

Teaching and Training Activities at IASRI

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The progress of statistical application to agricultural research has been vary rapid during the past fifty years, and the role played by the Indian Agricultural Statistics Research Institute (IASRI) has been very important, both in research as well as teaching and training in the field of Agricultural Statistics and Computer Application. The Institute earned world-wide recognition for its contribution to agricultural research and for evolving techniques for development of agricultural statistics. In addition to in-service training programmes at national and inter-national levels, the Institute has been contributing towards Human Resource Development Programme by way of conducting M.Sc. and Ph.D. programme in Agricultural Statistics since 1964-65 and M.Sc. in Computer Application since 1985-86 in collaboration with Indian Agricultural Research Institute (IARI), New Delhi. Many foreign nationals have also benefited from these programmes.

In this article, the contribution of IASRI in the area of teaching and training in Agricultural Statistics and Computer Application is reviewed.

1. Degree Courses at IASRI

An important landmark for the Institute was the signing of a Memorandum of Understanding with IARI in 1964. Courses leading to M.Sc. and Ph.D. degrees in Agricultural Statistics started in collaboration with Post Graduate (PG) School, IARI which has got a status of Deemed University. A course leading to M.Sc. degree in Computer Application in Agriculture was initiated from 1985-86 and was subsequently changed to M.Sc. (Computer Application) from the session 1993-94. The Institute was identified as Centre of Advanced Studies in Agricultural Statistics and Computer Application in 1983 by UNDP and subsequently by Education Division of ICAR in 1995.

Course curriculum

The total number of courses in Agricultural Statistics at present is 39 consisting of 104 credits (76 theory and 28 practical). In the discipline of Computer Application, there are total 24 courses with 71 credits (49 theory and 22 practical). The details of all these courses can be seen in our institute's website http://www.iasri.res.in/iasriwebsite/degree_course.htm.

Trimester system is followed with three trimesters, each of twelve weeks duration, in an academic year. Besides the major field, every M.Sc. student has to take one minor field of study (two for Ph.D. students) from other disciplines with atleast 9 credits of course work in each. The students have to deliver seminars and complete a dissertation as a part of the degree requirement.

Faculty strength

At present there is a dedicated team of 31 faculty members of PG School IARI in Agricultural Statistics with 27 members holding Ph.D. degree. 20 faculty members are eligible to guide M.Sc./ Ph.D. students. In the discipline of Computer Application, there are 18 faculty members with 6 having Ph.D. degree and 10 are eligible for guiding M.Sc. students. Some of the faculty members have received Best Teacher Award of IARI.

Degrees awarded

The total number of students who have been awarded Ph.D. and M.Sc. degree in the discipline of Agricultural Statistics till 2009 convocation is 173 and 287 respectively including 10 foreign students (3 Ph.D. and 7 M.Sc.) from Indonesia, Burma, Sudan, Sri Lanka and Vietnam. The distribution of these students in different block years is shown in Fig. 1 and Fig. 2.

The total number of students who have been awarded M.Sc. degree in the discipline of Computer Application till 2009 convocation is 81 including 1 foreign student. The distribution of these students in different block years is shown in Fig. 3.

The students have to complete a dissertation as a part of the degree requirement. The distribution of dissertations in major research areas of Agricultural Statistics and Computer Application is given in Fig. 4 and Fig. 5 respectively.

At present, the number of students pursuing Ph.D. degree in Agricultural Statistics is 11, M.Sc. in Agricultural Statistics is 11 and M.Sc. in Computer Application is 18.

To commemorate the memory of the first Prime Minister of India Late Pt. Jawaharlal Lal Nehru and to encourage healthy competition among the students to excel in performance in their respective courses, the institute introduced two Nehru Memorial Medals, one for the best M.Sc. Agricultural Statistics student and one for the M.Sc. Computer Application every year. One V.V.R. Murthy Award is given to the best student of M.Sc. Agricultural Statistics.

