 with impact factor ranging from 0.160 to 9.60	Not set	2
Nil	29-07-2003	31-03-2007	Nil	20	7 developed, 1 transferred and 1 commercialised	25	10 filed and 9 granted	25	35 with impact factor ranging from 0.6 to 2.78	2.5	0.21
(+) 6.69	06-05-2004	30-09-2007	6	Nil	Nil	Not set	1 filed and none granted***	Not set	9 with impact factor ranging from 2.215 to 3.436	Not set	8.3
(+) 10.12	01-04-2003	31-03-2008	12	Nil	9 developed, 1 transferred and 1 commercialised	20	2 filed and none granted	40	47 with impact factor ranging from 0.29 to 3.22	Not set	1.66
(+) 0.76	19-01-2004	31-03-2007	Nil	Nil	13 developed, 4 transferred and 2 commercialised	Not set	7 filed and none granted	Not set	70 with impact factor ranging from 0 to 4.054	40	2.275
(+) 1.72	16-01-2004	31-03-2007	Nil	Nil	6 developed, 1 transferred and 1 commercialised	12	2 filed and none granted	25	44 with impact factor ranging from 0.22 to 2.86	16	4.01
(-) 0.38	01-08-2003	January 2010	34	36	21 developed, 1 transferred and 1 commercialised	7	1 filed and none granted	Not set	31 with impact factor ranging from 0.449 to 2.411	9	8.1
(+) 2.27	01-08-2003	31-03-2007	Nil	30****	11 developed, 1 transferred and none commercialised	Not set	7 filed and 4 granted	Not set	11 with impact factor ranging from 0 to 0.387	Not set	Nil
(+) 6.83	01-04-2004	31-03-2007	Nil	Nil	2 developed, 1 transferred and none commercialised	50	29 filed and 28 granted	Not set	33 with impact factor ranging from 0.702 to 9.771	Not set	Nil

Sl. No.	Name of project	Nodal Lab	Other participating Labs	Number of activities			Activities completed <sup>#</sup>			Sanctioned cost	Actual expr.
				Total	Net-work Mode	Non-Net-work Mode	Fully	Partially	Not achieved		
15.	Asthma and allergic disorders mitigation mission	IICB	IICT, IGIB, IIIM, IITR and CCMB	6	6	Nil	5	Nil	1	24.49	23.77
16.	Newer scientific herbal preparations for global positioning	IIIM	NBRI, CDRI, CIMAP, IITR, IICB, IICT, IHBT, IMMT and CFTRI	10	10	Nil	10	Nil	Nil	24.90	21.98
17.	Developing new generation fuels & lubricants	IIP	CIMFR, NCL, IIIM and NIIST	5	5	Nil	Nil	5	Nil	24.06	22.52
18.	Drug target development using in silico biology	IGIB	IICB, IIIM, IMTECH and CDRI	15	15	Nil	15	Nil	Nil	49.60	48.62
19.	Exploration of microbial wealth of India for novel compounds and bio-transformation process	IMTECH	IIIM, IHBT, IGIB, NBRI, NEIST, IMMT, NEERI, NIO, NCL, IICT and NIIST	2	2	Nil	2	Nil	Nil	20.47	20.53
20.	Bio-mineral processing for extraction of metal values from ores/concentrates/wastes	IMMT	IICB and NML	6	6	Nil	5	1	Nil	16.00	14.73
21.	Developing and sustaining high science & technology for national aerospace programmes	NAL	CMERI, AMPRI, CSIO and NPL	48	5	43	42	Nil	6	80.70	77.79
22.	Development of catalysis and catalysts	NCL	IIP, IICT, CSMCRI, CFRI, IICB, IMMT, IIIM, NEIST and NIIST	6	6	Nil	2	4	Nil	23.00	23.00
23.	Industrial waste minimisation and clean up	NEERI	CECRI, CGCRI, CLRI, CSIO, CMERI, IGIB, IICT, IIP, IITR, NBRI, NCL, NGRI, NML, AMPRI, IMMT, NEIST and NIIST	37	37	Nil	37	Nil	Nil	15.93	13.93
24.	Impact of anthropogenic perturbations <sup>##</sup> on oceanographic-atmospheric processes in and around India in the context of global change	NIO	NGRI and NPL	3	3	Nil	Nil	3	Nil	14.01	14.00
25.	Technology for engineering critical assessment	NML	CBRI, CGCRI, CMERI, CRRI, NAL, AMPRI and SERC	6	6	Nil	Not indicated			14.98	15.21
26.	Upgradation of SI base units, national standards of measurements and apex calibration facilities	NPL	CFTRI, CFRI, CMERI, CSIO, IIP, IITR, NAL, NEERI, NIO, NML, NEIST and SERC	23	23	Nil	15	4	4	21.21	15.21
27.	Design analysis and health assessment of special structures including bridges	SERC	CMERI, CRRI, NML, CECRI, AMPRI and CBRI	6	6	Nil	Not indicated			16.70	16.34

