

## Conference Report

### Underutilized Horticultural Genetic Resources- Assets for the Present and Future

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Horticulture sector broadly deals with the garden crops *viz.* fruits, vegetables, ornamental plants, spices, plantation crops, medicinal & aromatic plants etc. and for most of these commodities, India is among the major producing nations. However, a number of lesser known and regionally popular species exist in different parts of our country, which have traditionally been used for food, medicines, aesthetics, natural colourants, and other purposes. Most of these species are collected from the natural stands and are rarely cultivated. Commercial production in most crop plants has been hampered by biotic as well as abiotic stresses globally. In the recent past, underutilized horticultural genetic resources (UHGRs) including crop wild relatives (CWRs) have gained importance as potential reservoirs of desirable genes/ traits for addressing the long standing issues of commercial crops. These resources could be of significance as a parent in classical/ advance breeding programmes or as a rootstock for challenging conditions. Besides, few potential species could be brought under cultivation through domestication, which would help in diversifying the cropping system and thereby mitigating the impact of climate change.

In order to sensitize the stakeholders about the importance of rather less-researched genetic resources, ICAR- Central Island Agricultural Research Institute (CIARI), Port Blair in collaboration with Andaman Science Association, Port Blair and Department of Biotechnology, New Delhi organized two days Virtual National Conference on “Underutilized Horticultural Genetic Resources: Conservation and Utilization” during June 3-4, 2022. Dr. E. B. Chakurkar, Director, ICAR-CIARI, Port Blair and Convenor of the event in his opening remarks enlightened the gathering about the need for conducting this event on the occasion of World Environment Day and relevance of native biodiversity in

providing nutritional and livelihood security to the masses. The conference was inaugurated by Dr. Chittaranjan Kole, President, International Climate Resilient Crop Genomics Consortium; International Phytomedomics & Nutriomics Consortium and Former Raja Ramanna Fellow. He emphasized upon conserving the precious biodiversity of the Andaman and Nicobar Islands and its sustainable utilization for mitigating the challenges posed by the climate change. He suggested dedicating identified islands as conservation sites for the endemic and rare species of these islands.

Padma Shri Dr. Brahma Singh, Founder, Prof. Brahma Singh Horticultural Foundation, New Delhi and Former Secretary, Life Sciences Research Board, DRDO delivered his Keynote address on importance of UHGRs with special reference to Sea buckthorn. He also sensitized the participants about the potential of local species to cater the global markets. Systematic efforts were envisaged for making the regionally popular species accessible in the domestic as well as international markets through appropriate processing technologies. Dr. Singh elaborated upon how scientific and technological interventions helped in improving the awareness and marketability of sea buckthorn, which was once considered as a weed.

Dr. N.K. Krishna Kumar, Former DDG (HS), ICAR, New Delhi and Former Regional Representative (South and Central Asia), Bioversity International delivered a Keynote Lecture. He highlighted the need of adopting the holistic approach to achieve environmental, ecological and economic security. He elaborated upon the need to develop agrobiodiversity index and identification of keystone species and pollinators in biodiversity rich areas. It was emphasized that focus is required for studying the nutritional requirement of aging population as India would transform from nation with young population at present to one of the old nations in coming 2-3 decades.

Identification of specific crops/ species as a source of specific nutrients/ bioactive molecules would help in targeted production of these commodities in future.

Technical sessions covered four invited talks and 88 presentations on various themes ranging from conservation, domestication, cultivation, improvement, postharvest management and marketing of UHGRs. Need for conservation, documentation and registration of novel germplasm was stressed upon. Especially the regions of high agro-biodiversity, which are under the risk of climate change, need to be focused and systematic plans to be chalked out to preserve the precious germplasm. Dr. Veena Gupta, Principal Scientist, ICAR-National Bureau of Plant Genetic Resource, New Delhi in her invited talk, highlighted the important horticultural plant genetic resources conserved in the national gene bank at its headquarters as well as regional stations.

Promotion of cultivation and value chain development is considered as a key for promoting underutilized species. Dr. P.C. Tripathi, Principal Scientist, ICAR-Indian Institute of Horticultural Research, Bengaluru highlighted various steps taken in this direction and challenges faced in the process, mainly in the perennial fruit bearing species. Dr. P.M. Haldankar, Director of Research, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli suggested the road map for domestication and sustainable utilization of potential species, citing his personal experiences with *Garcinia indica*. The species was restricted to wild/ semi wild conditions; however, due to systematic efforts, its cultivation and commercial scale processing has now spread across several coastal states of our country. Presentations on diversity of underutilized vegetables, native fruits and spices of the islands and their

present state of utilization were made during the event by Dr. Shrawan Singh, Senior Scientist, ICAR-Indian Agricultural Research Institute, New Delhi and Dr. Pooja Bohra, Scientist-SS, ICAR-Central Island Agricultural Research Institute, Port Blair.

During the valedictory session, Dr. A.K. Singh, DDG (HS), ICAR, New Delhi highlighted the need to take up systematic research on perennial lesser known horticultural species, especially in the wake of climate change. He suggested that policy decisions to include potential native species under different government schemes could give impetus for their popularization. Dr. T.V.R.S. Sharma, Former Member, General Body, ICAR, New Delhi stressed upon the vulnerability of island ecosystem to climate change and role of CWRs in meeting the challenges of horticultural sector. Use of local diversity for achieving prosperity especially in the far flung regions was envisaged by Dr. Sharma. Dr. S. Dam Roy, Former Director, ICAR-CIARI, Port Blair highlighted that though the islands as well as other agro-biodiversity hotspots of the country hold precious germplasm, characterization of most of these species are yet to be attempted and the conference could attract the attention of various researchers on such important aspect. Two hundred ninety-one participants from 89 organizations/ institutes of 30 states/Union Territories of the country registered for the event. As most of the underutilized horticultural species are region specific in nature (thus not known to many), an e-book of abstracts (ISBN: 978-81-957481-0-5) with colourful photographs of the discussed species was also published during the event. The book is available online on the website of Authors' Institute and is freely downloadable.