The Board of Studies in the discipline of Agricultural Statistics and Computer Application monitors the progress of all the degree courses organized by the Institute. The members of the Board of Studies are drawn from different levels

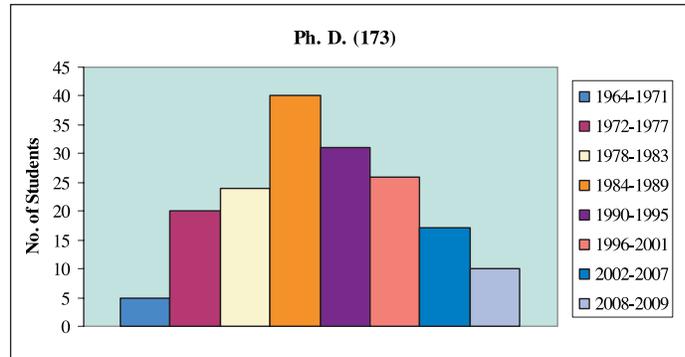


Fig. 1: Distribution of number of Ph.D. (Agricultural Statistics) students over different years

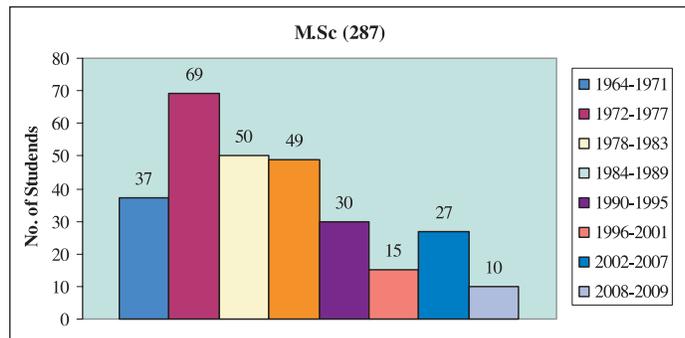


Fig. 2: Distribution of number of M.Sc. (Agricultural Statistics) students over different years

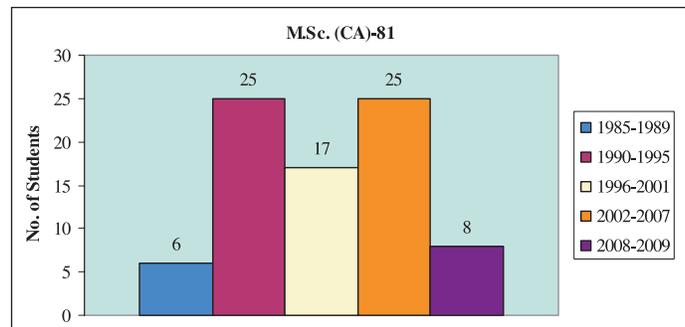


Fig. 3: Distribution of number of M.Sc. (Computer Application) students over different years

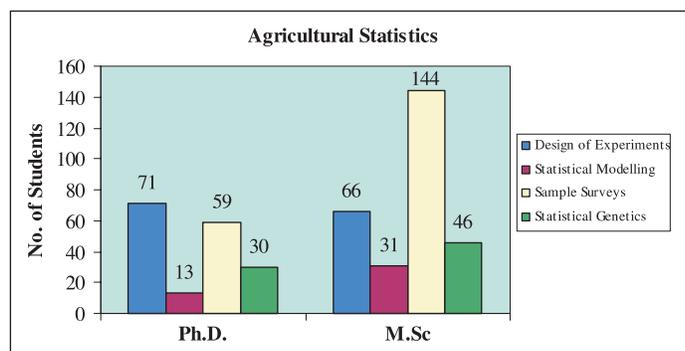


Fig. 4: Distribution of students' dissertations in major research areas of Agricultural Statistics

of scientists and include one member from students. All other matters regarding curriculum development, revision/ modification of courses or any other aspects concerning improvement in teaching are discussed in the Board of Studies.

The Institute has achieved international recognition for its high quality research and teaching work in the field of Agricultural Statistics. A number of students of the Institute are at present occupying high positions in the universities and other academic and research institutions of the country as well as in other countries. Also, a number of research workers from the Institute have served as consultants and advisors in Asian, African and Latin American countries.

2. Other Courses at IASRI

The training activities of the Institute had its beginning in 1945 when two regular Post Graduate courses viz. the Certificate Course and Diploma Course were introduced for Professional Statisticians. Another in-service training of about 8 to 9 months duration called an application course was also regularized. These courses became extremely popular and with the increased demand for admission to these courses the Training Unit of the Institute was established in 1948. During the year 1951, a Short Duration Course of six months duration called Junior Certificate Course was started for the benefit of in-service Agricultural Research Workers from various Institutes/Universities under the Council. To meet the requirements of teaching load most of the appointed statisticians of the institute shared the responsibility in addition to the appointed staff in the Training unit. These courses meant for training professional statisticians and others, who dealt with statistical applications in fields of Agriculture and Animal Husbandry were re-organised into the following four courses:

- (i) Junior Certificate Course of six months duration
- (ii) Senior Certificate Course of one year duration
- (iii) Professional Statisticians' Certificate Course of one year duration in Agricultural Statistics which was recognized as equivalent to Master's Degree course in Agricultural Statistics for employment purpose and
- (iv) Diploma Course in Agricultural Statistics and Animal Husbandry of one year duration which was considered to be equivalent to one year research experience.