## Disturbances caused due to human activities

Excess (-)/ Un-spent Balance (+)	Date of start	Date of finish	Delay* (months)	Outputs from project							
				Technologies developed		Patents filed and granted		Publications and impact factor		ECF earned	
				Target	Actual	Target	Actual	Target	Actual	Target	Actual
(+) 0.72	30-07-2003	31-03-2007	Nil	Not set	23 developed and none transferred and commercialised	Not set	7 filed and 3 granted	Not set	38 with impact factor ranging from 0.250 to 7.205	Not set	Nil
(+) 2.92	01-08-2003	30-09-2010	42	Not set	5 developed, none transferred and commercialised	7	5 filed and 1 granted	Not set	24 with impact factor ranging from 0.385 to 4.044	Not set	Nil
(+) 1.53	August 2003	31-03-2007	Nil	Not set	21 developed, 1 transferred and 1 commercialised	Not set	38 filed and 9 granted	Not set	22 with zero impact factor	Not set	0.08
(+) 0.98	16-01-2004	31-03-2011	48	250	62 developed, 4**** transferred and 4 commercialised	50	18 filed and 5 granted	100	129 with impact factor ranging from 0.668 to 10.256	Not set	6.3
(-) 0.06	19-01-2004	31-03-2010	36	Not set	Nil	20	14 filed***** and none granted	12	69 with impact factor zero	2.5	Nil
(+) 1.27	18-03-2004	31-03-2007	Nil	Not set	1 developed, 1 transferred and none commercialised	Not set	Nil	Not set	32 with impact factor ranging from 0.350 to 4.360	Not set	1.38
(+) 2.91	03-02-2005	31-03-2010	36	Not set	9 developed, 3 transferred and 3 commercialised	Not set	11***** filed and 6 granted	Not set	145 papers published with impact factor ranging from 0.3042 to 3.745	Not set	Nil
Nil	01-08-2003	September 2007	6	Not set	5 developed, 1 transferred and 1 commercialised	Not set	22 filed and 4 granted	Not set	136 with impact factor ranging from 0.313 to 5.415	Not set	0.14
(+) 2.00	08-04-2004	30-09-2007	6	10	41 developed, 3 transferred and 3 commercialised	111	24 filed and 18 granted	295	115 with impact factor 0.199 to 20.01	Not set	1.89
(+) 0.01	17-02-2004	31-03-2008	12	Not set	Nil	Not set	Nil	Not set	54 with impact factor ranging from 0 to 30.028	Not set	Nil
(+) 0.23	29-03-2004	31-03-2007	Nil	Not set	8 developed, 6 transferred and none commercialised	Not set	3 filed and none granted	Not set	101 with zero impact factor	Not set	6.5
(+) 6.00	29-03-2004	31-03-2008	12	Not set	6 developed, 4 transferred and none commercialised	Not set	9 filed and 6 granted	Not set	73 papers published with impact factor ranging from 0.09 to 7.18	20.80	16.76
(+) 0.36	01-03-2004	31-03-2007	Nil	Not set	24 developed and none transferred and commercialised	5	2 filed and none granted	50	357 with zero impact factor	Not set	0.08

\*Taking into consideration scheduled date of completion as 31-03-2007.

\*\* Though no technology was stated to be transferred, the statement of transfer of two technologies is contradictory.

\*\*\* Although no technology was developed from the project, one patent was stated to have been filed, which is contradictory.

\*\*\*\* Although no target was indicated in the project proposal, CSIO stated in reply (December 2012) that 30 technologies were to be developed from the project.

\*\*\*\*\* Audit observed that four software were actually developed from a project under another scheme of CSIR and not from network project.

\*\*\*\*\* Since no technology was developed from the project the statement of filing of 14 patents is contradictory.

\*\*\*\*\* This includes 4 copy rights and 7 patents.



**Appendix III (Refer Para 2.2)****Delay in sanctioning of network projects**

Sl. No.	Title of the Project	Nodal Laboratory	Date of commencement of Tenth Five Year Plan	Date of sanction of network project by CSIR	Delay (in months)
1	Developing new building construction materials	CBRI	April 2002	August 2003	16
2	Developing cells & tissue engineering	CCMB	April 2002	July 2003	15
3	Animal models and animal substitute technologies	CDRI	April 2002	October 2003	18
4	Developing capabilities & facilities for micro-electromechanical systems (MEMS) and sensors	CEERI	April 2002	January 2004	21
5	Quality enhancement of coal for its efficient utilisation	CIMFR	April 2002	May 2004	25
6	Positioning Indian nutraceuticals and nutrigenomics on global platform	CFTRI	April 2002	August 2003	16
7	Development of key technologies for photonics and opto-electronics	CGCRI	April 2002	August 2003	16
8	Development of medicinal plant chemotypes for enhanced marker and value added compounds	CIMAP	April 2002	July 2003	15
9	Environment friendly leather processing technology	CLRI	April 2002	January 2004	22
10	Capacity building for coastal placer mineral mining	CIMFR	April 2002	April 2003	12
11	Developing capabilities in advanced manufacturing technology	CMERI	April 2002	January 2004	21
12	Electronics for societal purposes	CSIO	April 2002	August 2003	16
13	Discovery, development and commercialisation of new bioactives and traditional preparation	CSIR Hqs.	April 2002	April 2004	24
14	New and improved road technologies	CRRRI	April 2002	August 2003	16
15	Drug target development using in-silico biology	IGIB	April 2002	January 2004	21
16	Asthmatic and allergic disorders mitigation mission	IICB	April 2002	July 2003	15
17	Newer scientific herbal preparations for global positioning	IIIM	April 2002	August 2003	16
18	Developing new generation fuels & lubricants	IIP	April 2002	August 2003	16
19	Biominerals processing for extraction of metal values from ores and concentrates	IMMT	April 2002	March 2004	23

