

National Children Science Congress-2020

State Level Orientation Workshop for District Coordinators and Resource Teachers (Google Meet)

Dated: 21-11-2020

State Level Orientation Workshop under National Children Science Congress-2020 for District Coordinators and Resource Teachers was organised by Chhattisgarh Council of Science & Technology on 21-11-2020 at 12.00 P.M through Google Meet to orient them to the Focal theme 'Science for Sustainable Living' and its subthemes for NCSC 2020 and 2021. The programme was catalysed by National Council for Science and Technology Communication, Department of Science and Technology, Govt. of India.

At the beginning Dr.(Mrs.) J.K Rai, State Coordinator, NCSC, Chhattisgarh welcomed all the distinguished dignitaries, District Coordinators and Resource Teachers who came from all Districts of the State and gave a brief introduction about the National Children Science Congress Programme. She said that on 2nd November 2020, Chhattisgarh State participated in the National Regional Orientation Workshop and as per the instructions given by the National Academic Committee Members, DST we are organising this online State Level Orientation Workshop.

After that, technical session was started. Dr. M.K Rai, State Academic Coordinator, NCSC, Chhattisgarh introduced the Subject Experts and made the participants aware to the programme schedule of the workshop.

Prof. K.K. Sahu, Professor, S.O.S.in Biotechnology, Pt. Ravishankar Shukla University, Raipur illustrated a brief introduction on the theme of National Children Science Congress-2020 '**Science for Sustainable Living**'. He said that Sustainable living is the practice of reducing demand of the human being on natural resources at personal and community levels with suitable alternatives. We can save our life by proper use of the environment. He focused on the five basic principles: i. Respect and care for all, ii. Leading a community life, iii. Inculcate a habit of saving, iv. Adopt minimalism and v. Responsible decision making. He illustrated the Goal and Objectives of the programme and proposed framework for investigating a project including strategic planning, design and experimentation to leverage the prospects and overcome the challenges. He introduced the proposed sub themes:

- Ecosystem for Sustainable Living
- Appropriate Technology for Sustainable Living
- Social innovation for Sustainable Living
- Design, Development and Modelling for Sustainable Living
- Traditional knowledge System for Sustainable Living

Dr. V.K. Kanungo, Professor, Dept. of Botany, Govt. Nagarjuna P.G. College of Science, Raipur gave a presentation on the first sub theme ‘**Ecosystem for Sustainable Living**’. In his presentation he explained different types of Ecosystem and different components of Ecosystem and how they are linked to each other. He expressed how ecosystem provides habitat to wild plants and animals and support different food chains and food webs. He illustrated different Ecosystem Services: Provisioning Services; Cultural Services; Regulating Services and Supporting Services with examples. He gave some ideas of Projects like: Study of an Agroecosystem; Study of Fruit bearing plants, Medicinal plants in Home garden and its diversity; Study of various types of spiders and their preys in the Ecosystem in our locality; Study of bird diversity in a home garden; Study of Amphibian diversity by observing the morphological features of amphibians in an area; Impact of alien plants on terrestrial native vegetation etc.

Prof. Sanjay Tiwari, Head, School of Studies in Electronics and Photonics, Pt. R.S.U, Raipur and Prof. S.K. Jadhav, Head, S.O.S. in Biotechnology, Pt. Ravishankar Shukla University, Raipur delivered presentation on the second subtheme ‘**Appropriate Technology for Sustainable Living**’.

Prof. Sanjay Tiwari illustrated the 17 Sustainable Development Goals of UNO that are essential for peace and prosperity. He said we can choose any issue and according to that technologies can be developed to improve the life style. He explained how solar energy is used in purifying potable water, power generation, irrigation and how green energy sources can reduce greenhouse gas emissions. Health services have been transformed by solar electrification. He expressed that technologies should have beneficial effects on income generation, employment, human development, environmental quality and as well as productivity. He explained about construction of bio-toilets and cemented stoves for cooking purposes, we can make innovative projects by incorporating innovative aspects/technologies.

