

R&D has become an important tool in the development and leveraging of S&T sources. Actually, links between industry and academia are increasing. The report is improving all the time. The quality of the text and the voluminous data provided in the tables are improving. How I wish a similar document is produced for S&T in India! The entire volume is available in electronic form at <http://www.nsf.gov/sbe/srs/stats.htm>.

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**Basic Demographic Techniques and Applications.** K. Srinivasan. SAGE Publications India Private Limited, M 32, Market, Greater Kailash I, New Delhi 110 048.

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Demography refers to the study of human populations, their size, structure and development. The data required for demographic studies began to be available only in the eighteenth century and that too in a few countries. The population census is the core of demography and gives a picture of the total population and some of its characteristics at a given point of time. Sweden is credited with having taken a population census in 1749; the United States in 1790 and England and France in 1801. It is only when the census data can be studied together with vital statistics that the factors related to the dynamics of population in time and space can be well understood. England passed the registration of Births, Marriages and Death Registration Act in 1837 and the beginnings of registration of births in any country dates back to that time. Even in the United States, birth registration was poor till 1915 when the Bureau of Census set up the Birth Registration Area and made a successful attempt to improve registration of births.

With the setting up of the Population Commission by the United Nations in 1946 and with the technical and the financial assistance provided by many donor agencies, there has been signifi-

cant demographic developments even in the developing world. A population census is now taken once in ten years in practically all countries in the world. There has been a considerable increase in the number of demographers in many developing countries because of the training centres set up with the assistance of the United Nations. Unfortunately, the registration system has not worked satisfactorily in most of the countries. Demographic techniques to estimate birth and death rates have been evolved by researchers and at present we have some knowledge of the demographic situation in most parts of the world.

According to the author, K. Srinivasan, the book *Basic Demographic Techniques and Applications* is based on 20 lectures and 10 laboratory exercises that he gave to graduate students in the Executive Programme in Health and Population for developing Countries (EPDC). That the course addressed itself to the topics related to health and population is apparent from the contents of the book despite the title given to it being restrictive making no reference to health management.

Health measurement is in itself an arduous task and even if this subject had been handled in other courses given by EPDC, a certain amount of effort identifying the methodologies emphasized by the health experts would have assisted the lecturer in tailoring his lectures in demographic techniques to meet the essential needs of health management. Some health topics such as AIDS and family planning are no doubt mentioned and the problems that would arise in their control are also stated but their relationships to specific demographic techniques that would be relevant have not been brought out. A lecture course entwining two topics like health management and demographic techniques calls for a closer liaison between the two topics.

Looking into the contents of the book, the reader will observe a straightforward, sequential presentation of indices and formulae that is now the practice in any textbook in demography. That the book does not stress the problems that arise in dealing with the demographic data of developing countries is clear from the frequent suggestion it makes for reference to *The*

*Methods and Materials of Demography* by Henry S. Shryock, Jacob S. Siegal and Associates which for the most part use the statistics of the United States for illustration. A large part of the book is used for the numerical application of the demographic techniques explained in it to the 1991 data of Kerala. Whether so much space should have been devoted to illustrate the methodologies described is a moot point which requires consideration in any attempt to revise the book. It is the reviewer's view that the average reader would have gained more if the author had cited data from different countries or made mention of the changes that had occurred in demographic characteristics in some countries, so that the reader could appreciate the usefulness of demographic analysis.

One of the strengths of the book is the references the author has made to publications not so well known as the *Demographic Year Book* and the *Population and Vital Statistical Reports* published by the United Nations. Passing references to important demographic publications made in the book would assist the intelligent reader to broaden his knowledge to the techniques the book provides. The book can only be considered as an introduction to demographic techniques and can be useful for students undergoing courses in vital statistics or students in economics or sociology who need to have some idea of demographic techniques. It is doubtful if it will be of much use for students who have enrolled for training in demographic institutions.

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**Biomass Energy Systems, Proceedings of the International Conference.** New Delhi, 1996.

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Publishing the proceedings of a conference is now a routine affair. I wish someone went through the economics of this routine and found out the cost-benefit ratio. Among all the renewable resources, time is, in my perception, the

least renewable. Time spent is gone forever. The job of editors in such publications is unenviable, but I feel there is need for using more modern information technology to make better use of such conferences.