Sl. No.	Title of the Project	Nodal Laboratory	Date of commencement of Tenth Five Year Plan	Date of sanction of network project by CSIR	Delay (in months)
20	Exploration and exploitation of microbial wealth of India for novel compounds and biotransformation process	IMTECH	April 2002	January 2004	21
21	Developing and sustaining high science & technology for national aerospace programmes	NAL	April 2002	February 2005	34
22	Impact of anthropogenic perturbations oceanographic atmospheric processes in and around India in the context of global change	NIO	April 2002	February 2004	22
23	Development of catalysis & catalysts	NCL	April 2002	August 2003	16
24	Industrial waste minimisation and clean up	NEERI	April 2002	April 2004	24
25	Technology for engineering critical assessment	NML	April 2002	March 2004	23
26	Upgradation of SI base units, national standards of measurements and apex calibration facilities	NPL	April 2002	March 2004	23
27	Design, analysis and health assessment of special structures including bridges	SERC	April 2002	March 2004	23

**Appendix IV (Refer Para 2.2)****List of projects that were completed beyond scheduled duration of Tenth Five Year Plan**

Sl. No.	Name of project	Nodal Laboratory	Scheduled date of completion of project	Actual date of completion of project	Delay in months
1	Quality enhancement of coal for its efficient utilisation	CIMFR	March 2007	September 2007	6
2	Capacity building for coastal placer mineral mining	CIMFR	March 2007	March 2008	12
3	Electronics for societal purposes	CSIO	March 2007	September 2007	6
4	Discovery, development and commercialisation of new bioactives and traditional preparation	CSIR-Hq	March 2007	March 2008	12
5	New and improved road technologies	CRRRI	March 2007	January 2010	34
6	Drug target development using in-silico biology	IGIB	March 2007	March 2011	48
7	Newer scientific herbal preparations for global positioning	IIIM	March 2007	September 2010	42
8	Exploration and exploitation of microbial wealth of India for novel compounds and biotransformation process	IMTECH	March 2007	March 2010	36
9	Developing and sustaining high science & technology for national aerospace programmes	NAL	March 2007	March 2010	36
10	Impact of anthropogenic perturbations oceanographic atmospheric Processes in and around India in the context of global change	NIO	March 2007	March 2008	12
11	Development of catalysis & catalysts	NCL	March 2007	September 2007	6
12	Industrial waste minimisation and clean up	NEERI	March 2007	September 2007	6
13	Up-gradation of SI base units, national standards of measurements and apex calibration facilities	NPL	March 2007	March 2008	12

### Appendix V (Refer Para 2.3.1)

#### Statement showing measurable deliverables proposed in 27 selected network projects

Sl. No.	Name of the Project	Nodal Laboratory	Targets proposed for the deliverables									
			No. of Technologies to be developed	Amount of Revenue to be generated through sale of technology	No. of publications to be brought out	No. of Patents to be filed	Total amount of ECF to be earned (₹ in crore)	Value of Employment generation (₹ in crore)	Value of Import substitution (₹ in crore)	Societal/Employment benefits to be earned (mandays in crore)		
1	Developing new building construction materials	CBRI	10	No target	150	20	9.50	No target	No target	No target	No target	No target
2	Developing cells & tissue engineering	CCMB	3	No target	No target	No target	No target	No target	No target	No target	No target	No target
3	Animal models and animal substitute technologies	CDRI						No targets set				
4	Developing capabilities & facilities for micro-electromechanical systems (MEMS) and sensors	CEERI	No target	No target	No target	50	15	No target	No target	No target	No target	No target
5	Quality enhancement of coal for its efficient utilisation	CIMFR						No targets set				
6	Positioning Indian nutraceuticals and nutrigenomics on global platform	CFTRI	No target	No target	35	60	2	12.50	27		0.11	
7	Development of key technologies for photonics and opto-electronics	CGCRI						No targets set				
8	Development of medicinal plant chemotypes for enhanced market and value added compounds	CIMAP	20	No target	25	25	2.50	13.52	38		0.12	
9	Environment friendly leather processing technology	CLRI	No target	No target	No target	No target	40	No target	No target	No target	No target	No target

Sl. No.	Name of the Project	Nodal Laboratory	Targets proposed for the deliverables									
			No. of Technologies to be developed	Amount of Revenue to be generated through sale of technology	No. of publications to be brought out	No. of Patents to be filed	Total amount of ECF to be earned (₹ in crore)	Value of Employment generation (₹ in crore)	Value of Import substitution (₹ in crore)	Societal/Employment benefits to be earned (mandays in crore)		
10	Capacity building for coastal placer mineral mining	CIMFR	No target	No target	40	20	No target	No target	No target	No target	No target	No target
11	Developing capabilities in advanced manufacturing technology	CMERI	No target	No target	25	12	16	No target	No target	No target	No target	No target
12	Electronics for societal purposes	CSIO	30	No target	No target	No target	No target	No target	No target	No target	No target	No target
13	Discovery, development and commercialisation of new bioactives and traditional preparation	CSIR Hqs.	No target	No target	No target	50	No target	No target	No target	No target	No target	No target
14	New and improved road technologies	CRRRI	36	No target	No target	7	9	No target	No target	No target	No target	No target
15	Drug target development using in-silico biology	IGIB	250	10	100	50	No target	No target	No target	No target	No target	No target
16	Asthmatic and allergic disorders mitigation mission	IICB	No targets set									
17	Newer scientific herbal preparations for global positioning	IIMM	No target	No target	No target	7	No target	No target	No target	No target	No target	No target
18	Developing new generation fuels & lubricants	IIP	No targets set									
19	Biomineral processing for extraction of metal values from ores and concentrates	IMMT	No targets set									

