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Audit of Scientific Departments

The suggestion[1] for creating a separate audit office for the Scientific Departments had come from the Science Advisory Committee to the Cabinet who recommended a unified audit set up for audit of all scientific departments/ bodies/ authorities. This was agreed to by the Government of India when Department of Science and Technology OM of 28 December 1983 stated that C&AG of India had been requested that audit of all Science and Technology Agencies and Departments be brought under one single agency under the C&AG of India. The reasons for this were apparent. Normal audit norms will not work for science audit and, therefore, approach of audit would need to be different. C&AG T.N. Chaturvedi agreed to the suggestion and intimated Ministry of Finance in March 1986 the decision to create a separate office for Science and Technology Audit w.e.f. 1 April 1986, styled as the office of the Director of Audit, Commerce, Works and Miscellaneous-II. This was set up as a unified organization for science audit with the responsibility for the audit of the Scientific Departments/ Autonomous Organizations/ Institutions/ Laboratories, etc. of the Government of India. The office was created by restructuring of the office of the existing Director of Audit, Commerce, Works and Miscellaneous. The designation of the office was changed in 1989 as office of the Director of Audit (Scientific Departments), New Delhi and in the following year to office of the Principal Director of Audit (Scientific Departments). This office was declared as Nodal Office for Environment Audit in December 2002. The 2002 edition of C&AG's MSO (Audit) contained for the first time a Chapter on Audit of Scientific Departments. The office has brought out a separate Manual of Scientific Departments in 2007.

This office conducts the audit of Scientific Departments covering four Central Ministries and three Departments and is the sole auditor of nine autonomous bodies under the Scientific Departments. The Audit Reports of these autonomous bodies are prepared under section 19(2) and 20(1) of the C&AG's (DPC) Act, 1971. The office is responsible for preparation of the report of the Comptroller and Auditor General of India, Union Government (Scientific Departments). The office of the Pr. Director of Audit (Scientific Departments) is functioning from Delhi with three branch offices headed by Dy. Directors/ Directors, for the audit of Department of Atomic Energy at Mumbai, Department of Space at Bangalore and Kolkata.

The Ministries/ Departments and major autonomous bodies under the audit control of Pr. Director of Audit (Scientific Departments) are given below:

(i) Ministry of Science and Technology, including Department of Science and Technology, Department of Scientific and Industrial Research and Department of Biotechnology.
(ii) Ministry of New and Renewable Energy.
(iii) Ministry of Earth Sciences including India Meteorological Department.
(iv) Ministry of Environment and Forests.
(v) Department of Atomic Energy.
(vi) Department of Space.
(vii) Department of Information Technology.
(viii) Indian Council of Agricultural Research and its laboratories.
(ix) Council of Scientific and Industrial Research and its laboratories.

Besides undertaking audit of these Ministries/ Departments/ Autonomous Bodies dealing with Science & Technology, this office deals with more than 500 units functioning under these Ministries that includes some of the most prestigious and prominent scientific institutions of the country.

Some of the important developments during the period 1990 onwards concerning Science and Technology audit are given below.

AUDIT APPROACH—THE GUIDING PRINCIPLES

To stress the special approach and emphasis that Audit should adopt in the case of Scientific Departments, C&AG has laid down the following guiding principles for Scientific Audit[2].

(i) Audit should not be perceived as an agency oriented towards finding fault, but as a mission directed towards pointing out system deficiencies with a view to assisting the scientific community.

(ii) The role of audit should be complementary to the efforts of the Executive and aim at improving managerial practices in scientific administration.

(iii) Audit should recognize the uncertainties involved in scientific research. Therefore, while evaluating systems of planning, programming, funding, monitoring or execution of a scientific or research project, audit should endeavour to segregate what is foreseeable from what cannot be anticipated. This, of course, does not reduce the significance of data availability on time and cost overruns in overall planning, establishment of priorities and resources allocation for audit comments.

(iv) In auditing the functioning of scientific departments, the effort should be to evaluate the projects and programmes with reference to known parameters and a *priori* assumptions made by the departments, such as the Departments of Space and Atomic Energy.

