

Proceedings of the workshop on “Two Day Sensitization Programme for the Northern Region: Focus- Science and Technology for Women”

Venue: Holiday Home, Shimla

Dated: 8-9 September, 2017

Himachal Pradesh Council for Science, Technology and Environment, (HIMCOSTE) Shimla in collaboration with, Science for Equity, Empowerment and Development (SEED) division, Department of Science & Technology, Govt. of India organized a two day workshop, “Sensitization Programme for the Northern Region: Focus- Science and Technology for Women” on September 8-9, 2017 at Hotel Holiday Home, Shimla, Himachal Pradesh. The objective of the workshop was to generate awareness and promote societal schemes of SEED Division of DST, GOI among women scientists, researchers and officials and also to focus on sustainability of women in northern region of the country. A total of 58 women scientists/ researchers/ officials attended the workshop out of which 25 delegates were from northern India and 43 were from Himachal Pradesh.

The programme commenced with the welcome address by Sh. Kunal Satyarthi, IFS, Joint Member Secretary, HIMCOSTE where he discussed the conditions of rural women of the northern region of the country who spend most of their time in traditional household chores.

He stressed that the participation of women in DST programmes should be promoted and they should be empowered through S&T interventions to alleviate



their socio-economic status. The Chief Guest to the occasion was Mrs. Archana Sharma, IFS, Director, Department of Environment, Science and Technology who inaugurated the workshop. She highlighted that the involvement of women in Science and Research field in the country is very low and there is a need to encourage women to pursue career in these fields. She also stressed upon the need for popularization of government schemes for women in the rural areas of the state. The rich traditional knowledge possessed by these rural stakeholders can be streamlined through science and technology interventions and can be utilized for their social upliftment.

Guest of honor Mrs. Indu Puri, Scientist E, SEED, Division, Department of Science and Technology, GOI narrated the theme of the workshop. She also described various activities carried out by SEED division of DST and talked about the centralized role of women in every sphere of life and mentioned the need to promote women friendly technologies, location specific interventions to alleviate their poor conditions.

A large number of women from research institutions, universities, colleges and non government organizations from different states of north India participated in the workshop and envisaged deep interest in various programmes, case studies, success stories and other issues discussed in the event. The purpose of organizing this workshop was to sensitize women in science and technology.

After the inauguration of the workshop, the sessions proceeded with the following themes:

S. No.	Title	Expert/Scientist
1	Empowering Women: Enabling Socio-Economic Development	Dr. Rashmi Sharma, Scientist E, SEED Division, DST, GOI, New Delhi
2	S&T connect to society: SEED initiatives and achievements	Dr. Sunil Aggrwal, Scientist E, SEED Division, DST, GOI, New Delhi
3	Prospects of fermented foods and other value added products from natural resources: Potentials and enchantment of livelihood of common people	Dr. O.N. Tewari, Senior Scientist, Center for Conservation and Utilization of Blue-Green Algae, Division of Microbiology, Indian Agricultural Research Institute, New Delhi
4	S&T for women: Initiative and expectations	Ms. Indu Puri, Scientist E, SEED Division, DST, GOI, New Delhi
5	Success story of Women Technology Park developed by Gramin Vigyan Kendra in Digod of Kota district of Rajasthan	Dr. Rekha Saxena, Project Director, Society for Environment and Development (SED)
6	Women health and nutrition	Dr. Kumud Khanna, Former Director, Institute of Home Economics, Delhi University
7	Livestock, poultry farming and farm animals rearing by women	Dr. Rajeev Gulyani, Principle Scientist (Retd), Central Sheep and Wool Research Institute, Avikanagar, Rajasthan

8	Drying and value addition of flowers for sustainable livelihood development	Dr. Bharti Kashyap, Assistant Professor, Department of Floriculture and landscape Architecture, Dr YSPUHF, Nauni, Solan, H.P.
9	Solid waste management at household level	Dr. Sudhir Kumar Syal, Acting Head and Associate Professor, Department of Biotechnology and Bioinformatics. Jaypee University of Information Technology (JUIT), Solan, HP
10	Success story of Women Technology Park	Dr. Neelu Ahuja, Senior Associate Professor and Head, Center for Computation Research, College of Engineering Studies, University of Petroleum and Energy Studies (UPES), Dehradun, UK
11	All India Coordinated Projects for Women	Dr. Lal Singh, Director, Himalayan Research Group (HRG), Shimla
12	Agricultural tools for reduction of drudgery	Dr. Deepika Agrahar Murugkar, ICAR-National Fellow, Central Institute of Agriculture Engineering (CIAE), Bhopal
13	Public Financial Management System PFMS and NGO Portal Darpan	Mr. Pawan Kumar, Scientist, DST, New Delhi
14	Commitment to develop technology to boost bio-economy through sustainable utilization of Himalayan Bio-resources	Dr. Ashu Gulati, Senior Scientist, Institute of Himalayan Bioresource Technology (IHBT), Palampur, HP

Day 1: Technical session 1

In technical session 1 three important lectures on, Empowering Women: Enabling Socio-Economic Development; S&T connect to society: SEED initiatives and achievements and Prospects of fermented foods and other value added products from natural resources: Potentials and enchantment of livelihood of common people were held.