Sl. No.	Name of the Project	Nodal Laboratory	Targets proposed for the deliverables							
			No. of Technologies to be developed	Amount of Revenue to be generated through sale of technology	No. of publications to be brought out	No. of Patents to be filed	Total amount of ECF to be earned (₹ in crore)	Value of Employment generation (₹ in crore)	Value of Import substitution (₹ in crore)	Societal/Employment benefits to be earned (mandays in crore)
20	Exploration and exploitation of microbial wealth of India for novel compounds and biotransformation process	IMTECH	No target	No target	12	20	2.50	2	23	0.12
21	Developing and sustaining high science & technology for national aerospace programmes	NAL	No targets set							
22	Impact of anthropogenic perturbations oceanographic atmospheric processes in and around India in the context of global change	NIO	No targets set							
23	Development of catalysis & catalysts	NCL	No targets set							
24	Industrial waste minimisation and clean up	NEERI	10	No target	295	111	No target	No target	No target	No target
25	Technology for engineering critical assessment	NML	No targets set							
26	Upgradation of SI base units, national standards of measurements and apex calibration facilities	NPL	No target	No target	No target	No target	23.40	No target	No target	No target
27	Design analysis and health assessment of special structures including bridges	SERC	No target	No target	50	5	No target	No target	No target	No target
<b>Total</b>			<b>359</b>	<b>10</b>	<b>732</b>	<b>437</b>	<b>119.90</b>	<b>28.02</b>	<b>88</b>	<b>0.35</b>

### Appendix VI- (Refer Para 2.5)

#### List of equipment procured and installed at the fag end /after completion of the project

Sl. No	Title of the Project	Actual expenditure (₹ in crore)	Date of completion of the project	Sl. No. of items	Name of the equipment	Cost (₹ in crore)	Procured by	Date of issue of supply order	Date of receipt	Date of commissioning	Remarks
1.	Developing capabilities & facilities for micro-electromechanical systems (MEMS) and sensors	31.89	March 2007	1.	Deep Reactive Ion Etching	3.15	CEERI	September 2006	April 2007	July 2007	DRIE system could not be utilised during the tenure of the project due to delayed sanction and allocation of fund by CSIR and also due to prolonged purchase formalities. CSIR stated in July 2012 that DRIE was being used regularly for ongoing projects.
				2.	Acoustic Imager (Manual System)	0.87	CEERI	August 2004	April 2007	June 2007	CEERI failed to utilise the equipment during the project period due to delay in installation of the same. The description of the commodity as per the purchase order was not quoted in the application for opening of LC. There was delay in taking decision for sending a representative to USA for pre-dispatch inspection. CSIR stated in July 2012 that Acoustic Imager was being used regularly for ongoing projects
2.	Development of medicinal plant chemotypes for enhanced marker	21.66	March 2007	3.	GLP grade extraction unit	1.24	IIIM	February 2007	September 2008	February 2010.	Audit observed that three items of equipment procured by CIMAP could not be utilised for the project activities due to procurement of
				4.	Autopurification system	1.24	CIMAP	September 2005	April 2006	February 2007	

Sl. No	Title of the Project	Actual expenditure (₹ in crore)	Date of completion of the project	Sl. No. of items	Name of the equipment	Cost (₹ in crore)	Procured by	Date of issue of supply order	Date of receipt	Date of commissioning	Remarks
	and value added compounds			5.	Complete Automated Liquid handling System for DNA chip construction and detection	0.90	CIMAP	March 2005	November 2005	March 2009	equipment after closure of the activity in one case and installation of equipment after closure/at the tail end of the activity in the remaining two cases. In respect of two <sup>1</sup> of the above cases, CSIR stated (July 2012) that the absence of major equipments did not hamper the developmental work which was carried out with other existing facilities. Since the entire objective of network projects was about pooling of resources of various CSIR laboratories, the fact that facilities were available elsewhere for carrying out the work denotes faulty decision to procure the above equipment under this project. The reply of CSIR indicates that effectively, procurement of above equipment costing ₹3.38 crore, was avoidable.
3.	Developing capabilities in advanced manufacturing technology	16.13	March 2007	6.	SLS system	2.05	CMERI	Not available	Not available	After completion of the project	Though the actual date of receipt/installation/commissioning was not made available, CMERI stated in December 2011 that the system was procured after completion of the project. CSIR stated in July 2012 that as the

<sup>1</sup> (i) GLP grade extraction unit and (ii) Automated Liquid handling System for DNA chip construction and detection