(v) In judging performance, audit should further be guided by the performance parameters prescribed by the organization itself, in case these have not been prescribed, audit will be well within its rights to point out the omission. It is also the function of audit to examine whether proper monitoring machinery is available for securing the timely and cost-effective fulfillment of the objectives envisaged.

(vi) While evaluating scientific departments, the approach adopted by various Committees such as the Abid Hussain Committee on the Council of Scientific and Industrial Research and the Rao Committee on the Indian Council of Agricultural Research and their recommendations should be gone into and kept in view. Audit can also play a role in ascertaining the extent to which implementation of these recommendations had progressed.

(vii) Scientific research is of two kinds, basic research aimed at expanding the frontiers of human knowledge and applied research for bringing the fruits of such knowledge to the service of mankind. It will be necessary for audit to be very careful and discreet in commenting on areas of basic research, particularly when its comprehension and knowledge of basic scientific research is inadequate. Nevertheless, it has an important role to play in examining the programmes and projects of applied research in the context of economy, efficiency and effectiveness of the utilization of resources.

(viii) Similarly, different criteria will need to be applied and higher levels of personnel deployed for the audit of highly sensitive organizations such as the Departments of Atomic Energy and Space compared to other scientific and research organizations. This distinction is of paramount importance.

(ix) Audit should examine whether there is an effective linkage between applied research and the user industries. The fruits of knowledge generated by the scientists should be available to the industry and society in full measure.

(x) Having due regard to the complexities involved in the audit of scientific endeavour and the maturity required, specialized training programmes have to be organized periodically for personnel engaged in the audit of scientific departments.

Risk based approach to audit is prominent in Science Audit. The risk based approach is adopted for both audit planning as well as selection of units for audit. The office has recently drawn up a strategic Plan. Complete profile of auditable entities is maintained in an electronic data base. This data base also helps the office in deciding upon the periodicity and time frame for audit of concerned units for Performance Audit as well as Transaction Audit on the basis of risk perception. The rule of the thumb is that high risk units with high expenditure are chosen for carrying out Performance audits and for Transaction audit, units having high risk even with low expenditure are selected.

About 50 per cent of the auditee units of the Principal Director of Audit, Scientific Audit are small units, with expenditure less than Rs. 20 crore. From transaction audit view point these are not significant units—they have poor potential for transaction audit paras.

The Audit approach is shaped by these two considerations described above and hence a dominant role for Performance Audit in the Science Audit.

While Performance Auditing guidelines of 2004 are applicable to science and technology (S&T) audit also, Principal Director of Audit, Scientific Departments has prescribed certain criteria that are specific to Scientific Departments, for application in the performance evaluation (audit) of these entities. These are: (i) project success in terms of achievement of objectives set out by the organizations themselves, (ii) transfer and commercialization of technology developed, (iii) patents obtained, (iv) publication of papers alongwith impact factor of these papers, and (v) finally internal revenue generation from research on sponsored projects etc.

The office uses the statistical sampling techniques for selection of samples in Performance Audits. In their recently conducted Performance Audits, the office used random sampling, stratified sampling and other sampling techniques for Performance Audit on 'Management of Wastes in India' as well as 'Working of Krishi Vikas Kendras'.

AUDIT REPORTS

Audit Reports brought out by Principal Director of Audit, Scientific Departments have one distinguishing feature. There is a preponderance of value for money or performance audit paras mostly long reviews. This is just as it should be because in the audit of Science & Technology departments, the auditor is more concerned with the outcome of the research and development efforts and how the institutions and laboratories are fulfilling their mandates. The emphasis on performance audit in Science Audit is prevalent from 1991 onwards. For example, in 1991, the Report had four Reviews. In the following years, there were 7 (1992), 8(1993), 11 (1994), 7 (1995), 5 (1996), 4 (1997), 8 (1998), 4 (1999). Number of performance audit reviews in S&T, dropped sharply in 2003(2), 2004(2), 2005(1). But things have since improved substantially and in 2005–06 Audit Report, there were four Performance Audit reviews. Audit Plan for 2006–07 contemplates bringing out eight Performance Audit reviews in its Audit Report for fiscal 2006–07 (Audit Report 2008).