First lecture was on, “*Empowering Women: Enabling Socio-Economic Development*” by **Dr. Rashmi Sharma**, Scientist E, SEED Division. She addressed the issue of gender



parity in S&T and delivered her lecture on empowering women and enabling socio-economic development. She further added that gender parity is a challenge in Indian context and need provisions in implementations and actions. She informed the delegates that DST encompasses 27 beneficiary oriented schemes for women. She also discussed various initiatives for women by DST such as, Knowledge Involvement in Research Advancement through Nurturing (KIRAN), fellowships schemes for women scientist (WOS A, B, C), Consolidation of University Research for Innovation and Excellence in women universities (CURIE). She also discussed the new initiatives of DST like mobility, science communication and entrepreneurship. She also described the role of community radio for empowering women. Till now DST has supported 68 community radio stations under its programme, Science for Women's Health and Nutrition (SWHN), radio mathematics of NCSTS divisions. She also said that there are 13 community radio stations which are being supported by DST in northern states of India. The focus of SWHN programme in these community radio stations are anemia, non-communicable disease, menstrual hygiene, low birth rate, occupational and reproductive health, awareness and HIV/TB, addiction, malnutrition and environment. The radio maths programme is an initiative to inculcate the mathematical way of thinking in farmers, weaves, artisans specially women belonging to underprivileged sectors. She also shared various challenges faced by women in higher education, retention of research career and leadership positions.

Dr. Sunil Aggrawal, Scientist 'E', SEED, Division, DST in his talk "*S&T connect to society: SEED initiatives and achievements*", stressed that issues in remote area of the country should be addressed at grass root level with the help of technology and he also told that SEED, DST is dealing with issues through basic and action based research. He emphasized the need to develop grass root level interventions, value additions to local resources and generation of



employment, services and entrepreneurial opportunities to sustain climate sensitive livelihood of mountainous areas. He urged the delegates to develop innovative and need based projects.

3rd lecture was given by Dr. O.N. Tewari, Senior Scientist, Center for Conservation and utilization of Blue-Green Algae, Division of Microbiology, Indian Agricultural Research Institute, New Delhi on, “Prospects of fermented foods and other value



added products from natural resources: Potentials and enchantment of livelihood of common people”. He suggested looking at the prospects of fermented foods such as bamboo, soybean and fish in the northern states of India. He also suggested identification of appropriate technologies for removal of flavors of the fermented items so that these may be used in large scale and also informed about different microorganisms like *Spirulina* which can be used for making protein rich bio-products. He also shared the knowledge on extraction of pigments from BGA like *Anabaena*, *Nostoc* and *Leptolyngbya* which can be used as natural colorants. He stressed on finding aspects of bamboo cultivation in the state of Himachal Pradesh.

In technical session 2, a total of six informative lectures on S&T for Women were delivered: Initiative and expectations; Success story of Women Technology Park; Women health and nutrition; Livestock, poultry farming



and farm animals rearing by women; Drying and value addition of flowers for sustainable livelihood development and solid waste management at household level were delivered.

In the first lecture, Mrs. Indu Puri, Scientist E, SEED Division delivered her talk on, *“S&T for Women: Initiative and expectations”*. She started her talk by enlisting various constraints like illiteracy, social and cultural barriers, limited credit and input services and unequal employment opportunities faced by rural women. She told that overall objective of this programme is to improve the livelihood of vulnerable groups in a sustainable manner through gender budgeting and management of local resources. She described various S&T initiatives by SEED division of DST for the women. Major programme of SEED Division are women technology parks, all India coordinated projects, women health and nutrition, livelihood option enhancement and individual projects for technology up-gradation development replication etc. R&D institution, universities and S&T based agencies are the main partners of DST for implementing these initiatives. She explained that DST has been implementing the S&T scheme for women with a view to empower women through S&T inputs. She informed that various proposals can be submitted through S&T for women’s schemes and can be individual or coordinated ones, related to Women Technology Park or special projects on women health & nutrition. She told that 32 WTPs were set up till 2016 with focus on agriculture, health and sanitization, textile, energy conservation, livestock and natural resource management. Most of WTPs are concentrated in southern and NE regions of India and contribution northern states are very less. She also discussed some case studies of successful WTPs from Tumkur in Karnataka, Jaipur, and Orissa. She presented her concern about various challenges faced by DST such as difficulty to get dedicated PIs and agencies that can provide S&T based solutions for local populations and resources.