Sl. No	Title of the Project	Actual expenditure (₹ in crore)	Date of completion of the project	Sl. No. of items	Name of the equipment	Cost (₹ in crore)	Procured by	Date of issue of supply order	Date of receipt	Date of commissioning	Remarks
4.	Electronics for societal purposes	18.87	September 2007	7.	Intelligent Electronic Nose	0.49	CSIO	March 2007	October 2007	February 2008	machine got damaged during transit, the system was procured after tenure of the project. However, the fact remained that activity relating to patient specific bio implants could not be tried through rapid prototyping route using selective laser sintering process during tenure of the project.
				8.	Gel Permeation Chromatography	0.26	CSIO	March 2007	July 2007	August 2007	Of 53 items of equipment valuing ₹2.79 crore procured by CSIO for its activities under the project, it was seen that five items of equipment costing ₹1.21 crore could not be utilised for project activities as these items were either received/installed after completion of the project or installed at the tail end of completion.
				9.	Multiproduct Calibrator	0.23	CSIO	August 2007	May 2008	January 2009	As the intended technology was treated as completed without the use of the equipment, the expenditure incurred on the equipment valued at ₹1.21 crore has resulted in avoidable expenditure to that extent.
				10.	Function Tester Incircuit	0.12	CSIO	March 2007	April 2007	May 2007	CSIR stated in July 2012 that equipment mentioned were part of the infrastructural facilities which were continuously utilised for
				11.	Metlab Software	0.11	CSIO	October 2006	February 2007	May 2007	

Sl. No	Title of the Project	Actual expenditure (₹ in crore)	Date of completion of the project	Sl. No. of items	Name of the equipment	Cost (₹ in crore)	Procured by	Date of issue of supply order	Date of receipt	Date of commissioning	Remarks
5.	Drug target development using in-silico biology	48.62	March 2011	12.	SGI Altix ultraviolet system	0.83	IGIB	September 2010	December 2010	March 2011	similar nature of R&D work. However the fact remained that the equipments were not utilised for the purpose for which they were procured.
				13.	Mid range server	0.12	IGIB	March 2011	August 2011	August 2011	The system costing ₹ 82.74 lakh for large scale integrative analysis of biological data was procured at the fag end of the project. CSIR stated that the endeavour was to utilise the resource available for the project most optimally and gainfully. The reply of CSIR needed to be viewed in light of the fact that procurement of equipment at the fag end of the project resulted in non-utilisation of the item for which it was procured.
											Server costing ₹ 12.27 lakh was not utilised in the project due to delayed submission of placement of order. CSIR stated that the endeavour was to utilise the resource available for the project most optimally and gainfully. The reply of CSIR needed to be viewed in light of the fact that procurement of item at the fag end of the project resulted in non-utilisation of the item for which it was procured.

Sl. No	Title of the Project	Actual expenditure (₹ in crore)	Date of completion of the project	Sl. No. of items	Name of the equipment	Cost (₹ in crore)	Procured by	Date of issue of supply order	Date of receipt	Date of commissioning	Remarks
				14.	Six desk side supercomputers for analysis of high-throughput data for gene-gene interactions	1.16	IGIB	February 2011	May 2011	May 2011	Placement of purchase order at the fag end of a seven year project resulted in non-installation of the indented items costing ₹ 116.32 lakh within the tenure of project. CSIR stated that the endeavour was to utilise the resource available for the project most optimally and gainfully. The reply of CSIR needed to be viewed in light of the fact procurement of item at the fag end of the project resulted in non-utilisation of the item for which it was procured.
6.	Developing new generation fuels & lubricants	22.52	March 2007	15.	C 80 Calvet Calorimeter with adaptation for adsorption studies	0.46	IIP	29.03.06	10.07.06	13.10.06	Audit observed that procurement of equipment costing ₹ 5.32 crore was proposed to be made in 2002-03. Audit further observed that supply orders were issued after two years or more and the same were received/installed at the tail end or after completion of the project.
				16.	Host computer	1.23	IIP	24.03.06	29.08.06	25.02.09	CSIR stated in July 2012 that progress of the project did not
				17.	Full flow dilution tunnel for diesel vehicles	2.21	IIP	29.03.05	02.01.06	25.02.09	

Sl. No	Title of the Project	Actual expenditure (₹ in crore)	Date of completion of the project	Sl. No. of items	Name of the equipment	Cost (₹ in crore)	Procured by	Date of issue of supply order	Date of receipt	Date of commissioning	Remarks
				18.	Dynamic vehicle test bed	1.42	IIP	08.03.06	December 06	09.02.07	suffer as the old equipment was available. The new equipment were utilised to address future requirements. However the fact remained that the equipment were not utilised for the purpose for which they were procured.
7.	Bio mineral processing for extraction of metal values from ores and concentrates	14.73	March 2007	19.	Inductively Coupled Plasma Mass Spectrometer (ICPMS)	1.20	IMMT	March 2004	August 2004	September 2008	The delay was due to failure to arrange pre-requisites for installation of the equipment immediately after receipt. CSIR stated in July 2012 the equipment was being used for carrying of R&D projects. The fact remained that the equipment could not be used for the intended purpose in the project.
				20.	Upgradation of existing 'X-Pert' x-ray Diffractometer	0.68	IMMT	March 2007	August 2007	March 2008	The delay was due to injudicious decision of IMMT to issue work order at the fag end of the project in March 2007. CSIR stated in July 2012 the equipment was being used for carrying of R&D projects. The fact remained that the equipment could not be used for the intended purpose in the project.