Audit Reports on Scientific Departments have brought out very fine results of audit of these highly technical entities. Some of

the more important performance audit reviews brought out during the period 1990 onwards are listed below:

(i) Central Drug Research Institute (Audit Report No.2 of 1991—para 28)
(ii) Working of Department of Biotechnology (Audit Report No. 2 of 1992—para 4.2)
(iii) Central Pollution Control Board (Audit Report No. 2 of 1993—para 4.1)
(iv) Ganga Action Plan (Audit Report No 6 of 1995—para 5.1) and No. 5A of 2000
(v) National Programme on Improved Chullahas (Audit Report No. 6 of 1996—para 3.1)
(vi) Management of Intellectual Property Rights and Technology Transfer (Audit Report No.5 of 1997—para 6.3)
(vii) Manpower Audit in CSIR (Audit Report No.5 of 1998—ara 2.1)
(viii) Nuclear Power Profile (Audit Report No.5 of 1999—para 2.1)
(ix) Utilization of Lab Reserve Fund (Audit Report No.5 of 2000—para 3.1)
(x) IARI, New Delhi (Audit Report No.5 of 2002-para 2.1)
(xi) Technology Transfer in CSIR (Audit Report No.5 of 2003-para 2.1)
(xii) National Bureau of Plant Genetic Resources (Audit Report No.5 of 2004—para 2)
(xiii) Management of Projects relating to utilization and conservation of soil, water (undertaken by various Institutes of ICAR) (Audit Report No.5 of 2005—para 2)
(xiv) Conservation and Protection of Tigers in Tiger Reserves (Audit Report No. 18 of 2006)
(xv) Performance Audit on Development of Telecommunication Technology by Centre for Development of Telematics and transfer thereof for manufacturing and commercialization (Audit Report No. 2 of 2007 (performance audit) -para 1)

A brief synopsis of some of the Reviews is given below:

Windmill Demonstration Project: In his Report of 1991, C&AG reviewed the Windmill Demonstration Project[3] of the Department of Non-Conventional Energy Sources. The programme was

undertaken in 1987 to run through the Seventh Plan period in the State of Andhra Pradesh for the purpose of obtaining more extensive user response and create awareness in new areas to provide inputs for subsequent extensive programmes. Against 150 windmills to be set up for demonstration programme, only 77 were procured and of these only 29 were in working order. As regards the user response and awareness in these new areas of energy sources, apparently, due to large scale failure of the windmill in the demonstration project, their response would have been quite adverse. In summary, the entire concept was a failure.

Polymetallic Nodules Programme: The Project to develop a mining system to explore Polymetallic Nodules (PMN)[4] lying on the ocean floor was commissioned during the Seventh Plan. This was to be preceded by commissioning of the pilot plant. Amongst other things, a Hydrosweep equipment system was procured in July 1990 (after delay of more than one year at a cost of about Rs. 7.04 crore) but its performance did not match the expectations. Audit also contented that this system was probably not even required because before the installation of this system 4.10 lakh line kms of echo sounding data (single beam bathymetric) had already been collected and depth contour maps prepared, whereas the hydrosweep system had carried out only 0.185 lakh line kms of bathymetry. While the department contested this point, a note for discussion in Planning Commission on Eighth Plan indicated that no headway had been made in the development of mining system during the entire Seventh Plan due to non availability of viable projects. The department accepted this fact. The department was responding to these problems by identifying proper mine sites etc and prerequisite R&D work on mining had been taken up by Central Mechanical Engineering Research Institute at the instance of department (January 1992).

The short point of audit in this review was that department unnecessarily procured a costly system which proved of no use when the same work had already been completed by the department. In the circumstances, the installation and deployment of sea beam hydrosweep system would tantamount to infructuous expenditure of more than Rs. 7 crore and that also in foreign exchange those days when India was in a crisis as far as foreign exchange was concerned.

Fast Breeder Test Reactor: In his Report of 1993 on Scientific Department, C&AG mentioned about the huge delay in commissioning of Fast Breeder Test Reactor[5] of the Department of Atomic Energy at Indira Gandhi Centre for Atomic Research Kalpakkam. The delay would, in turn, delay the commissioning of 500 MW Prototype Fast Breeder Reactor programme of the department on which an expenditure of Rs. 34.28 crore had already been incurred during 1985–92.

