

Revival of the Centre for Studies in Science Policy at Jawaharlal Nehru University, New Delhi

Presently, India spends about 0.92% of its Gross National Product (GNP) on Research and Development (R&D) in Science and Technology (S&T). How these funds can be managed resourcefully is the key issue.

Patterns have to be generated using the experiences of the past while evaluating the present, in providing viable tactics that harness innovations and research in S&T. In order to achieve this goal, there must be in place sound science policy initiatives, for steering towards concerted and efficient action, to better utilize our capital, be it financial, human or natural in origin. In India after the Scientific Policy Resolution was passed by the Parliament in 1958, there was a Technology Policy Statement (TPS) announced by the Government in 1983. Then, the draft of a new TPS was prepared in 1993. However, it did not see the light of day. It is therefore imperative that a new S&T policy be framed (presently said to be at a draft stage). The policy needs to accommodate the fast-changing situation globally, the liberalized economic environment prevailing in India and the new initiatives the Government of India, industry and the S&T community have taken in the decade of the nineties. Our limited S&T resources have to be wisely invested through a decision-making system which takes a holistic approach to address social, economic and security issues to which S&T can make significant contributions.

That is how S&T policy can lead the way. Therefore any academic programme that imparts education and undertakes research in science policy, gains significance. Such a programme would provide for the making of a band of trained personnel drawn from a variety of disciplines, who can think in an objective manner how resources ought to be managed, guiding S&T research in synergy with the nation's social, economic and security goals.

The Centre for Studies in Science Policy (CSSP) at Jawaharlal Nehru University (JNU), New Delhi began its pursuits to impart education and undertake research in Science Policy in 1972,

when the concept was still in its infancy. During the years 1971–1977, students from diverse academic background were admitted and the topics covered science policy issues relating to different sectors such as agriculture, energy, health, rural development, communication and transportation. However, for a variety of reasons there was a freeze in the admission of students in the late seventies and no academic expansion was undertaken. The Centre was revived only in 1996 with the induction of new faculty. Since then, the Centre has undertaken restructuring of its course contents, keeping in view the present and future needs of science policy makers. Presently, this is the only university undertaking teaching and research, awarding M Phil/Ph D in Science Policy studies in the entire South Asian region. The direct Ph D programme was launched in 1998, followed by the M Phil programme two years later.

Over the last one year, the Centre has moved into high gear on many fronts. According to Ashok Parthasarathi, who had joined the Centre in March 2000, not only has the entire physical infrastructure been steeply upgraded, but a particularly bright crop of M Phil and Ph D students have joined the Centre. Having been instrumental in obtaining a fairly substantial amount of funds as core financial resource for the Centre that has made many developments possible, Parthasarathi, has proceeded to acquire specialized databases on S&T policy, planning and management, a multimedia system and a website. These are all expected to be operational later this year.

The broad objectives of the Centre are to conduct teaching, research, training and consultancy in a strongly interdisciplinary field, for the generation of empirical and theoretical knowledge, leading to enhancement of the understanding of the interactions between science, society, technology, economy and nature. The specific objectives of the Centre are:

(i) To enable students to move from disciplinary orientation to an inter-

disciplinary research environment and impact holistic education.

- (ii) To enhance the problem-solving capacity of students and emphasize skill formation to handle policy issues with high S&T content.
- (iii) To train professionals drawn from different disciplines such as science, engineering, medicine, social science, law, management, etc. for various academic, government, private and international organizations.
- (iv) To undertake research, training and consultancy in areas of S&T of national priority and evolve relevant databases, methodologies and policy frameworks for S&T policy, planning and management.

A Centre such as this, operating in an academic environment but training personnel from varied fields (including those from neighbouring countries), provides an important handle for formulation of S&T policies. The prevalent situation around us, of depleting resources, population explosion, socio-economic disparities makes one wonder about the effectiveness of S&T to solve issues that confront us. Inflow of large foreign direct investment as well as technology need to be carefully evaluated, for ruling out any possible increase in problems that the country might face. India has built up a considerable S&T infrastructure base in comparison to other developing countries. In the liberalized economic environment, with increasing globalization, thrusts on export promotion and competitiveness in advanced technology through domestic R&D and technological innovation are essential. Four components that in some measure influence all S&T policy decisions have to be more equally represented. These are the political and bureaucratic, industry/market forces, academia and the science movement and people's voice in the form of NGOs (ref. 1).

S&T policy, planning and management can be a definite career choice. According to the centre, 'Students of science policy can hope to find place-

ments in government agencies dealing with S&T policy and planning, consultancy firms, NGOs, academic and research institutions and international organizations.'