Sl. No	Title of the Project	Actual expenditure (₹ in crore)	Date of completion of the project	Sl. No. of items	Name of the equipment	Cost (₹ in crore)	Procured by	Date of issue of supply order	Date of receipt	Date of commissioning	Remarks
				21.	CHN Analyser	0.29	IMMT	March 2006	September 2006	December 2007	The delay was due to failure of the supplier to commission the equipment immediately after receipt even after repeated attempts. CSIR stated in July 2012 the equipment was being used for carrying of R&D projects. The fact remained that equipment could not be used for the intended purpose in the project.
				22.	Transmission Electron Microscope (TEM)	2.54	IMMT	March 2006	December 2006	June 2008	Repeated defects developed in the equipment at the time of commissioning, due to which it could not be used in the project. CSIR stated in July 2012 the equipment was being used for carrying of R&D projects. The fact remained that the equipment was not used for the intended purpose in the project.
				23.	Potentiostat/ Galvanostat	0.13	IMMT	January 2007	August 2007	January 2008	The delay was due to issue of supply order at the fag end of the project in January 2007. CSIR stated in July 2012 the equipment was being used for carrying of R&D projects. The fact remained that the equipment could not be used for the intended purpose in the project.

Sl. No	Title of the Project	Actual expenditure (₹ in crore)	Date of completion of the project	Sl. No. of items	Name of the equipment	Cost (₹ in crore)	Procured by	Date of issue of supply order	Date of receipt	Date of commissioning	Remarks	
8.	Developing and sustaining high science & technology for national aerospace programmes	77.79	March 2010	24.	Super Critical fluid extraction	0.36	IMMT	January 2007	June 2007	October 2007	The delay was due to issue of supply order at the fag end of the project in January 2007. CSIR stated in July 2012 the equipment was being used for carrying of R&D projects. The fact remained that the equipment could not be used for the intended purpose in the project.	
				25.	High Pressure Compressed air supply system with dryer	3.67	NAL	March 2008	October 2009	March 2010	Under this project NAL procured these equipments under a particular activity titled "Ramjet/Scramjet Test Facilities" which was completed in March 2008. On being pointed out NAL stated in January 2012 that objectives of the project were met but after the specified completion date. However NAL did not furnish any documentary evidence showing achievement of the objectives and status of evaluation of achievement conducted by the MC constituted for this purpose. CSIR did not offer any comments in July 2012 regarding delay in procurement of equipment after completion of the project.	
				26.	High Pressure 200 bar seamless gas cylinders of 2500 l water capacity, manifold system & support system	2.68	NAL	Not available	December 2009	June 2010		
				27.	NI Data acquisition & control system	0.15	NAL	Not available	Not available	August 2008		
				28.	Exciter, Ignitor, Leads and Connector	0.25	NAL	Not available	April 2008	May 2008		

Sl. No	Title of the Project	Actual expenditure (₹ in crore)	Date of completion of the project	Sl. No. of items	Name of the equipment	Cost (₹ in crore)	Procured by	Date of issue of supply order	Date of receipt	Date of commissioning	Remarks
9.	Upgradation of SI base units, national standards of measurements and apex calibration facilities	15.21	March 2008	29.	Ion Chromatography System	0.46	NPL	September 2007	December 2007	January 2008	Though the project was started in March 2004, supply order was issued on January 2007 and September 2007 after a lapse of three years.
				30.	Gas Chromatographs (GCS) System	0.41	NPL	January 2007	September 2007	February 2008	CSIR stated in July 2012 that Ion Chromatography System was delayed in the process because tenders were invited thrice as the scientific equipments were generally not available on the shelf. As regards Gas Chromatographs (GCS) System the delay was also stated to be due to re inviting of tenders. The fact remained that the equipment could not be used for the intended purpose in the project.
10.	Industrial waste minimisation and cleanup	13.93	September 2007	31.	X-ray defraction unit	0.25	NEERI	September 2006	July 2007	July 2007	The equipment could not be used in the project due to delay in issue of supply order.
11	Quality enhancement of coal for its efficient utilisation	7.31	September 2007	32.	Digital contact angle and surface tension analyzer	0.11	CIMFR	March 2007	June 2007	January 2008	Issuance of purchase order at the fag end of project resulted in delay in installation. As a result, the equipment could not be used for the intended purpose in the project.
12	Design analysis and health assessment of	16.34	March 2007	33.	Upgradation of RS Console software	0.13	SERC	October 2006	June 2007	July 2007	SERC stated that all the equipment purchased were intended to strengthen all round R&D