Indian Agricultural Research Institute (IARI): In a review on Indian Agricultural Research Institute (IARI)[6] in his Report of 1996, C&AG brought out that various councils namely Research, Academic, Executive and Extension Councils, which provide assistance to the Board of Management in proper and effective discharge of duties and responsibilities did not meet as prescribed every quarter. The Research Council did not meet even once during 1990–95. The result of this gross negligence of their functions was obvious on the research activities since, on the one hand no new projects were undertaken during 1990–94, 230 ongoing projects were closed in March 1994 without Research Council carrying out a review of any of them. In any case, no review of such closed projects could be done because no research project files (RPF) were prepared and maintained separately for each project and no RPF was sent to ICAR during the entire period of the Audit review. Audit was informed that while RPF-I containing basic information was maintained, RPF-II which gives annual progress of the research and RPF-III which is the final report of the project were not maintained in major divisions.

Nuclear Power Profile: In his Report of 1999, C&AG produced the results of his audit on Nuclear Power Profile[7] of the Department of Atomic Energy. As envisaged in 1984, the profile projected addition of 7880 MW of Nuclear Power by the end of year 2000 which would increase total nuclear power generation in the country to nearly 10000 MW. However, audit found sluggish execution of the project by the Department of Atomic Energy and Nuclear Power Corporation which made it impossible to achieve the target. In fact the results were absolutely bad since not a single plant was complete till the end of March 1998 and therefore, no additional capacity to the nuclear power was added till 1997–98 vis-à-vis a target of 2645 MW. Four plants with capacity of 940 MW were sanctioned in 1986–87 to be commissioned by 1995–96, were not

completed till March 1998. Two others with 500 MW each were sanctioned in 1991 while remaining 14 plants with a combined capacity of 5940 MW had not even been sanctioned as of March 1998.

Funds allocated for the project till March 1998 were Rs. 2617 crore against projected cost of about Rs.15000 crore. Audit noted several execution defects which led to a mismatch between the procurement of material and other important inputs like civil works, equipment and infrastructure. Resultantly, material procured rather hurriedly for Rs. 1069.61 crore was lying unused for the past 9 years (up to 1998). This included material worth Rs. 523.86 crore for plants which had not even been sanctioned.

Ganga Action Plan:In the year 2000,[8] C&AG brought out a Report on Ganga Action Plan, the flagship scheme of the Ministry of Environment and Forest whose purpose was to immediately reduce the pollution load on the river Ganga. To oversee the implementation of the Ganga Action Plan and lay down the policies and programmes, Government of India constituted the Central Ganga Authority (CGA) under the Chairmanship of the Prime Minister in February 1985. The scheme approved by the Cabinet in 1985 was 100% centrally sponsored schemes. It was being executed by the Ganga Project Directorate subsequently, renamed as National River Conservation Directorate as a wing of the Ministry of Environment and Forest. The actual implementation of the programme was being done by the various agencies in the concerned States like Public Health Engineering Department, Water and Sewage Boards, Pollution Control Boards, Development Authorities, Local Bodies etc.

The initial objective of the Project was improvement of the water quality of river Ganga to acceptable standards by preventing the load reaching the river. However, in 1987, the quality of the water in the river was downgraded to 'Bathing class' because Ganga Action Plan phase-I did not cover pollution load of Ganga fully. The GAP phase-II was launched in stages between 1993–1996 and in 1996, other polluting towns left out and three tributaries of river Ganga i.e., Yamuna, Damodar and Gomati were also included. States that were involved in the implementation of the project GAP-II were Uttaranchal, Haryana, Delhi, Uttar Pradesh, Bihar and West Bengal. The total fund released for the project since inception was Rs.987.88 crore till March 2000.

This was the third review by C&AG on Ganga Action Plan[9], one of the most important subjects which affected a large population of the country. The Audit findings on this project were very revealing:

(i) the delay in completion of GAP-I was extraordinarily big —against the completion date of March 1990, later on extended to March 2000, it was incomplete till 2003. Similarly, for GAP-II which was to be completed in 2001, the date was extended till December 2008. The PAC was very much concerned with this extremely slow pace of development for the last 18 years under GAP-I and II[10].