Dr. Rekha Saxena, Project Director, Society for Environment and Development (SED), shared the success story of Women Technology Park developed by Gramin Vigyan Kendra in Digod of Kota district of Rajasthan. SED provides low cost technology to villagers specially

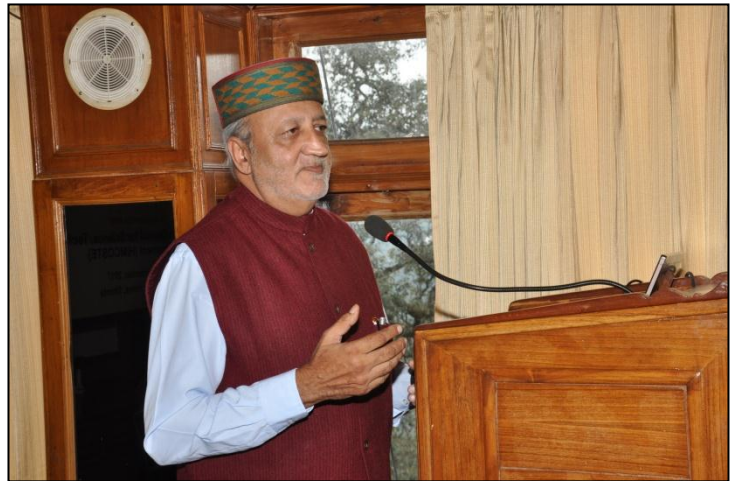
women in 25 villages of Sultanpur block. The objective of WTP was to inculcate entrepreneurship among the rural women and establish marketing linkages, increase socio-economic status of women with overall objective to make them self reliant. Trainings were provided on value addition of agri-products, health products, animal feed, block and animal husbandry. She also brought some of the value added health foods such as flax namkeens, biscuit and roasted flax seeds made by rural women which were presented to the delegates and were well appreciated.

SED also organizes various training programme for rural women to educate them about the use of digital transactions through payment apps like, Bheem and Paytm etc. This talk emerged as one of the most interactive talk and the delegates put various questions on the working and marketing models adopted, training organizations, motivational strategies adopted and problems faced during the execution of the schemes. A suggestion was also given to promote large scale marketing of flax seed based value added product because of its nutritional importance and it was also suggested to get the flax seeds biscuits patented.

Dr. Kumud Khanna, Former Director, Institute of Home Economics, Delhi University, delivered a lecture on “*Women health and nutrition*”. In her talk she stressed that women, infants and under-five children, adolescent girls and elderly women are the most vulnerable group of population in terms of health and nutrition. She also discussed various health related issues such as micro-nutrient, vitamin A, iron, iodine deficiency and non-communicable diseases and syndromes among the vulnerable group. She emphasized the importance of creating awareness among populations to reduce malnutrition and increasing non-communicable diseases such as hypertension, diabetes etc. She emphasized the need to include the functional foods such as millets and pulses in daily diet as millets are low in glycemic index, high in fibers, gluten free and rich in micronutrients.



Dr. Rajeev Gulyani, Principle Scientist (Retd.), Central Sheep and Wool Research Institute, Avikanagar, Rajasthan delivered a lecture on, *“Livestock, poultry farming and farm animals rearing by women”*. He told that in India livestock is mainly becoming feminized and women contribute nearly 78% to livestock sector. Livestock provides economic and social independence to rural women, he also discussed the role in women in entrepreneurial activities in livestock through which these women can sustain their livelihood.



Dr. Bharti Kashyap, Assistant Professor, Department of Floriculture and Landscape Architecture, Dr. YSPUHF, Nauni, Solan, H.P. delivered her talk on *“Drying and value addition of flowers for sustainable livelihood development”*. She explained that dry flowers contribute nearly 70% of exported floriculture products of India. She described that various value added products such as decorative pieces, flower arrangements, dolls, greeting cards, file covers, picture frames, book marks etc. can be prepared from simple raw material like dried leaves, flowers, fruits, seeds, grasses, cones, ferns, twigs and agricultural waste. She also explained various techniques of drying flowers and emphasized that this can be a great source of income generation for rural women. She was suggested by various delegates to use these prospects in WTP so that these resources can help in empowering women of rural areas.