Prof. S.K. Jadhav said that appropriate technologies refer to technologies that are adaptable to local needs, acceptable to users and made using locally available materials to improve lives and livelihoods of people in resource constrained environments

He expressed the characteristics of appropriate technologies and explained the areas where appropriate technologies are widely used like: Water; Renewable Energy; Transportation; Agriculture; Habitat; Livelihood; Disaster Management; Food preservation and Education. He suggested some project ideas: Eco friendly technology for raising seedlings ; traditional agriculture planning, crop calendar, seed preservation, crop storage; ethno-medicinal practices; Waste water treatment using reed bed; Preservation of food products by drying; Performance Assessment of Biomass based Cooking Stoves; Comparative study of thermal performance of traditional and modern houses; Traditional water harvesting; Recycling crafts(growing medicinal plants in old plastic bottles), handloom practices etc.

Dr. Dipendra Singh, Assistant Professor, School of Studies in Pharmacy, Pt. Ravishankar Shukla University, Raipur gave presentation on the third subtheme '**Social Innovation for Sustainable Living**'. He said that social innovation is about new ideas: products, processes, services and models that meet social needs. The important spheres for social innovation are food, clothing, shelter, livelihood, health care, education and communication. He gave some ideas in making projects like: Creation of Wall of Charity/Goodwill for the needy (clothes/shoes); To utilize iron –rich food stuff to produce folic acid supplement for anaemia; Society managed emergency healthcare services using mobile app; Promotion of local art and craft for the empowerment of artisans; Utilization of open space/terrace near home for growing vegetables; Audit and assessment of Energy Resources for use and misuse; Developing products for children/people with disability; Developing mobile app-based alarm system to safeguard against natural disaster etc.

Er. Anil Sharma, Ret.Chief Engineer, Chhattisgarh Environment Conservation Board, Raipur and Dr. Kamlesh Shrivastava, Associate Professor, School of Studies in Chemistry, Pt. Ravishankar Shukla University, Raipur expressed their thoughts on the fourth sub theme 'Design, Development, Modeling and Planning for Sustainable Living.

Er. Anil Sharma explained the terminology of Design, Development and Modeling and their efficacy in sustainable living. He suggested some project ideas

related to Disaster mitigation; global warming; sustainable agriculture; design of the traditional housing in relation to climatic conditions; Model the energy consumption in our locality and make a comparison based on different housing designs; understand the solid waste management system in our locality and propose viable better ideas; design of cement cooking stoves to increase its cooking efficiency; concept to use Narwa, Gurwa & Bari; Hospital waste management etc. He illustrated Urban development projects including green building concept; management of waste water; use of mathematical modeling to assess the impact of industries in the environment including effect of parameters like temperature, wind direction, machine design etc; Use of biofertilizers and importance of organic farming; to study pollution of river near to the home; Indoor radon gas can be controlled with cost effective techniques; projects based on proposition of zero waste concept etc. can be prepared.

Dr. Kamlesh Shrivastava said that Design is a method to give appropriate shape to any object, to strengthen its functional efficiency, make it easy to handle, minimizing use of material, energy, labour cost and should be eco friendly. He explained with the model of an aeroplane designed and built by wright brothers. Modeling and design for planning resources is considered as most essential and need of the day. Modeling helps to visualize the future scenario from the historical information / events /data that aid to design and plan the activities for sustainable future. Modeling is a systematic approach and projected representation of a system phenomenon through equation, graph, map and visuals. He suggested some Project ideas: To study exploitation of nature and natural resources to be conserved for the future generation. He explained different types of models: Physical, Schematic, Conceptual and Mathematical Model.

He suggested some project ideas including physical model like study of Solar system, Model of DNA and Rain Water Harvesting. Schematic model: Waste Water Treatment; Formation of Bioethanol; Modification of Water Purification System; Use of Smart Phone as Remote etc. Conceptual model: Process of Photosynthesis; Fermentation; Water Purifier-Reverse Osmosis; Mathematical model showing plant growth etc.