The book gives some information on every aspect of the subject and to that extent it is very useful. But searching for the good stuff is difficult, because there is also a lot of less useful or even mediocre material. This makes the editor's job difficult, he has to include every paper presented at the conference, which have their own economic priorities. The other problem is there are papers on diverse subjects, from purely academic to those that describe the commercial performance of a plant and some only giving a concept or rather a desire.

The introduction to most papers spends a lot of space on the importance of biomass, energy and so on; these are repetitions in almost every paper, and I wish there was a way to eliminate these in the publication. The biomass, supply and demand and policy issues take up the major part of the book, almost one third. I found this the least interesting and could find no new issues.

The depressing fact, not a reflection on the organizers of the conference or this book, is that in the last 20 years, the progress as seen by the papers has been negligible. The section on biomass processing and liquid fuels is an example. From this point of view, the section on municipal solid wastes is refreshing. It shows much more change, relatively.

It is sad to find that the few papers that give actual data from a commercial plant operating in India are based on imported technology. Worse still, 'developing countries would require not only foreign technology but also foreign investment' (K. C. Khandelwal, *MNES*, p. 308). D. V. Kulkarni gives a paper on power generation from municipal solid wastes, through biomethanation. The paper is delightfully vague in saying how far the plant he describes has been erected and is performing.

The paper by M. Sen and R. K. Datta of Burn Standard Co. Ltd. is better. It describes pilot scale experience on cylindrical traditional digesters working on low total solids (10%) and then gives the performance on plug flow type horizontal digesters with total solids of 30-

35%. Again the paper does not say explicitly the size of the pilot scale operation but uses terms like 'This approach leads to the use of a biodigester of 200 cu m volume to handle 50 tons/day of MSW for producing 300 kW of electricity'. Does this mean the earlier results are lab scale and this will be the pilot plant? Annexure to the paper describes 700 kg (per 6-7 hours?) for 5 kW plant. Hopefully this pilot plant is running routinely.

The biomethanation of prehydrolysate liquor plant, operated for at least one year commercially, is new but similar to the technology for sugar factory wastes, already reported by the same company - Western Paces, elsewhere. This is the foreign technology that is operating in India.

I recall the comments of Richard Feynman, 'For a successful technology, reality must take precedence over public relations, for Nature cannot be fooled.' This is probably relevant to our situation as well.

Now to the question I raised at the beginning, can we not use modern information technology for such conferences and make the work more efficient and at lesser costs? I feel it can be used and I am making the following specific suggestions.

1. Like poster sessions in some of the seminars, a few multi-media computers should be set up at the conference site, and participants should be encouraged to make multimedia presentations on these. The presentations will be far better than the slide and talk presentations with their constraints on time and failures in slide/OH projectors, etc. Even key video shots can be included in such presentations.
2. The main papers should also be multimedia presentations on the computer, but projected on to a big screen. (Alternatively, a cheaper way is to connect multiple monitors at different locations, as we do for loudspeakers.) Not only can such presentations be brief and precisely timed but they also communicate better.
3. The main papers, as also poster sessions will have live discussions.
4. The editing and publication job becomes easier, faster and less expen-

sive. The papers are already on the computer, along with pictures, video, etc. The editors and DTP men will take over and combine the total information in HTML (giving the so to say 'live' cross-references). This will take much less time than the usual 1-2 years delay between the conference and the publication of the proceedings.

5. Finally, these proceedings should not be published as paper editions, but as CDs. Those who want paper editions can get prints from the CDs at any library.

The above will not only save time, money and paper but also the invisible cost of unsold volumes, taking up space and then given away as complimentary copies. The CDs are not only easier to use and store and communicate better, but are also easily distributed and stored. The CD costs have come down so drastically that today it is possible to 'write them' as per order and not necessarily printed in 500 lots.

Unless we start using the IT to make our work more efficient, we will have the same stereo type conferences and publication ritual for decades.

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**Cellular and Molecular Biology of Gonadal Development and Maturation in Mammals: Fundamentals and Biomedical Implications.** S. S. Guraya, Narosa Publishing House, New Delhi. 1998. 346 pp. Price: Rs 550.00.

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There has been a great deal of interest in understanding the process and regulatory mechanisms involved in gonadal sex differentiation and development in vertebrates since beginning of the century. The continued interest in the subject with the application of advanced technology has resulted in a vast number of publications and reviews on different aspects of gonadal differentiation and development. S. S. Guraya has attempted to integrate the enormous amount of information that is generated