

Science and audit

I was very happy to read the reactions^{1,2} on science audit. Such a dialogue is necessary to evolve appropriate rules, procedures and systems. I hope the healthy discussion can be continued through your columns. May I now clarify some issues that have been thrown up.

The major issue is about delays in achieving the goals. Audit does not comment upon marginal delays or where there are sufficient reasons. But Audit would be failing in its duty if it did not tell the people about substantial delays and cases where science management has been found wanting. Time is of the essence in science and it is one of the parameters for any project or programme. If science managers have not taken all the constraints of the environment into account and an optimistic schedule has been drawn up, it is unscientific and unrealistic, and creates idle assets and causes postponement of the flow of benefits to the people. Sometimes such schedules also result in diversion of resources to a less attractive project among alternatives. Any nuclear power project is a case in point.

As regards institutional delays as distinct from individual or isolated delays, my refrain would be that scientists should devise new sets of rules and procedures that would be specific to their requirements. Thus it is not necessary for directors of various national laboratories to chase the same supplier for repair or speedy supply of similar equipment. A centralized buying procedure or black-listing of bad suppliers should save a lot of time and cost. Responsibility for evolving these rules and procedures lies with the scientific community. In other words, just as modern astronomy cannot be done with ancient telescopes, science cannot be carried on with outdated, 'colonial' rules and procedures.

Now, as regards availability of money, my observations were limited to government scientists and departments. One can see from the Audit Reports on National Laboratories that a mere 5% test-check has revealed any number of unoccupied staff quarters and scientists' apartments in various parts of the country. Similarly, equipment worth crores of rupees lies unpacked for years, or unused after the sponsored research is over. Also, when new projects are drawn up, say under international assistance, new sets of equipment, which are already available, are sometimes again listed for purchase.

When financial grants are made on a liberalized scale, there is excessive expenditure on non-scientific items. I am not against incentives for scientists but idle investments must be avoided.

Regarding excessive control and loss of autonomy, let me assure the scientists that this is because the collegium mode and cluster model have been replaced with empires of science. In sum, was it not the view of Sir C. V. Raman, who belonged to a financial service as well as to the scientific community, that some national laboratories are mausoleums of Indian science? This must be avoided. In addition to science missions, we need missions in science to underpin the era of expansion.

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1. Venkataraman, G., *Curr. Sci.*, 1989, 58, 673.
 2. Pappu, S. V., *Curr. Sci.*, 1989, 58, 782.

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The following quotations may be interest to readers:

'Personally, speaking for myself, I am of the opinion that this dignitary or officer [CAG] is probably the most important officer in the Constitution of India. He is the one man who is going to see that the expenses voted by Parliament are not exceeded, or varied from what has been laid down by Parliament in what is called the Appropriation Act. If this functionary is to carry out the duties—and his duties, I submit, are far more important than the duties even of the judiciary—he should have been certainly as independent as the judiciary. But, comparing the Articles about the Supreme Court and the Articles relating to the Auditor-General, I cannot help saying that we have not given him the same independence which we have given to the judiciary, although I personally feel that he ought to have far greater independence than the judiciary itself.'

[B. R. Ambedkar]

'Ours is a poor country, its resources are limited and we cannot afford to risk any kind of waste, and, therefore, the Audit Department will have to look upon its functions as functions of the greatest public utility by pointing out errors and by showing where and how

we can remove abuses, effect economy, increase efficiency and reduce waste of expenditure'.

[S. Radhakrishnan]

—Editor

ANNOUNCEMENT

FINANCIAL SUPPORT FROM INSA FOR PARTICIPATION IN CONFERENCES

The Indian National Science Academy invites applications from Scientists for partial financial assistance to participate in important Scientific International Conferences abroad during the year 1990-91. Scientists interested to avail of financial support from the Academy for participation in International Conferences to be held during the year 1990-91 are requested to apply in the prescribed proforma. The proforma is available from the Office of The Executive Secretary, Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi 110 002.

The scheme is operated under three different categories, viz. (1) For International Conferences sponsored by the International Council of Scientific Unions (ICSU) and its affiliated bodies (ICSU Conferences); (2) For International Conferences sponsored by other agencies (Non-ICSU Conferences); (3) For applicants who are interested in partial travel assistance only, for participation in any International Conferences abroad. The applicants must be below 35 years of age. This is categorized as INSA-COSTED Travel Grant.

Category 1: Scientist who has been invited to deliver a plenary lecture/preside over a session of a scientific conference or whose paper has been accepted for presentation, and who will also be provided maintenance allowance during his/her stay abroad and partial travel expenses by some agency, will be given preference over others. INSA's financial support, in case of selection is limited to a maximum of 50% International travel, 50% maintenance allowance for the duration of the conference and registration fee, wherever necessary. The prescribed application form duly completed should be despatched **latest by January each year** for consideration by a Committee of the Academy during the year.

Category 2: Scientist who has been invited to deliver a plenary lecture/preside over a session or whose paper has been accepted for presentation and who will also be provided maintenance allowance during his/her stay abroad and partial travel expenses by some agency, will be given preference over others. INSA's financial support in case of selection is limited to a maximum of Rs 7,500/- only. Applications for this category should be received in the Academy for consideration **three months prior to the date of commencement of the Conference.**

Category 3: Under this category the scientist who is interested to avail partial travel assistance only, for participation in any International Conference and is also below 35 years of age may send his/her formal request on a prescribed application form **at least three months prior to the date of commencement of the Conference.** The applicant should fulfill the following eligibility criteria before sending his/her application:

- (a) His/her age should be below 35 years on the date of commencement of the Conference.
- (b) He/she should hold a Doctorate degree.
- (c) His/her paper should have been accepted for presentation.
- (d) His/her local hospitality and partial travel expenses has to be borne by the organisers or some other agency.

Candidates selected will be supported partially for their travel cost, jointly by INSA and COSTED (Committee on Science & Technology in Developing Countries). The applications will be screened once a quarter during the year.