(ii) Audit Report pointed out a number of cases of financial mismanagement by the State level implementing agencies including diversion of funds to the tune of Rs. 36.07 crore on unauthorized activities. The PAC came down heavily on these and asked the Ministry to seek information from the concerned states and give correct and up-to-date position of the cases. The Ministry in their action taken note was silent on the financial irregularities in states other than West Bengal and Bihar. These were the only two states who gave a reply to the Ministry. The PAC in their Action Taken Report[11] directed the Ministry to take suitable remedial measures and fix responsibility in the matter.

(iii) Regarding core schemes, Bihar was unable to obtain any sanction from the Ministry in interception and diversion schemes in phase-II of the plan because of its failure to submit any detailed project reports. Similarly, for sewage treatment plant, Bihar and West Bengal could not obtain sanction of the Ministry for the sewage treatment plant in phase-II of the scheme due to various reasons and the results of all these , there were delays leading to cost and time escalation, idling of the plants, mismatch with interception and diversion schemes, technical flaws etc.

There were delays in completion of non core schemes of the Ganga Action Plan having bearing on the river pollution. Audit test check in the states revealed instances of impairment of assets created at great public expense because of neglect and lack of maintenance, besides delays in their setting up.

(iv) Audit pointed out absence of a mechanism to evaluate the estimation of sewage by the states and it had found instances of incorrect estimations in the test check. Additionally, there was no time schedule for submission of Detailed Project Reports which were found to have been delayed abnormally. Audit did not find much evidence of a well-defined monitoring mechanism at the Ministry to ensure adherence by the States of the time-schedule prescribed at the instance of the Supreme Court. The Apex body for this purpose headed by the Prime Minister met only twice in 1994 and 1997.

This para was discussed in PAC who gave their Report in February 2004.

The PAC pointed out to a World Bank sponsored study which had concluded that inspite of the 'massive Rs. 1500 crore plan launched in 1980s to clean up the Ganga, its pollution levels continued to be alarmingly high and were contributing to about 9 to 12 per cent of total disease burden in Uttar Pradesh'.

The Committee also expressed grave concern over throwing of dead bodies and carcasses in Ganga river.

National Bureau of Plant Genetic Resources: National Bureau of Plant Genetic Resources (NBPGR) a constituent unit of Indian Council of Agricultural Research (ICAR) and established in 1976 has the mandate of collection, introduction, evaluation, conservation, documentation and pest free exchange of Plant Genetic Resources (PGR). An audit review[12] that focused on issues concerned with management of plant genetic resources by NBPGR disclosed that NBPGR was yet to complete the evaluation, conservation and documentation of germplasm samples collected during the period 1997–03: Coordination between NBPGR and its regional stations, National Active Germplasm Sites and indenters in obtaining feedback on germplasm samples sent to them for evaluation also needed improvement. It is the sole authority for issuing permits for import of agri-horticultural plant germplasm samples for research purposes. The responsibility of carrying out quarantine tests to ensure that imported plant germplasm samples as well as germplasm samples to be exported are free from diseases and pests, also rests with NBPGR. The National Containment Facility established in September 2001 at a total cost of Rs.3.67 crore to conduct quarantine tests for transgenic germplasm samples remained unused. The objectives of the projects of establishment

of Gene Bank for Medicinal and Aromatic Plants (Rs. 90.35 lakh), National Facility for Plant Tissue Culture Repository (Rs. 75.04 lakh) and Regeneration of Agri-biodiversity (Rs. 51.92 lakh) were not achieved.

National Programme on Improved Chullahas: An interesting scheme called 'National Programme on Improved Chullahas' was reviewed in C&AG's Audit Report[13] on Scientific Departments of 1996. The case brought out the usual contradiction in our scheme formulation and execution. A very efficient, smokeless environment was promised by these Improved Chullahas. In practice, as audit review found out, the programme design and implementation was highly defective. It also reflected on quality of scrutiny of the scheme by all concerned. The audit review covered performance of the programme for the period 1990–95 (The National Programme was running from April 1985). The modus operandi was that the Ministry of Non-Conventional Energy Sources would subsidise for providing improved Chullahas to 112 lakh households through State Governments and other nodal agencies under the scheme.

