



Prof. Sulochana Gadgil



Prof. Sulochana Gadgil is one of the world's leading monsoon meteorologists, having made significant contributions to our understanding of the Indian monsoon and its variability, its links with atmospheric convection over tropical oceans and the relationship of such convection with the sea surface temperature (SST). Her excellent training, with a Ph. D. in Applied Mathematics from Harvard and a post- doctoral with Prof. Jule Charney at MIT, and the vibrant atmosphere of the Indian Institute of Science which she joined in 1973, made it possible for her to carry out cutting edge research in India, conducted in collaboration with scientists from different institutions in the country.

She began her work on the monsoon with a landmark paper reporting the discovery of the important role played in the Indian summer monsoon by the formation and northward propagations of the cloud band over the equatorial Indian Ocean. Her studies demonstrated that the monsoon is not a gigantic land-sea breeze but instead is a manifestation of the seasonal migration of a planetary scale system which is seen over non-monsoonal regions as well. She was amongst the first to analyze satellite- derived cloudiness over tropical oceans and demonstrate the presence of a SST threshold of about 28°C for organized convection. Her studies of the inter-annual variation of the Indian monsoon have shown that there is a strong link with the equatorial Indian Ocean Oscillation (EQUINOO), in addition to the well- known link with El Nino and southern oscillation (ENSO), which has important implications for improving the monsoon variability simulation in models.

One of her significant contributions has been bringing together perspectives and data from disparate fields. No economist had quantitatively assessed the impact of the monsoon on agriculture and the GDP; so Sulochana Gadgil did that and showed that despite a substantial decrease in the contribution of agriculture to the GDP over the last five decades, the impact of droughts on the GDP has remained large (2 to 5%) throughout.

She has taken the lead in organization of interdisciplinary research engaging in collaboration with agricultural scientist, ecologists as well as farmers, and to identify farming strategies tailored to rainfall variability so as to maximize long-term average returns.



Prof. Sulochana Gadgil played a key role in the establishment and nurturing of the Centre for Atmospheric and Oceanic Sciences at the Indian Institute of Science. She has spearheaded the development and execution of the Indian Climate Research Programme with major programmes over the Bay of Bengal, the Arabian Sea and Indian monsoon zone. She is a Fellow of the Indian National Science Academy, the Indian Academy of Sciences, the Indian Meteorological Society and has received several awards including the Norman Borlaug Award.

In recognition of her outstanding contribution to Earth System Science, the Ministry of Earth Sciences honors Prof. Sulochana Gadgil with “Life Time Excellence Award in Earth System Science” for the year 2016.