Profile

From Species to Ecosystem and Beyond: A personal odyssey

I am an entomologist and evolutionary ecologist by training. One of the reason for my interest in insect is their sheer diversity, their unique life history, and their importance in the food web (their functional roles as herbivores, carnivores and detritivores).

Since early in my scientific career, I have been closely working with parasitoids, specifically as it relates to biological control. My research centered on quality control of parasitoids in mass rearing facilities, which include subjects related to sex ratio, foundress effects, fitness effects, host preferences, behavourial ecology, and physiological ecology of host parasite interaction. Mass release and effectiveness of parasitoids in the field is also one of my core research. Through my research on host-parasite interaction, I gained a deeper understanding of how parasitoids play a significant role in the whole food web. Thus, the start of my interest in conservation biological control, i.e. conservation of agroecosystem and ecological agriculture, which further fuels my interest on insect conservation, particularly as it relates to agriculture-conservation interphase.

Insect conservation and insect diversity studies have been conducted under different settings, from agroecosystem, national parks, agroforestry, which started with the interest on natural enemies (i.e parasitoids) and landscape ecology. Questions pertaining to issues of conservation of natural enemies and diversity of natural enemy complexes became a part of my research interest. My research then expand to issues of land use change and insect diversity and the ecosystem services provided by a range of insect groups, from pollinators to natural enemies.
During the latter years of my work, I have become more involved with policy issues as it relates to agroecosystem health. Through my research, I gained the understanding that advancement of knowledge and technology without empowering the grass roots are not sustainable. It is through farmers’ empowerment that sustainable agriculture can work on the ground. All of these experiences has aided me in gaining understanding of the importance in integrating basic as well as action research, policy analysis and designing participatory programs for conservation actions in Indonesia.

As humans advanced, and science and technology further developed, there are concerns that touched my heart. This relates to the advancement in biotechnology. Thus, the start of my journey to understand more about transgenics, ecology as it all relates to ethics and philosophy of life. For me especially, the background of all my concerns in agriculture and conservation is tropical island nations. As an insect ecologist and crop protection specialist, my question is constantly: how does technology affect the evolution of crop protection worldwide? How does it affect the island nations? Transgenics and sustainability, transgenic and biological control, transgenic and IPM: where are we and what are facing the future of crop protection in Indonesia? What is the role of globalization towards crop protection? As science advances and people have more knowledge, does science and technology actually help the farmers? Are what we do, in the name of the advancement of sciences and technology for the betterment of the lives of people, really affects people’s livelihood? The research that I do, as basic as it is, is ultimately, geared to make people’s live better. How do we ensure this? Science and ethics are intertwined and I believe that science without ethics will result in disaster. There is an urgent need to open more access to more discussions and network. Collaboration is a key to make changes for the future.