The Diploma students were required to present their research work in the form of a thesis which was evaluated and on approval of the thesis, the diploma was awarded.

The Institute had been conducting regularly adhoc Training Courses in Data Processing and Computer Programming for the benefit of Agricultural Research Workers from Institutes under ICAR and Central Agricultural Universities, since 1965 when an IBM 1620 Model 2 Electronic Computer was installed. After installation of a 3rd generation computer system Burroughs-4700 in 1977, the Institute felt that there

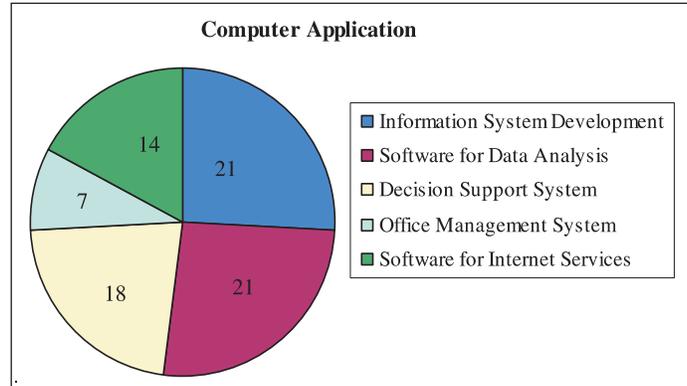


Fig. 5: Distribution of students' dissertations in major research areas of Computer Application

is a need of trained man power in computer programming. Since October 1981, a two years Diploma Course in Advanced Computer Programming was introduced. On the recommendations made by UNDP Key Consultant under the Project of Centre of Advanced Studies in Agricultural Statistics and Computer Application, the Diploma Course in Advanced Computer Programming was discontinued and a regular Master's Degree course in Computer Application in Agriculture was introduced. This was also in collaboration with PG School, IARI.

The total number of candidates who successfully completed the above given courses is detailed below:

Course	Year of start	Total no. of participants
Junior Certificate Course	1946	261
Senior Certificate Course	1955	630
Professional Statisticians' Certificate Course	1960	320
Diploma in Agricultural Statistics and Animal Husbandry	1948	175
Diploma in Advanced Computer Programming	1981	10

The above courses had to be discontinued on the advice of ICAR. The Junior Certificate Course was discontinued from the year 1981. Senior Certificate Course, Professional Statisticians' Certificate Course and the Diploma Courses were discontinued from 1985.

From October, 1983 to March, 1992 the Institute also functioned as the Centre of Advanced Studies in Agricultural Statistics and Computer Applications under the aegis of the United Nations Development Programme (UNDP). This programme was aimed at developing a Centre of Excellence with adequate infrastructure and facilities to undertake advanced training programmes and to carry out research on various aspects of Agricultural Statistics and Computer Application.

In 1985, the following new short term courses, along with the number passed out, were introduced that continued till 1996:

- Refresher Course in Statistics for Agricultural Scientists – 57
- Certificate Course in Statistics and Computing – 13
- Short Term Course on Use of Computers in Agricultural Research – 676
- NARP Trainings – 105
- Workshop-cum-Seminar on Software Development for Extension Personnel – 77

On the recommendation of QRT, the discontinued Senior Certificate Course was revived in 1997 in modified form having two modules with emphasis on Statistical Computing. The participants of this course have the flexibility to do either any one module or both the modules. Institute is getting good response for this course from State Government Departments, ICAR Institutes, State Agricultural Universities (SAUs), SAARC Countries, Commonwealth Secretariat and other Afro-Asian Countries. Since revival, 73 participants have completed both modules, 19 have completed module I (Statistical Methods and Official Agricultural Statistics, Use of Computers in Agricultural Research) and 11 have completed module II (Sampling Techniques, Econometrics and Forecasting Techniques, Design of

Experiments and Statistical Genetics). In Module II, a participant has the option to select any three of the said areas.

3. Training Programmes at IASRI

The institute is involved in the conduct of a number of training programmes for Statisticians/ Agricultural Research Workers. These programmes fall under the following categories:

Programmes under revolving fund scheme

Information Technology (IT) has become a key component for success in this age of information explosion. There is great demand for the trained manpower in IT in view of the rapid developments taking place in IT in general and computer technology in particular. Keeping this in view, under Revolving Fund Scheme, Short Term Training Programs in IT were organised in the emerging technologies. High quality and professional standards at par with the international level were maintained. 908 scientists of National Agricultural Research System (NARS) were trained in the latest developments in IT through organisation of 101 training programmes under this scheme.