Dr. Mittashri Mitra, Professor, S.O.S. in Anthropology, Pt. Ravishankar Shukla University, Raipur (C.G) gave presentation on the fifth subtheme ‘**Traditional Knowledge System for Sustainable Living**’. She expressed that traditional knowledge system include technology, social, economic and theoretical

learning. It is a basis of local level decision making in agriculture, health care, food preparation, education, natural resources and other activities of rural community. She said that we should give attention to the 17 Sustainable Development Goals to transform, 'Living no One Behind'. We have to conserve our traditional knowledge as it is transferring from one generation to next generation. She suggested some of the project ideas: Evaluation of nutritional values of traditional food; Study of ethno –medicines, their applications and efficiencies; traditional water harvesting techniques and its utility in the modern era; Traditional food material preservation practices; documentation of traditional food and their uses; Traditional calendar of farming activities and its association with weather parameters etc.

Projects can be prepared on documentation of tribal's ecology and culture; Nutritional value of wild roots used by tribes. She said that as in covid -19 pandemic situation, medicinal plants are used scientifically to increase immunity, Study and documentation of medicinal plants used to cure diseases can be done.

After presentation session the District Coordinators and Resource Teachers interacted with the State Coordinator and Experts.

District Coordinators and Guide Teachers were made aware to the following Guidelines / Strategy given by DST, GoI for organizing District and State level CSC:

Undertaking project : Child scientists may undertake a project under any of the sub-themes, while they are at home. The experimental part, wherever possible can be carried out at home or around, but without getting exposed to the infection. In addition, the two-child norm may be relaxed during the current year, and participation by either a single child or in team of two may be permitted. But the age restrictions would remain in effect as has been mentioned under the program guidelines. Due to restricted movements, during current year, the experimental part, which otherwise is an essential and integral part, may be relaxed. Projects based on survey, observations and case studies may be considered, only if the participants are unable to carry out any experimental work, which otherwise require laboratory facilities as available in schools, or in research institutes or the likes.

District level CSC : District level CSC is to be conducted using online platforms. In the process, child scientists can send a copy of the synopsis of their project through e-mail to the District Coordinator / District Academic Coordinator. District Coordinator/District Academic Coordinator can get these synopses screened by a panel of evaluators and shortlist for oral presentation. During District level CSC, both, oral presentation and

written report may be evaluated. The guide teacher with the help from District Coordinator / District Academic Coordinator will have to make appropriate arrangements and take care of the online presentation.

Number of selected projects : As per the existing guidelines and norms, number of the selected projects from the District should be in the ratio of 15::1, i.e., for every 15 projects presented at the District level, one project is to be shortlisted for its presentation at the next (State) level. However, looking at the present scenario, this norm may be relaxed, and the number of selected projects for the next (State) level may be left at the discretion of District / State agency.

State level CSC : Soft copies of the Project Report of the selected projects from the district level may be sent through e-mail to the State Coordinator /State Academic Coordinator, who in turn would get the same assessed by the panel of evaluators. Similarly, after initial screening, child scientist of the respective projects could be asked to make an online presentation before the panel of evaluators. Likewise, the District Coordinator / District Academic Coordinator will have to make necessary arrangements and take care of the online presentations from the respective districts, following all the guidelines recommended by the competent authorities of the respective District / State.

Mode of presentation : Taking into account the safety of children and restrictions imposed at different levels by the competent authorities, the most plausible way out for presentation would be the online mode.

Requirements : For conducting online presentations, basically, internet services and webcam would be required.

Time frame : District level CSC must be completed by mid-December 2020 and State level by mid-January 2021.

Relaxations under present situation: As mentioned earlier the ratio of selected projects from district to State Level may be relaxed. Likewise, ratios related to the junior and senior groups, rural and urban, or any other as the case may be, to be relaxed during current year.

