

National Conference on Innovations in Indian Science, Engineering & Technology 2006 – A Report

Under the auspices of the Swadeshi Science Movement of India, Delhi (also called as Vigyan Bharati, Delhi), a National Conference on Innovations in Indian Science, Engineering & Technology has been conducted in the IARI, Pusa on Nov. 24-26, 2006 which has the perspectives in line with the aims & objectives of the society (www.swadeshisciences.org) to generate a wave in the country to bring about sustainable development through the interface of traditional knowledge/ancient wisdom with the modern knowledge. The programme was supported and sponsored by the All India Council for Technical Education, ICAR, AYUSH - Ministry of Health & Family welfare, Department of Science & Technology, CSIR, ICMR, ICSSR, ICMR, DRDO. Over 350 delegates from different parts of the country participated and converged on the chosen thematic topics in the conference using the National language “HINDI”. Inaugurating the Conference Prof. R S Nirjar, Formerly President, I.S.T.E. and Chief -Guest of the function raised the fundamental intensions of the society for not only the National movement but also for the build-up of a mass movement for attaining self-sufficiency and national re-construction. Prof. K I Vasu, Formerly Director, CECRI (CSIR) and the National President of Vigyan Bharati highlighted the functioning of Vigyan Bharati in various states and elaborated on the implications of philosophical sciences as well. Enumerating the proceedings of the conference,. Justice Sri. S N Kapoor, Member-National Consumer Disputes Redressal Commission, GOI talked about the hostile discrimination against little Science with specific reference to the National Innovation Foundation, IIM, Ahmedabad wherein big science gets a budget of thousands of crores, the little science responsible in contributing to the survival of millions, gets hardly 1.5 crores. Being a good astrologer, Justice Kapoor lamented to discipline those Tantrik, Mantrik & others who exhort money in the name of oriental sciences who need to be regulated. Prof. K Bijay Kumar, Chairman, CSTT, GOI stressed on the use of Hindi for making science as the mass commodity instead of class commodity through the use of English. Science is a cultural related term and therefore we need to amalgamate our sanskars (values) both with the language& Sanskriti (cultural characteristics) for the sustainable development of any nation. South Korea, Hongkong, Singapur and Taiwan have been able to show fast progress by virtue of their hard work and innovativeness embedded with unique cultural characteristics, Prof. Kumar further added. Prof. Chandra Shakher, President, Vigyan Bharati, Delhi presented mementoes to the Chief-Guest and the Guest-of-Honour.

Prof. Murli Manohar Joshi, M.P. (Rajya Sabha) & Chairman, Parliamentary standing committee on commerce is the Chief-Patron of this Conference. Supplementary features of the conferences have been the conduct of the very unique “Kavi Sammelan” by the National level eminent scholars led by Sri. Uday Pratap Singh, M.P. (Rajya Sabha) and the AGM of the society on 24th Nov. and 25th Nov. 2006 (evenings), respectively.

Dr. D P Bhatt, National Coordinator of the conference pointed out that 200 research papers have been presented at the conference covering different subjects ranging from Physical, chemical, biological, environmental, earth , forensic, Agricultural sciences & allied areas, Water, Ayurved, medical astrology, natural resource management, Engineering & technology, etc. He spoke on the main thrust of the conference which is on the Innovations in indigenous Sciences and technologies including. It is our endeavour to address the innovative human resource of the grass root level people including artisans, craftsmen, farmers and tribals; promote, preserve & modernize their skills and make them economically strong through inputs of modern science & technology integrated with the traditional knowledge who are in fact the true reflection of the spiritual and the material facets of our culture and civilization, Dr. Bhatt further mentioned. The challenge to connect a vast reservoir of innovations by the invisible informal sector (around 10%) to the visible formal/established sector(around 90%) that are exposed to modern science and innovate in a formal way, towards making Bharat innovative and a global leader in sustainable technologies has been one of the end objectives of this conference. Justice Sri. S N Kapoor released the 338 -pages bilingual (in Hindi & English) Souvenir brought out on the occasion which was divided into 4 broad chapters :

- Ancient Science, Traditional knowledge, IT and Indigenous developments
- Physical Sciences
- Environment & Natural Resource Management
- Agriculture & Biotechnology.

The technical programme was conducted in 10 sessions organized in parallel sessions.12 invited talks were arranged. Poster presentations of around 100 papers were also made. The technical sessions were chaired by Prof. K. Bijay Kumar, Chairman, CSTT, GOI; Prof. N. Bhattacharya, Formerly in V E C, Kolkata; Prof. K I Vasu, Formerly Director, CECRI; Dr. S K Sharma, Director, NBPGRI, Delhi; Prof. R P Badoni, UPES, Dehradun; Dr. Shailaja Naik, UAS, Dharwad; Dr. S.C. Nath, RRL, Jorhat and Prof. B.G.Matapurkar. The conveners of the sessions were: Drs. Veena Gupta, Sushila Kaul, Sudarshan Ganguly, R.K. Sharma, S k Dhawan,

In the valedictory function at 3.30 P.M. on 26th Nov. 2006, selected Puraskars have been bestowed to few nationalistic persons both in the grass root level (informal sector) & the higher level of formal sector through Dr. T Ramasami, Secretary, Govt of India, Department of Science & Technology . One such highest award of our forum viz. Swadeshi Vigyan Puraskar was given to an eminent Scientists, Prof. R B Singh, NCF, GOI and Former Director, IARI, Pusa who has prepared the roadmap in converting the green revolution into a sustainable "ever green revolution" during 3 decades of service by developing leading varieties of wheat, raifed crops and other crops towards the alleviation of hunger and poverty in India. Arya Bhatt Puraskars were given to 2 persons viz. Dr. Gopal Chadha, Nagarota Bagwan, H.P., Sri. Jagat Singh Chaudhary, Rudraprayag, Uttaranchal for their works on who have contributed immensely in

the area of popularization of traditional Indian knowledge, particularly Ayurved and sustainable development through a unique model of forest cultivation by growing medicinal & other plants at a remote & dry land at the height of 4500 ft., respectively. Arya Bhatt Samman were given to the limited innovative products and best presentations exhibited during the conference. The names are: Dr. S. M. Mathur, Asso. Professor, College of Technology & Engineering, M.P. University of Agriculture & Technology, Udaipur; Dr. Sudarshan Ganguly, IARI, Pusa; Dr. S N Maity, CMRI, Dhanbad; Dr. Piyush Pandey, CAZRI, Jodhpur and Sri. Lalchand Madhwani, Raipur.

