

## EvSum265

### IMPERIAL COLLEGE: IIT DELHI LINK

[The Projects](#) - [The Main Findings](#) - [Lessons](#) - [Related Studies](#)

# The Projects

£601,705 was provided to finance a programme of up to 15 collaborative research projects between British Universities and Departments of the Indian Institute of Technology in Delhi (IITD).

To strengthen the IITD's capacity to help Indian industry through research and development. 14 research and development collaborations were established in the following subject areas:

- Deep sea sonar
- Offshore structures
- Modelling river basins for flood forecasting
- Metal oxides semi-conductor technology
- Chemical reactor development
- Process control and instrumentation
- Gas turbine components
- Freezing preservation of foods
- Instrumentation and techniques for mass health care
- Development of composites with improved properties
- Open-end spinning
- Strength and deformation characteristics of selected rocks
- Optimisation of the metal grinding process
- Numerical models of atmospheric features - monsoon dynamics.

# The Main Findings

A selection of the collaborative research areas was found to conform with the priorities laid down at the start of the programme; nevertheless the team considered that the selection would have been more relevant to Indian developmental priorities had IITD's contact with Government and industry been better and had the latter been more closely involved in assessing the economic and commercial potential of each research proposal. It took 3 years on average to mount each collaboration and the subsequent pace of research tended to be leisurely because of the lack of urgency, equipment delays, and inadequate maintenance. Equipment problems reinforced an undesirable inclination by researchers to pursue theoretical rather than experimental issues. The evaluation team felt that the collaborations inevitably had a long "start-up" time but they argue that the

tempo of research would have been improved by more effective monitoring. Particular care is needed in selecting research equipment; that of an unproven prototype nature should be avoided. The team commended the arrangements whereby LDC research staff gained experience in constructing experimental rigs in a UK University before transferring these to their own Research Departments.

The significant factors determining the success of individual collaborations were found to be:

- the existence of good communications between the collaborators;
- the degree of interest the collaborating UK institution had in the research project;
- staffing continuity, especially among research coordinators.

Given the specialised nature of many research issues, the evaluation team foresaw the need for an academic group to steer future collaborations as Imperial College Delhi Committee had done for this project. However, such a group could not be expected to vet the industrial and developmental importance of the research programmes.

## Lessons

- ODA recognised the need to ensure that future research collaborations have time-bound objectives which are monitored regularly, but it questioned whether an academic steering group was vital for advising on the establishment and running of research collaborations.

## Related Studies

EvRpt231 examined the 1971-81 research collaboration between Birbeck College and IIT Bangalore. The collaboration aimed at stimulating relevant Indian research, raising Indian academic standards and the training of highly qualified Indian chemists. The collaboration provided Birbeck with chemical compounds, ready for analysis on sophisticated equipment, using Bangalore's surfeit of scientific manpower. In research terms the project was a success, attributable to Birbeck staff enthusiasm (as above), the specific and well defined functions of the Birbeck and Bangalore terms and to the engagement of competent, almost full-time project research assistants. There were few developmental benefits. The link had a curriculum development spin-off but with limited practical application. It did not help Indian research needs and the Indian chemists trained by the link found their training work did not lead to work opportunities in India.

See also EvRpt447 (EvSum447) in the Renewable Natural Resources Category. This evaluates a 10 year payment to create research capacity in the Fishery Department of Diponegro University and to improve the undergraduate Fisheries syllabus. The main conclusions are that institutional development projects need a minimum 10 year time frame and a detached project design. Curriculum development is more likely to occur through overseas training of local staff than through TCOs starting courses in situ.