In conclusion, these are the various views expressed by the faculty. Pranav N. Desai stated, 'The Centre equips students to build a comprehensive framework to deal with S&T issues, their analysis and formulation of new policies in actual situations. The narrow confines of disciplinary boundaries are broken at the Centre and there is exposure to both basic and applied social science skills, tackling S&T issues where social sciences are having a part to play'. V. V. Krishna said that a 'scientific discourse on Innovation Policy' is the need of the hour. He felt 'S&T policy must have a social science perspective, in order to catalyse and strengthen S&T in the developing world'. He also felt that the problem with the formulation and growth of S&T policy was the need to make the transition from R&D to Innovation Policy, wherein nodal agencies such as the

Department of Science and Technology should play a pivotal role. It is necessary, he added, to address S&T policies with a strong academic base in Social Science, strengthening the Science–Technology–Society interaction. A. Vasantha emphasized the requirement to generate teaching materials in the field of Science Policy studies. She said that awareness of Science Policy should be incorporated in various in-service training programmes, especially for school and college teachers, where a beginning has been made. Interaction between the various Schools within the University and the Centre could also contribute to enhanced Science Policy awareness. According to Vasantha, 'Science policy is a social policy and should not involve scientists alone, but should be formulated along with social scientists'.

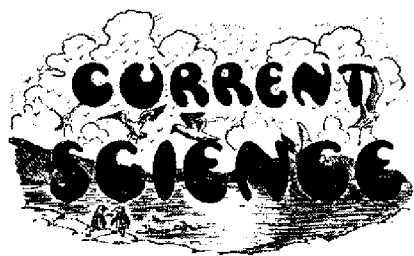
Says Parthasarathi, who became Chairperson of the Centre in August 2000, 'what we are targeting is to be a world-class Centre in S&T policy research area by 2005'. It is hoped to achieve 'world-class research for do-

main problems of the Third World'. For a start, the Centre has begun a M Phil in 'Dynamics of technology evolution in Indian industry', a programme on 'S&T in Energy Policy', the designing of the 'Office of research grants, industry collaboration, consultancy and intellectual property' for the university and a 'University–Industry interface' project that seeks to examine how the University and industry reacted to their relationship in the new economic environment. The revival and rebuilding of the CSSP at JNU augurs well for the S&T system in the country. Whether a 'new' CSSP will perform at the level its faculty seek, is a key question? Only the future will provide an answer.

I. Krishna, V. V., in *Futuribles*, Paris, 2000.

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FROM THE ARCHIVES



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Economic ornithology in India

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A charge that has been preferred against ornithologists in India, perhaps not altogether without reason is that they have been, and are, far too busy 'classification-mongering', i.e., quibbling over morphology and taxonomy, to bother about the *living* bird. Upto a point it may be argued in their defence that before biological studies on any group of animals can be undertaken it is essential that the forms belonging to that group should first be properly classified

and made cognisable. But while acknowledging the sterling work done in this direction by ornithologists – wholly European – during the last century and still being carried on by their torch-bearers to-day, there is no doubt that the various other aspects of Indian ornithology have suffered a corresponding neglect.

The Indian Empire encompassing as it does an infinite diversity of climates and physical features – ranging from the eternal snows of the Himalayan peaks to the torrid deserts of Rajputana and Sind – contains an avifauna that for richness and variety can scarcely be rivalled by areas of similar size elsewhere in the world. The total number of species and sub-species so far described is just over 2,350 (including about 350 winter visitors) and more are being added to the list as fresh material from insufficiently worked areas or groups becomes available. Notwithstanding this prodigality of material, our knowledge of the living bird in India is surprisingly meagre. Beyond the barest facts about the nests and eggs of most (but still not

all) of them, we know practically nothing concerning their breeding biology. The study of migration – one of the most engrossing of bird activities and one that has stirred Man's wonderment from the earliest times – is here still in its veriest infancy compared with the researches and the strides being made in Western countries. Bird ecology, despite the vast natural facilities, remains practically an untouched and virgin field, while Economic Ornithology – an aspect of bird study that should have been, if for purely materialistic reasons, one of the foremost to receive attention in an agricultural country like India, has not even been scratched on the surface.

Besides being a source of direct food supply to millions of human beings in this country, it is little realised that wild birds stand in a class by themselves – second only, if at all, to predaceous and parasitic insects – as destroyers of, and natural checks on, harmful insect pests and other vermin, and as agents in the cross-pollination of flowers and the dissemination of seed. Directly or