Audit review showed that upto the year 1994–95, during the 10 years of operation of the programme only 16 per cent of the targeted households were supplied 'Chullahas'. At this rate, the Report reckoned, it would take another 40 to 50 years to cover the targeted households under the programme. Bulk of the Chullahas installed in various states were non-functional for one reason or the other. Many of them had been dismantled. Above all, technical efficiency of the Chullahas was also in doubt. The programme had no core organizational support and there was hardly any public awareness or publicity. A big failure was of Technical Back up Unit (TBU) established in each state to aid, advise and extend a technical support to nodal implementing agencies and to carry out research and development. TBU was also to impart training to self employed workers. But TBU failed on this count miserably. Feed back through independent evaluation and surveys pointed out that intended benefits were far from being realized. In nutshell, Rs. 79 crore spent as subsidy and other incidental expenditure on the programme mainly proved unproductive. In many states heavy inventory of unsold Chullahas was lying. The scheme was closed down thereafter.

Manpower Audit of Council of Scientific and Industrial Research: In his Audit Report for the year ended March 1997[14], C&AG reviewed the functioning of Council of Scientific and Industrial Research

(CSIR) which is the premier institution in the field and under whose umbrella there were at that time 41 National Laboratories and Institutions spread all over the country carrying out Research and Development (R&D) in diverse disciplines. This review on CSIR focused on manpower resources, specially issues concerning manpower planning, recruitment, employment and promotion. It covered six laboratories of CSIR and the HQrs.

Council of Scientific and Industrial Research (CSIR) did not have a proper mechanism in place for any systematic assessment of its manpower requirement; it did not comply with Government's instructions regarding constitution of internal work study units or internal staff inspection units for laying down norms etc. Ratio of scientific and non-scientific staff in the six test checked laboratories was much higher than the ratio of 1:1.5 recommended by a Committee to review the functions and structure of the CSIR —the recommendations of the Committee had been approved by the Science Advisory Council (SAC) to the Prime Minister as well as the General Body (GB) of the Council. It was also found that 14 laboratories had 122 scientists and 500 technicians over and above the sanctioned strength as of July 1995. The Council did not follow Government's directives for 10 per cent reduction in posts on the administrative side. A peculiar situation that existed was that 49 scientists and 155 technicians in six laboratories were performing functions not related to R&D.

The situation in CSIR HQrs was no better with 83 scientists and 222 technicians doing work without any R&D contents. The Institute in Bhubaneswar (Central Salt and Marime Chemical Research) had engaged 32 to 45 security personnel for 4 years (cost: Rs. 32.1 lakh) against shortage of only 3 to 5 security personnel. There were cases of persons appointed on regular basis for sponsored programme causing administrative problems subsequently. More than 1100 people were engaged as casual workers for work of regular nature—all these were appointed against orders of the DG.

A serious point brought out was that persons not possessing academic/ technical qualifications prescribed for entry level posts were appointed/ promoted to scientific or technical posts. Most of them were actually deployed on non-R&D work. Time bound assessment promotion scheme meant for scientific personnel was by and by extended to non-technical posts also including Compounders, Nursing Sisters, Malis, Artists, etc. Cadre Review to provide promotional avenues to its administrative staff was

done without approval of the Finance Minister even though it was so required. It was also noted that promotions out of cadre review were made retrospectively ignoring the advice of Member (Finance). Several cases were noted where administrative staff were inducted into technical scheme to provide them benefits of faster promotion and higher retirement age. A large number of them did not possess the prescribed technical qualifications.

Commenting on the Research activities of the laboratories Audit pointed out that scientists of six laboratories during 1992–97 developed just one technology by a laboratory (ITRC) which has a strength of 108 scientists on an average basis during 1992–97. There was no effective management system for efficient functioning of manpower operation.

Conservation and Protection of Tigers in Tiger Reserves: This report, brought out by C&AG in 2006,[15] dealt with one of the most discussed subjects viz. the declining population of tigers in the habitats. Audit study laid bare the tall claims of Project Tiger, launched with such great fanfare and expectation in 1973 'to protect tigers and to ensure a viable population of tigers in India'.