Dr. Sudhir Kumar Syal, Acting Head and Associate Professor, Department of Biotechnology and Bioinformatics, Jaypee University of Information Technology (JUIT), Solan, HP, delivered a talk on solid waste management at household level. He discussed about various prospects of biogas in Himachal Pradesh and informed about biogas reactor designed and installed by JUIT. He explained that JUIT is doing work on biogas production for sustainable energy generation in rural parts of the state using one stage portable digester in collaboration with HIMCOSTE, Shimla.



Day 2: In technical session 5 five informative deliberations on A success story of Women Technology Park; All India Coordinated Projects for Women; Agricultural tools for reduction of drudgery; Public Financial Management System PFMS and NGO Portal Darpan; Commitment to develop technology to boost bio-economy through sustainable utilization of Himalayan Bio-resources were made.

Dr. Neelu Ahuja, Senior Associate Professor and Head, Center for Computation Research, College of Engineering Studies, University of Petroleum and Energy Studies (UPES), Dehradun, deliberated upon a success story of Women Technology Park. She told that their WTP encompasses three components *i.e.*, paper recycling, cultivation of medicinal and aromatic plants and ICT assisted craft and textile design. She told that their department organizes various S&T based training programme to the stakeholders of Sahaspur block in Dehradun. They also provide managerial and entrepreneurial talks by guests and inclusion of interested stakeholders into society followed by progressive monitoring.



Linkages are being developed for procuring raw material, tools and getting the marketing facilities. The help of local artisans is being taken for art and craft development. Various traditional as well as novel products such as pen/pencil holders, tea coasters, shopping/laptop bags, office tray, degree folders, jewelry items were developed from bamboo, jute and ringal based raw materials. The self help groups are getting various market orders for their innovative eco-friendly products. Rural WTP of UPES helped in improving livelihood through traditional knowledge, need based local specific and relevant S&T interventions with low investments. The initiative and WTP success story was well appreciated by the delegates. Suggestions were made for wide marketing and creation of self help group and proper marketing channels in order to sustain the success of rural WTP. She was also suggested to prepare an exit plan for successful completion of the projects. Suggestions also involved linking the WTP stakeholders to the projects of the students and their dissertations.

Dr. Lal Singh, Director, Himalayan Research Group (HRG), Shimla delivered his lecture on “*All India Coordinated Projects for Women*”. He urged for a need to take women technology to a level where every individual should get involved to achieve the target. He illustrated briefly the critical steps for project formulation for DST. He described the success stories of various accomplished and ongoing projects of HRG group. He suggested need based, individual interest based, institutional and administrative target based women centric thrust areas for project formulations.



Dr. Deepika Agrahar Murugkar, ICAR-National Fellow, Central Institute of Agriculture Engineering (CIAE), Bhopal deliberated upon “*Agricultural tools for reduction of drudgery*”. She discussed the involvement of women in agriculture as a worker, operator, manager and as an entrepreneur as well. She stressed that the agriculture implements should be



designed differently for women taking into consideration various ergonomical characteristics of women farm workers. She also explained various women friendly agricultural tools that are developed in CIAE, Bhopal. She told that various training programme are conducted for women for operating, repair and maintenance work for agricultural tools and implements.

Mr. Pawan Kumar, Scientist, DST, New Delhi delivered his lecture on “*Public Financial Management System PFMS and NGO Portal Darpan*”. He highlighted the PFMS system which is a web based online transaction system and e-payment mode for implementing agencies. It is mandatory for all the beneficiaries to get registered under this system so that financial transactions can be done electronically.



He explained in detail all the know-how of registration and online submission process of UC/SE in the portal. He also informed the delegates about the registration process on NGO, Darpan portal. He also explained about some common mistakes and the solutions which the project PIs do during the submission of UC/SE. After his lecture queries were raised by the delegates about the interest rates on the capital and general head funding.

Dr. Ashu Gulati, Senior Scientist, Institute of Himalayan Bioresource Technology (IHBT) delivered her talk on “*Commitment to develop technology to boost bio-economy through sustainable utilization of Himalayan Bio-resources*”. She explained the landmark achievements of IHBT in the field of high altitude biology, natural products development, agro-technology development of medicinal aromatic and commercially important plants, value added plant products and processes to ensure rural, societal and environmental development.



Ms. Indu Puri, Scientist E, SEED Division gave the vote of thanks to expert speakers, participants and to officers of HIMCOSTE for their cooperation and making the workshop a successful venture. State Science and technology councils were encouraged to identify organizations, NGO etc. which can take up projects and if necessary, organize sensitization programme. In the present programme the ideas were shared and a synergy was created with some of the research and scientific institutions of the region.