Sl. No	Title of the Project	Actual expenditure (₹ in crore)	Date of completion of the project	Sl. No. of items	Name of the equipment	Cost (₹ in crore)	Procured by	Date of issue of supply order	Date of receipt	Date of commissioning	Remarks
13	special structures including bridges			34.	Tower Crane	1.65	SERC	November 2006	February 2007	April 2007	capabilities and that all the equipment procured had the potential for usage in all ongoing projects. This indicated that equipment were procured for up-gradation of infrastructure and not for network project. The reply of SERC is not tenable since CSIR had stipulated that the laboratories should procure only those equipments that were absolutely required for carrying out research under the network project. CSIR did not offer any comments on the issue.
				35.	Upgradation of Servo controller with software	0.33	SERC	Not available	March 2007	After July 2007	
14	Impact of anthropogenic perturbations on oceanographic atmospheric process	14.01	March 2008	36.	Spectrometer	0.18	NPL	March 2005	July 2005	December 2009	The equipment was commissioned after completion of the project in March 2008. This resulted in non-completion of the work under the project. CSIR stated in July 2012 that the spectrometer was being used for generation of long-term records which was major purpose of launching the network project. The fact however remained that the equipment could not be used for the intended purpose for which it was procured under the project.
				37.	APTF	13.37	CRRRI	February 2007	January 2010	April 2010	
	New and improved road technologies	24.30	January 2010								CSIR stated (July 2012) that there was delay in deployment of terms for pre shipment factory acceptance test and training, re-



Sl. No	Title of the Project	Actual expenditure (₹ in crore)	Date of completion of the project	Sl. No. of items	Name of the equipment	Cost (₹ in crore)	Procured by	Date of issue of supply order	Date of receipt	Date of commissioning	Remarks
15	Development of key technologies for photonics and opto-electronics	31.95	March 2007	38.	FBG/LPG	1.80	CSIO	NA	NA	Not commissioned upto October 2007	tendering in selection of transporter and creation of infrastructural facilities. The fact remained that the equipment could not be used for the intended purpose in the project.  CSIR stated (July 2012) that the machines were to be procured from two different countries with integration of two systems at the place of one of the companies. During the process one of the companies was merged with new company and completion of various formalities took precious time. The fact however remained that the equipment could not be used for the intended purpose for which it was procured under the project.
<b>TOTAL</b>						<b>48.73</b>					

## Appendix VIII (Refer Para 2.6.1)

### Status of meetings of Monitoring Committee and Task Force

Sl. No	Title of the Project	Nodal Lab	Month of sanction by CSIR	Month of issue order for constitution of MC by CSIR	Month of completion of the project	No. of meetings of MC to be conducted	No. of meetings of MC actually conducted	Percentage of shortfall of meetings of MC	No. of meetings of TF to be conducted	No. of meetings of TF actually conducted	Percentage of shortfall of meetings of TF
1	Developing new building construction materials	CBRI	August 2003	October 2004	March 2007	5	Not available	-	10	Not available	-
2	Developing cells & tissue engineering	CCMB	July 2003	October 2004	March 2007	5	5	0	10	1	90
3	Animal models and animal substitute technologies	CDRI	October 2003	October 2004	March 2007	5	2	60	10	1	90
4	Developing capabilities & facilities for micro-electromechanical systems (MEMS) and sensors	CEERI	January 2004	January 2005	March 2007	4	4	0	10	5	50
5	Quality enhancement of coal for its efficient utilisation	CIMFR	May 2004	October 2004	September 2007	6	5	17	12	Not available	-
6	Positioning Indian nutraceuticals and nutrigenomics on global platform	CFTRI	August 2003	October 2004	March 2007	5	3	40	10	Not available	-
7	Development of key technologies for photonics and opto-electronics	CGCRI	August 2003	October 2004	March 2007	5	2	60	10	5	50
8	Development of medicinal plant chemotypes for enhanced marker and value added compounds	CIMAP	July 2003	October 2004	March 2007	5	2	60	10	2	80
9	Environment friendly leather processing technology	CLRI	January 2004	October 2004	March 2007	5	4	20	10	8	20
10	Capacity building for coastal placer mineral mining	CIMFR	April 2003	October 2004	March 2008	7	5	29	14	5	64

Sl. No	Title of the Project	Nodal Lab	Month of sanction by CSIR	Month of issue order for constitution of MC by CSIR	Month of completion of the project	No. of meetings of MC to be conducted	No. of meetings of MC actually conducted	Percentage of shortfall of meetings of MC	No. of meetings of TF to be conducted	No. of meetings of TF actually conducted	Percentage of shortfall of meetings of TF
11	Developing capabilities in advanced manufacturing technology	CMERI	January 2004	October 2004	March 2007	5	4	20	10	5	50
12	Electronics for societal purposes	CSIO	July 2003	October 2004	September 2007	6	Not available	-	12	Not available	-
13	Discovery, development and commercialisation of new bioactives and traditional preparation	CSIR-Hqs.	April 2004	May 2005	March 2008	5	2	60	14	16	0
14	New and improved road technologies	CRRRI	August 2003	October 2004	January 2010	9	6	33	18	9	50
15	Drug target development using in-silico biology	IGIB	January 2004	October 2004	March 2011	13	4	69	26	14	46
16	Asthmatic and allergic disorders mitigation mission	IICB	July 2003	October 2004	March 2007	5	3	40	10	Not available	-
17	Newer scientific herbal preparations for global positioning	IIIM	August 2003	October 2004	September 2010	12	3	75	24	7	71
18	Developing new generation fuels & lubricants	IIP	Not available	October 2004	March 2007	5	3	40	10	6	40
19	Biomineral processing for extraction of metal values from ores and concentrates	IMMT	March 2004	April 2005	March 2007	4	4	0	10	Not available	-
20	Exploration and exploitation of microbial wealth of India for novel compounds and biotransformation process	IMTECH	January 2004	November 2004	March 2007	10	2	80	22	Not available	-
21	Developing and sustaining high science & technology for national aerospace programmes	NAL	February 2005	October 2004	March 2010	10	Not available	-	22	Not available	-