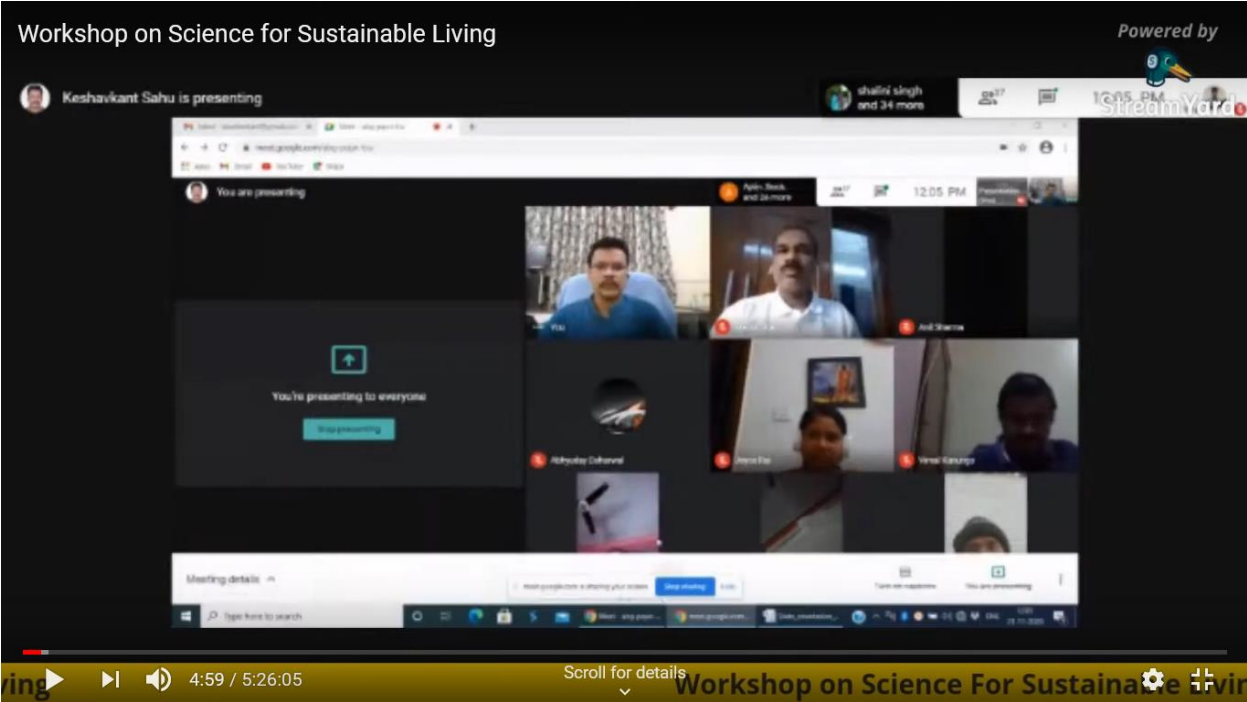
In the Orientation Workshop from Chhattisgarh State the following Subject Experts participated:-

1. Er. Anil Sharma, Ret. Chief Engineer, Chhattisgarh Environment Conservation Board, Ramnagar, Raipur (C.G) 9827126123, akscecb@gamil.com

2. Dr. Mittashri Mitra, Ret. Professor, S.O.S. in Anthropology, Pt. Ravishankar Shukla University, Raipur (C.G.) 9425207354 (M), mitashree.mitra@gmail.com
3. Prof. S.K. Jadhav, Head, S.O.S. in Biotechnology, Pt. Ravishankar Shukla University, Raipur (C.G) 9827114218, Jadhav9862@gmail.com
4. Prof. Sanjay Tiwari, Head, School of Studies in Electronics and Photonics, Pt. R.S.U, Raipur (C.G.) 9424225771,7000200750,drsanjaytiwari@gmail.com
5. Dr. V.K. Kanungo, Professor, Dept. of Botany, Govt. Nagarjuna P.G. College of Science, Raipur
6. Prof. K.K Sahu, Professor, S.O.S.in Biotechnology, Pt. Ravishankar Shukla University, Raipur (C.G) 9425228966(M), skeshavkant@gmail.com
7. Dr. Kamlesh Shrivastava, Associate Professor, School of Studies in Chemistry, Pt. Ravishankar Shukla University, Raipur (C.G) 7879581979
8. Dr. Dipendra Singh, Assistant Professor, School of Studies in Pharmacy, Pt. Ravishankar Shukla University, Raipur (C.G.) 9302910443, drdsinghuiop@gmail.com

In the Google meet 62 participants from 27 Districts participated actively. YouTube link was also generated. The Orientation programme was concluded with vote of thanks by Dr.(Mrs.) J.K Rai, State Coordinator, CCOST.

