

Federal Republic of Germany maintained that a number of parameters should be accurately determined prior to cryo-preservation, viz. (i) cryo-preservation potential of each recalcitrant species, (ii) assessment of the amount and effect of damage due to cryo-injury of both the cotyledon and embryonic axes separately,

and (iii) the differentiation capacity of the explants after cryo-storage. The cryo-preservation technique can, therefore, be of any use only when these parameters are optimized.

Lastly, identification of certain marker molecules and their biochemical paths which act as modulators of the response

to stress may probably pave the way to transgenic recalcitrant seeds tolerant to desiccation stress.

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Participatory approach in biodiversity conservation: A case in the Himalaya

The core group Conservation of Biological Diversity at G.B. Pant Institute of Himalayan Environment and Development, Kosi-Almora initiated a programme 'Peoples' participation in Himalayan biodiversity conservation' in March 1995. The programme envisages to (i) impart education in biodiversity, (ii) generate public opinion, and (iii) motivate youngsters to conserve and utilize local biodiversity. The programme focused on the linkages between biodiversity elements and needs of local people. The first phase of the programme included training workshops/discussion meetings and follow up action. The following target groups were recognized: (i) Resource group: rural inhabitants, peoples' representative, NGOs and local officials, (ii) Management group: teachers, academics, and scientists, (iii) Work force group: students. Over 400 participants representing these target groups have been given training in four training workshops organized in different remote localities of District Pithoragarh in Kumaun Himalaya. While analysing the responses of participants in first three workshops, it was realized that attention should be focused on students and teachers.

The IV Training Workshop, with desired re-orientation of programme features, was organized at LWS Girls Inter College Bhatkot, Pithoragarh on 24-25 October 1997. Fifty-seven participants

(students/teachers) representing 23 educational Institutions attended the workshop.

The most important component of the workshop was on-site training, featuring six capsules on biodiversity (1) Status, (2) Assessment, (3) Valuation, (4) Conservation, (5) Soil, water and biodiversity interdependence, (6) Participation and role of target groups. Participants were introduced about biodiversity in general, its components and levels. Practically feasible techniques for assessing local biodiversity and its values were demonstrated under first three capsules. The last three primarily dealt with conservation. *In situ* and *ex situ* conservation techniques were explained. Under *ex situ* technique, participants were exposed to fundamentals and importance of tissue culture techniques. Relationships and interdependence of soil, water and biodiversity were described and demonstrated through posters. Finally, under participation capsule, besides explaining and providing the formats for collecting information on local biodiversity, possibility of developing preservation models in school/college campuses was discussed. Importance of such models in ensuring maintenance of indigenous components of biodiversity was explained by furnishing examples of the successes of the earlier efforts in this direction. Revegetating degraded lands, development of nurseries and propagation packages of important species were also

focused. Training on value addition as a practical option to augment their economy through effective utilization of bio-resources developed special interest among participants.

A special feature of the workshop was a lecture delivered by V. K. Gaur of Indian Institute of Astrophysics, Bangalore, on evolution of earth and its living organisms. The exposition of the theme was received by the participants with great interest. The follow-up action under this programme is being given utmost importance. All the participating institutions are expected to initiate biodiversity-related activities through an identified team under the leadership of trained teachers and students. This is being implemented through the involvement of district authorities of the Department of Education. The area-specific feedback from the participants will be analysed and documented by the Institute. This will also be complemented with scientific inputs generated by the Institute and other collaborating institutions. The programme activities are proposed to be extended to other parts of the Indian Himalaya through the units of this Institute.

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