Sl. No	Title of the Project	Nodal Lab	Month of sanction by CSIR	Month of issue order for constitution of MC by CSIR	Month of completion of the project	No. of meetings of MC to be conducted	No. of meetings of MC actually conducted	Percentage of shortfall of meetings of MC	No. of meetings of TF to be conducted	No. of meetings of TF actually conducted	Percentage of shortfall of meetings of TF
22	Impact of anthropogenic perturbations oceanographic atmospheric processes in and around India in the context of global change	NIO	February 2004	April 2005	March 2008	6	3	50	14	3	79
23	Development of catalysis & catalysts	NCL	August 2003	October 2004	September 2007	6	3	50	12	Not available	-
24	Industrial waste minimisation and clean up	NEERI	April 2004	October 2004	September 2007	6	6	0	12	Not available	-
25	Technology for engineering critical assessment	NML	March 2004	October 2004	March 2007	5	4	20	10	Not available	-
26	Upgradation of SI base units, national standards of measurements and apex calibration facilities	NPL	March 2004	October 2004	March 2008 (Upto December 2007)	7	1	86	14	3	79
27	Design analysis and health assessment of special structures including bridges	SERC	March 2003	October 2004	March 2007	5	5	-	10	5	50
<b>TOTAL</b>						<b>171</b>	<b>85</b>		<b>356</b>	<b>95</b>	

### Appendix VIII (Refer Para 3.1)

#### Project wise position of number of technologies developed and commercialised

Sl. No	Project code	Nodal Lab	Number of technologies developed	Number of technologies transferred as of July 2012	Number of technologies commercialised as of July 2012	Revenue generated from sale of technology (₹ in lakh)
1	Developing new building construction materials	CBRI	33	19	19	1
2	Developing cells & tissue engineering*	CCMB	2	0	0	0
3	Animal models and animal substitute technologies	CDRI	41	0	0	0
4	Developing capabilities & facilities for micro-electromechanical systems (MEMS) and sensors	CEERI	16	0	2	0
5	Quality enhancement of coal for its efficient utilisation	CIMFR	0	0	0	0
6	Positioning Indian nutraceuticals and nutrigenomics on global platform	CFTRI	7	2	2	16
7	Development of key technologies for photonics and opto-electronics	CGCRI	26	1	1	3
8	Development of medicinal plant chemotypes for enhanced marker and value added compounds	CIMAP	7	1	1	21
9	Environment friendly leather processing technology	CLRI	13	4	2	227.50
10	Capacity building for coastal placer mineral mining	CIMFR	9	1	1	31
11	Developing capabilities in advanced manufacturing technology	CMERI	6	1	1	2
12	Electronics for societal purposes	CSIO	11	1	0	0.45
13	Discovery, development and commercialisation of new bioactives and traditional preparation	CSIR-Hq	2	1	0	0
14	New and improved road technologies	CRRRI	21	1	1	2
15	Drug target development using in-silico biology**	IGIB	62	0	0	0
16	Asthmatic and allergic disorders mitigation mission	IICB	23	0	0	0

Sl. No	Project code	Nodal Lab	Number of technologies developed	Number of technologies transferred as of July 2012	Number of technologies commercialised as of July 2012	Revenue generated from sale of technology (₹ in lakh)
17	Newer scientific herbal preparations for global positioning	IIIM	5	0	0	0
18	Developing new generation fuels & lubricants	IIP	21	1	1	8
19	Biomineral processing for extraction of metal values from ores and concentrates	IMMT	1	1	0	0
20	Exploration and exploitation of microbial wealth of India for novel compounds and biotransformation process	IMTECH	0	0	0	0
21	Developing and sustaining high science & technology for national aerospace programmes***	NAL	9	3	3	0
22	Impact of anthropogenic perturbations oceanographic atmospheric processes in and around India in the context of global change	NIO	0	0	0	0
23	Development of catalysis & catalysts	NCL	5	1	1	14
24	Industrial waste minimisation and clean up	NEERI	41	3	3	51
25	Technology for engineering critical assessment	NML	8	6	0	1.7
26	Upgradation of SI base units, national standards of measurements and apex calibration facilities	NPL	6	4	0	4.56
27	Design analysis and health assessment of special structures including bridges	SERC	24	0	0	0
<b>Total</b>			<b>399</b>	<b>51</b>	<b>38</b>	<b>383.21</b>

\* CSIR initially (July 2012) stated that revenue of ₹10.48 crore was earned, which was contradictory as no technology was developed. CSIR later (September 2012) accepted that the amount was not generated from this network project.

\*\* CSIR stated (July 2012) that four software were transferred. Audit observed that these were actually developed from a project titled 'Development of versatile, portable software for Bioinformatics' under another scheme of CSIR.

\*\*\* CSIR stated (July 2012) that NAL generated revenue of ₹60.74 crore. Audit however observed that this amount was not realised from network project.