Photographs of the event - State Level Orientation Workshop on the focal theme “Science, For Sustainable Living” organized by Chhattisgarh Council of Science and Technology, Raipur



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Shailesh Kumar Jadhav is presenting

APARNA TIWARI and 43 more

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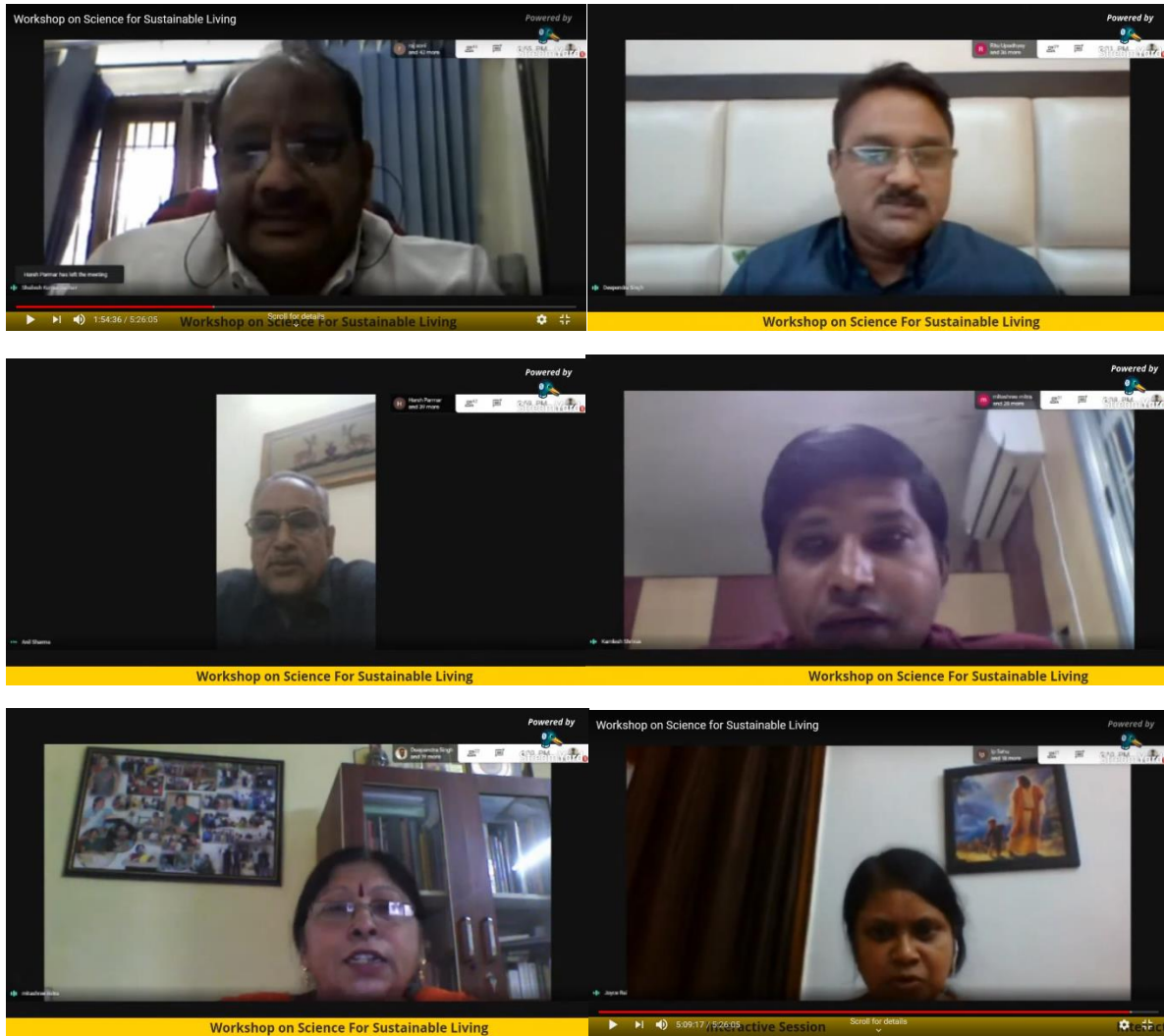
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Eight subject experts shared their views and ideas on focal theme and sub-themes of NCSC 2020