

M.S.Swaminathan Centenary Lecture Series by Professor Kamal Bawa, University of Massachusetts, Boston and Ashoka Trust for Research in Ecology and the Environment, Bengaluru on **Agrobiodiversity and Our Natural Heritage: Honoring Dr MS Swaminathan** at M.S.Swaminathan Research Foundation, Chennai on **Thursday February 06, 2025**. The Lecture begins at **11.15 am IST**.

Abstract: It is a privilege to deliver a lecture in honor of Dr. M.S. Swaminathan and speak about issues so close to his heart. Throughout his life, Dr. Swaminathan was deeply committed to agrobiodiversity and biodiversity. In his later years, he became increasingly concerned about the continuing loss of our tremendous biological heritage and often emphasized the need for a second Green Revolution rooted in biodiversity.

Agrobiodiversity is critical for food and nutritional security and mitigating and adapting to climate change. Yet, over the past several decades, agrobiodiversity has experienced significant erosion at all levels. While there is considerable discussion about agriculture based on agroecological principles, we still lack a clear strategy for evaluating the short-term and long-term performance of various agroecosystems. Furthermore, the extent to which alternative agroecosystems can replace modern agriculture, emblematic of the first Green Revolution, remains uncertain. Equally uncertain are the policies and institutional frameworks needed for this shift.

Beyond agrobiodiversity, overall biodiversity—the foundation of agriculture—is also being lost at an alarming rate. As a megadiverse country, India boasts four of the world's 36 global biodiversity hotspots. The government is one of Vavilov's eight centers of crop biodiversity and is today regarded as the eighth most biodiverse region in the world. Yet, India has been recently ranked 176th out of 180 countries in terms of biodiversity loss and efforts to conserve it. Data from the Forest Survey of India over the past two decades indicate a significant reduction in dense forests and an increase in open forests.

India faces a conundrum - a rapidly growing economy and a precipitous decline of biodiversity and natural capital. Fueling both is agriculture as India steadily increases its food production to meet its and the world's needs. India's aspirations to become the third, or perhaps the largest, economic power will prove challenging, if not impossible, to fulfill without better stewardship of its natural capital, including land, soil, and air. Indeed, there are examples and strategies to restore agrobiodiversity and reinvigorate our natural heritage. Furthermore, technology and artificial intelligence (AI) can unleash new possibilities and opportunities, provided we can create an appropriate policy and institutional framework.

Dr. M.S. Swaminathan would have inspired and urged us to address our pressing challenges with urgency and determination. A renewed commitment to a paradigm shift to rebuild and augment our natural capital would be a fitting tribute to the most accomplished and celebrated agricultural scientist of our time.

About the Speaker: Kamal Bawa (www.kbawa.com) is Distinguished Professor Emeritus of Biology at the University of Massachusetts Boston, and Founder-President of the Ashoka Trust for Research in Ecology and the Environment (ATREE), one of India's top-ranked environmental think tanks, based in Bangalore. During the last 5 decades, he has done extensive work in the Himalaya and the Western Ghats on a wide range of issues from biodiversity conservation to climate change, publishing more than 230 papers and 10 books.

Among the many awards he has received are: Bullard Fellowship at Harvard University, Guggenheim Fellowship, Pew Scholar in Conservation and the Environment, Giorgio Ruffolo Fellowship at Harvard University (2009), the GUNNERUS Prize in Sustainability Science from

the Royal Norwegian Society of Letters and Sciences, the international MIDORI Prize in Biodiversity from the Aeon Foundation in Japan, the Linnean Medal, and honorary doctorates from the University of Alberta, and Concordia University in Montreal. He is an elected Fellow of the American Academy of Arts and Sciences, the Royal Norwegian Society of Letters and Sciences, the Royal Society, the American Philosophical Society, and U.S. National Academy of Sciences. Kamal Bawa is founding Editor of two interdisciplinary journals: *Conservation and Society* (<https://www.conservationandsociety.org.in>) and *Ecology, Economy and Society* (http://ecoinsee.org/journal/eb_editors). His latest coffee table book *Himalaya: The Mountains of Life*, a companion volume to *Sahyadri: India's Western Ghats*, was published in 2013.