The total number of tiger population in 1984 was 3623 in the country of which 1121 were in 15 tiger reserves created upto 1984. In 2001–02, while the overall population of tigers in the country declined to 2906, that in the tiger reserves went up from 1121 to 1141 in 2001–02—an increase that speaks more of the ineffectiveness of measures taken under the Project Tiger.

Of the several observations of Audit, some more important were:

(i) Against the declared norm of average area of 1500 sq. kms for tiger reserve, the actual area was mostly much less—15 out of 28 tiger reserves had an area of less than half the prescribed area. In six out of these 15, even the core area was less than the prescribed 300 kms. Human settlements existed on 14 of these and what was more alarming such settlements were there in core areas in two of the six tiger reserves.

(ii) There was no system of any monitoring of implementation of the project by the Project Tiger Directorate. It had just 7 people on staff.

(iii) With such depleted strength it was unable to do any worthwhile monitoring. Relocation of families living

within the tiger reserve was not successful for want of resources.

(iv) Approved Management Plans were not prepared in all projects and the central assistance was released without these.

There was some impact of the para on the Ministry. It stated (March 2006) that the core areas of tiger reserves can be increased once the buffer zone are free from disturbances and a National Tiger Conservation Authority (NTCA) with statutory powers was being established to address such issues. NTCA has since been constituted w.e.f. September 2006 as a statutory body after amendment to Wild Life (Protection) Act 2006.

Regarding the annual operational plan on the basis of management plan for each tiger reserve, the Government stated in March 2006 that a Bill had been introduced in Parliament for amending the Wildlife (Protection) Act 1972 for according statutory authority to Project Tiger Directorate and to have a say in the planning process of the State projects.

NOTES: CHAPTER-11

[1] Government of India, Department of Science and Technology OM No. DST/JSF/17(3) (1)/83 dated 28th December, 1983

[2] C&AG's Manual of Standing Orders (Audit)

[3] C&AG's Report for the year ended 31 March 1990 Union Government (Scientific Departments) No. 2 of 1991

[4] Para 10.2 of C&AG's Audit Report (Scientific Departments) for the year ended 31 March 1991

[5] Para 2.1 of C&AG's Report for the year ended March 1992 Union Government (Scientific Departments) No. 2 of 1993

[6] C&AG's Report for the year ended 31 March 1995 Union Government (Scientific Departments) No.6 of 1996

[7] Para 2.1 of C&AG's Report for the year ended March 1998 Union Government (Scientific Departments) No.5 of 1999

[8] C&AG's Audit Report No. 5A of 2000, Union Government (Scientific Departments) Audit Report No.5 of 2004

[9] The other two reviews appeared in C&AG's Audit Report on Scientific Departments for the year ended 31 March 1989, 12 of 1990 (in C&AG T.N. Chaturvedi's time) and Report of the C&AG for the year 31 March 1994, Union Government Scientific Department mentioned in Report No. 5A of 2000 (in C&AG V.K. Shunglu's time)

[10] 26th Report, Public Accounts Committee 2005–06

[11] 26th Report, Public Accounts Committee 2005–06

[12] Para 2 of Audit Report for the year ended March 2003, No.5 of 2004, Union Government (Scientific Departments)

[13] Para 3 of C&AG's Audit Report for the year ended 31 March 1995 No.6 of 1996 Union Government (Scientific Departments)

[14] Para 2 of C&AG's Audit Report for the year ended March 1997 No.5 of 1998 Union Government (Scientific Departments)

[15] C&AG's Audit Report No. 18 of Performance Audit of the year 2006

GLOSSARY OF ABBREVIATIONS

GAP	Ganga Action Plan
GB	General Body
IARI	Indian Agricultural Research Institute
ICAR	Indian Council of Agricultural Research
ITRC	Industrial Toxicology Research Centre
NBPGR	National Bureau of Plant Genetic Resources
NTCA	National Tiger Conservation Authority
PGR	Plant Genetic Resources
PMN	Polymetallic Nodules Programme
R&D	Research and Development