Programmes under resource generation

The courses are designed to upgrade the professional skills of agricultural scientists, technical staff and administrative personnel in IT. This provides an opportunity to the participants to have an exposure to computer technologies and exchange of ideas in use of computers in agricultural research. The training also helps in increasing the productivity of participants. The group discussions provide fora to discuss and identify the gaps in the existing software for solving specific research problems.

International programmes

The International training programmes are offered to share the technical expertise and experience of IASRI with the working professionals from the developing / under developing countries by offering a variety of courses in Agricultural Statistics with hands on experience of statistical data analysis on computers using statistical software packages.

Training programmes under Centre of Advanced Studies

Centre of Advanced Studies (CAS) on Agricultural Statistics and Computer Applications was established at the Institute during VIII Five-Year Plan as a part of Human Resource Development Programme. The basic objective of the Centre is to develop trained man power in the field of Agricultural Statistics and Computer Application. These training programmes cover specialized topics of current interest in statistics, Computer Application and Agricultural Sciences. The courses under CAS are restricted to the Scientists of Indian Council of Agricultural Research Institutes and SAUs in India.

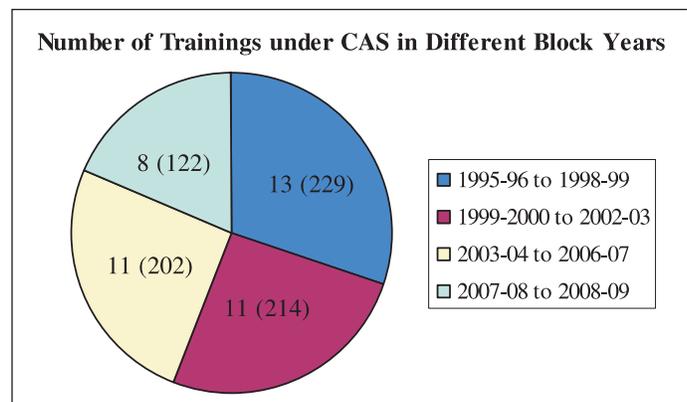


Fig. 6: Distribution of number of CAS trainings over different years along with the number of participants (in parenthesis)

The total number of trainings conducted under CAS in Agricultural Statistics and Computer Application are shown in Fig. 6. 767 scientists/ teachers/ researchers from different disciplines of Agriculture and from ICAR institutes and SAUs have successfully completed this training.

Customized training programmes

On specific request, the training courses are also organized suiting the customized needs of various organizations and institutions depending on the available expertise and the training facilities. The timing of such courses is decided keeping in view the availability of infrastructural facilities at the Institute. The course fee and other charges are finalized keeping in view the specific requirements of the programme. A series of training programmes have been organized for scientific personnel of Indian Council for Forestry Research and Education (ICFRE). Training have also been conducted for Indian Statistical Services probationers and senior officers of Central Statistical Organization. International training programmes on specific topics are arranged on request from the international agencies like FAO, AARRO, UNDP etc.

Students or participants undergoing training at Indian Statistical Institute, Calcutta and Central Statistical Organization, Govt. of India and a few other organizations visit the Institute for a couple of days as a part of their training programme every year. A suitable training programme is also organized by the Institute for them to acquaint with important research programs of the different divisions.

Seminars are one of the regular activities of the Institute. Every week seminars on relevant topics in Agricultural Statistics or Computer Application are delivered by staff and students of the Institute as well as occasionally by eminent statisticians or computer experts from India or abroad. This provides a good opportunity for students and research workers to exchange ideas on topics and problems of current research.

The Institute has several computer laboratories well equipped with latest hardware and software packages along with modern teaching aids. The e-library has rich collection of books and journals on Statistics, Computer Science and other related disciplines including on-line journals and bibliographic databases. The Institute has following two hostels:

- **Panse Hostel:** It caters to the requirements of training programmes as well as visiting scientists/ staff in the NARS.
- **Sukhatme Hostel:** It caters to the requirements of PG Programme. It has well furnished rooms, dining facility, common room, gymnasium and outdoor sports facility.

The hostels are managed under the supervision of a Warden who resides in the IASRI Campus. An International Students' Hostel will also be added very shortly in the list of hostels.