Major Achievements of the event:

Really a grand success has been in terms of (i) having an interface of the developmental works in the different areas of Science, Engineering & Technology amongst the non-formal sector, grass root innovators and the formal sectors such as ICAR based organizations, CSIR, universities, etc. (ii) having a very good participation from these sectors from different parts of the country, (iii) identifying some good technologies both in the health & Agriculture mandate relates issues and other areas of National / social concern and (iv) giving away awards to both Nationalistic persons & the Swadeshi technologies wherein the top award was bestowed to an eminent scholar involved in the R&D of Agriculture for more than 3 decades.

Panel observations/recommendations:

At the end, it was resolved to boost the present need to focus further in the paradigm of development towards sustainable development which arises because most of the development in the present context relates with the growth based on market driven economics, often at the cost of nature. In order to bring about the success stories of say the green revolution, we already paid the heavy price in terms of huge expenditure, employed the western technology, made very big dams for irrigation, used chemical fertilizers & insecticides on a large scale, established an equivalent big infra-structure in the agricultural universities for the research support. On the other side, very less input has gone in the direction of the sustainable development using Desi seeds & organic farming. As a remedy of the ill effects of green revolution, Biotechnology is being proposed which is actually more dangerous than green revolution according to one modern school of thoughts. This had actually led to the suicidal cases of many farmers in the country. However, biofertilisers are said to occupy significance as they are considered economical & eco-friendly to the farmers. Employment of organic manures, desi seeds and other natural means of agriculture like wormi culture is the other alternate option. Global demand for organic products is rising and drives a 22 billion dollar a year market. All this as dealt with in the conference, need attention both by the Govt. & other sectors. Animal sciences alongwith the specific reference to Kamdhenu Krishi Tantra (Go-vigyan) have been on our focus in the deliberations. More than 95% of our investments in health have been

in the allopathic system of medicines. 80% of our health care resources are utilized in urban areas where barely 20% of the population lives. We have thus not been able to cater the health care coverage to large % of our population even in the urban areas till now. We therefore need to adopt a fundamentally different approach to ensure Health for our people. People world over have used, for millennia and even today, medicinal, medicinal plants and other locally available resources for management of their health care including say use of plant pathology in enhancing agriculture production & managing pests & diseases using both traditional and modern eco-friendly bio-control methods, nutraceuticals and traditional/functional foods. By a conservative estimate, an annual value of world market of herbal drugs is more than 60 billion US\$ and it is estimated that by the year 2050 A.D. the annual world trade in medicinal plants will touch 6 trillion US\$. As per WHO estimates, 80% of the world population from developing nations, depends upon traditional medicines for their primary health care needs. With the rich biodiversity and heritage of using herbal drugs, India can capture a sizeable share of this global market, it is estimated.

A few Technologies identified / ready for release are:

(i) The indigenous developments of Entomopathogenic nematode, *Steinernema thermophilum* by Sudarshan Ganguly, IARI, Pusa is likely to become a reality for Farmers towards widespread use under field conditions for incorporating in the integral pest management schedules.

(ii) The technology for chopping and crushing of water Hyacinth as developed by the college of Agriculture & Technology, Udaipur is ready for installing on the aquatic weed harvester or on the bank of lake or river.

(iii) Value addition in the yarn strength and fibre pigmentation was successfully done by Shalaja D Naik et al from UAS, Dharwad. This was subsequently washed especially with alkaline detergents which gradually improved the colour and broke the monotony of single colour (brown), the traditional needle work enhanced the ethnicity and elegance for use in handloom sector.

(iv) Air water electric plant development which is based on mainly water and air, can produce electricity on large scale and is environment friendly. This needs protection as patent & further improvement.

(v) Design & development of Tsunami shields: Lightest floating device of only 100 gms. was done by Dr. SN Maity & Mr. K. Ganguly which has been successfully demonstrated for any high rise floods caused by cyclones or seasonal rains as a means of life saving device. It is the cheapest device costing around Rs. 300/- and it can make afloat a person of 200 Kg. Weight. This needs protection as patent before wide spread commercialization.

(vi) Identified an innovative development of "Mixed Forest Agriculture" by the non-formal grass root individual effort of Sri. Jagat Singh Chaudhary, Rudraprayag which can meet the requirements of fodder, fuel

and economic development of women and strengthen the sustainable agriculture and biodiversity in high altitude areas, particularly Uttarakhand which needs the attention of the formal sector (s) for better utility.

(vii) To combat the problem of Cancer, patented technology of Go-Mutra by Go-Vigyan Anusandhan Kendra, Nagpur could be a boon in the longer run. Kamadhenu Kitniyantrak as developed by the same Kendra has been identified for its' use on all types of crops, green vegetables, fruits, saplings of flowers, etc. The traditional Go-vans based technologies of the Go-Vigyan Anusandhan Kendra, Nagpur and several modern technologies of the ICAR sector therefore need closer interaction /collaboration for a better outlook of viable Swadeshi Technology.