**Excerpts from the book “Red List of Macro-Fungi of India”**

The world has realized, though late, that population of some species of organisms are dwindling at a faster rate than expected. The realization had come at the cost of extinction of some species and others at the verge of extinction. Righty the International Union for Conservation of Nature (IUCN) had prepared Red List categories for species and required guidelines, and countries are following them to prepare their Red List of organisms. Similarly there are guidelines for Red Listing of fungi and European countries have taken lead in preparing Red List of fungi of their countries.

Though fungi constitute the second largest kingdom of life, they hardly found a mention in most conservation strategies possibly because only a few fungi are considered for Red List status. In fact, 214 species of fungi were in The Global Fungal Red List Initiative of IUCN in 2019. Like other life forms on earth, the fungi are also facing the threats to their existence due to loss of habitat and hosts, over exploitation, climate change, developmental activities, pollution, etc. The growth of large urban areas, construction activities such as dams, buildings and roads, encroachment on vast areas of forest lands for extension of arable expanses and mining operations are examples of direct onslaughts on nature which have steadily depleted biodiversity. Fungal diversity cannot remain unaffected due to anthropogenic activities. Human activities are undoubtedly driving some fungi into extinction.  We don't know which or how many are being lost, and it is absurd for anyone to suggest that we are losing two species each week or twenty each day. Information on extinctions is extremely hard to obtain. It is difficult to tell when a particular microscopic fungus, which can be detected only by culturing the soil, or a macroscopic fungus that may fruit only once in 20 years, has finally succumbed. Hawksworth (2019) suggested that there are probably 2.2 to 3.8 million species of fungi and that about 97 per cent of the species remain undescribed. This reiterates that the threat to fungal species is much more than expected.

The Global Fungal Red List Initiative is, therefore, a welcome effort to facilitate and coordinate concerted efforts by the global mycological community about fungal conservation needs. Red Listing of organisms by IUCN is an alert for the governments to value and protect taxa after knowing about their threat status. Fungi also need conservation efforts by the countries as they are the important organisms in the ecosystem and play crucial role in nutrient recycling. Recently in August 2021 Re:wild and IUCN Species Survival Commission become first global organizations to call for the recognition of fungi as one of three kingdoms of life critical to protecting and restoring Earth - " Fauna, Flora and Funga”, which are critical to all life on Earth and need to be integrated into conservation strategies.

Preparing a Red List of Fungi in India using IUCN criteria and guidelines is a necessity to impress upon the policy makers and conservationists. While more efforts are made for conservation of animals and plants, fungal conservation is seldom deliberated and targeted by the conservationists. Therefore, it was imperative for the mycologists in India to develop a Red List of Fungi for the country so that the government and policy makers may become aware of their conservation needs. Unfortunately such an attempt has never been made in India before the publication of the book “Red List of Macro Fungi of India” by Dr. N. S. K. Harsh, supported by the scientists of Indian Council of Forestry Research & Education namely Rajesh Kumar, Dr. Ashwani Tapwal, Dr. Sangeeta Singh, Dr. Manoj Kumar, Dr. V. Mohan, Dr. R. K. Verma and Anuradha Sharma and University of Jammu Dr. Yash Pal Sharma and Dr. Sanjeev Kumar. In this First Red List of Macro-fungi of India 74 species were assessed, among which 2 species are Critically Endangered (CR), 4 species are Endangered (EN), 8 species are Vulnerable (VU), 3 species are Nearly Threatened (NT), 48 species are Least Concerned (LC) and 10 species are Data Deficient (DD).

The Red List of Macro-Fungi of India will be brought to the notice of policy makers and Government using direct contacts as well as through the good offices of the National Focal Point for Convention on Biological Diversity in India, focusing on conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. The Red List will help the Indian Govt. in setting national biodiversity targets, motivate for selection of areas for protection, raising government and public interest and help in identifying fungal species in specific national conservation action programmes. This will attract, educate, engage and facilitate activities by both professional and amateur mycologists in conservation of fungi in India including their habitats.

It is proposed that in next assessment for the Red List of macro-fungi of India, species reported only once, 40 – 50 years ago or earlier will be checked out with data and ground verification, to rule out elimination of those species from the habitat.

\*Harsh, N. S. K. 2021. Red List of Macro-Fungi of India, Self-published with financial support from The Mohammed bin Zayed Species Conservation Fund and Uttarakhand Council of Science & Technology, Dehradun, India, 163 p.