Self-esteem, self-confidence, and self-motivation for the development of ecology in China

Self-esteem

As a discipline, ecology has emerged on the scientific platform for one and a half centuries. Focusing on the interactions among organisms and their environment, ecology is innately linked very closely to the realities of nature and production. Ecology has accumulated a great deal of fundamental scientific information through integrated survey and long-term scientific research, and offers a basic foundation for the development of agriculture, forestry, husbandry, and aquaculture, as well as the development, utilization and conservation of natural resources. Nevertheless, due to shortcomings in its theoretical framework and research methods or instruments, and its often narrow-minded tendency toward pure naturalism, among the biological sciences it had remained a discipline that attracted less attention from the general public before the mid-twentieth century. Some even disputed the necessity of its existence. After the 1960s, however, increasingly severe global issues emerged, which resulted from the inharmonious development of the world population, economy and declining state of natural resources, and they were problems that could hardly be addressed through traditional linear thought or any single discipline. In response, ecology has ascended to provide a scientific foundation and framework for solving such crises with its traditional and modern environment monitoring and simulation methods that inherently benefit from nonlinear thinking patterns, systematic viewpoints, comprehensive theories, and multidisciplinary research.

It was the ecological researchers that first pointed out the problems with modern ecology and the environment and played a vital role in arousing the sense of importance of ecological protection among the public. In the 1960s, the ecologists initiated the International Biological Plan (IBP) around the world and pointed out the limitations of resources through an investigation to assess the global biological productivity. They have made an indelible contribution to the preparation of subsequent major efforts: The Man and Biosphere Programme (MAB), International Union for Conservation of Nature (IUCN), DIVERSITAS, International Geosphere-Biosphere Programme (IGBP), and many other NGO agreements and conventions with governments.

Ecological researchers are active advocates and participants in the process of sustainable development from concept to action to outcome. They used the knowledge of this subject and cooperated in the spirit of brotherhood, playing a vital role and providing theoretical support for the sustainable development strategy which became the basis of the “Agenda 21” adopted by the UN General Assembly. We are proud to see that ecology is no longer, as it once had been, a subject criticized by people as a “no-man-made” and a subject for which the only answer was “NO.” It not only enters the ranks of contemporary science with its own unique practices and brand-new appearance, but it has also received broad attention from the common people to the heads of government and has become a significant “bridge between science and society.”

The study of contemporary ecology has paid increasing attention to integration with the masses and combining the needs of social development and production practices. Ecology has not only been accepted by the scientific community, but it has also been placed prominently on the social and public stage. In particular, it has become a kind of slogan and symbol. From the common people to the political decision-makers, from the people in the countryside to the conference hall of the United Nations, ecology has become a widely used term and slogan.

We are particularly pleased that ecology has also promoted the development of the subject itself in the process of participating in social changes. This is mainly reflected in several ways. First, ecology has transcended its original biology and geography categorization, and has become the basis and the applied science for the study of the interactions between biology, environment, resources and humans. Second, the spatial scale of ecology research continues to expand, breaking through the research areas of traditional individuals, communities, and ecosystems, by developing macroscopically to landscape, regional, and global scales, and alternatively, extending microscopically to organs, cells, and molecules. The time scales of ecological study have developed from the description of current phenomena to historical backtracking and future predictions. Third, the research-object of ecology extends from the natural ecosystem to the complex social-economic-natural ecosystem, from the study of structure and function to that of process...
and pattern, and from partial, isolated research to the whole, networked approach. Ecology and other subjects have many binding points, with new branches continuously emerging. In terms of research methods, the main development has been from qualitative description to quantitative simulation. At present, ecology has completed a new round of nirvana from an unrecognized ugly duckling, and it is increasingly showing a vibrant life with great promise for the future.

**Self-confidence**

China has vast territory and diverse natural conditions. The diverse ecosystems which include Tropical Zones and Frigid-Temperate Zones, mountains and plains, deserts and seas, forests, and grasslands provide an unparalleled natural laboratory for conducting systematic ecological studies. In addition, ecological ideas in ancient Chinese philosophy, such as “Heaven and earth are in harmony with humans” and “San Cai” and the view of overall, coordinated circulation provide a solid philosophical foundation for understanding and regulating the interrelationships between biology, environment, and humanity. Moreover, for thousands of years, working people in China have explored and summarized a set of practical experiences and technical systems which are consistent with ecological theory and have employed sustainable development ideas in their production practices.

Now, the development of ecology has ushered in another “boom.” The government proposed to accelerate the reform of the ecological civilization system, building a beautiful China, and listed “Insist on the harmonious coexistence of humans and nature” as one of the 14 basic strategies. It not only proposes a direction for the future social development of our country, but also plays an important role in guiding and promoting the progress of ecology. Meanwhile, China’s rapid economic development and the continued expansion of its national strength have provided the material basis for the further development of ecology. National funding for ecology research has increased year by year, the experimental equipment infrastructure has developed rapidly, and research on the positioning-observation of the structure and function of the ecosystem has formed a vast network.

Since its foundation in 1979, the Ecological Society of China has evolved from the first few hundred visionary members to today’s scale of nearly 10,000 people. It has played an important role in the academic community and has achieved a very high social reputation. China’s ecological research institutions and education system have constantly progressed. In 2012, ecology was upgraded from a second-level subject in the Department of Biology to the first-level discipline status that it deserves. A number of specialized ecological colleges and departments are also being constructed and developed.

Along with the governmental emphasis on ecology and the continuous efforts of ecological researchers, we have also made considerable progress in international collaboration. Ecological researchers have actively participated in and lead many important international programs and have also made significant progress in the research of Chinese ecology.

**Self-motivation**

Confronted by fierce competition, China’s ecological researchers still have certain disadvantages in some fields compared to their international counterparts. There are many reasons for this. First, China’s ecological science started later, while the historical intellectual momentum that is generated by mentors, whose students then become the mentors of many new students, and so on, always requires at least a few generations to mature. Second, the traditional ecological knowledge in our country is lacking in systematic summarization and improvement. Third, in the face of tackling pressing problems at the national and local levels, there is a lack of adequate domestic scientific knowledge in reserve to apply to these rapidly emerging issues.

We are particularly worried that the current short-term reward mentality of some, with the single-minded pursuit of the quantity of publications and rewards for “newsworthy results” as well as a learning culture eager for quick success and instant interests, has led to unstable connections among researchers and questionable research work in some local governments and institutions.

To improve our research quality, we call on relevant departments to revise and improve the current systems of research performance appraisal and achievement review. We also call on Chinese ecological researchers to reflect on the ancient and modern history of ecological research, to reflect on the pros and cons of ecological research in China, to reflect on the optimization of ecological research strategies and tactics, and to reflect on the historical responsibilities and the spirit of struggle, dedication and innovation of the ecological researchers.

The youth is the hope of the future, and the pillar of science. We sincerely hope that today’s young ecologists at the forefront of the field will continue to innovate, do solid basic research in a down-to-earth way, carry forward team spirit, and work together to climb the highest peaks of scientific achievement.

In international exchanges and cooperation, we always need to be rational, steadfast, neither humble nor pushy, and mutually beneficial. We must not only learn from the advanced international experience, but also consider our country’s actual conditions. We must be neither conceited nor complacent and blind.
Many believe that with the gradually increasing prosperity of the country and the increasing input into scientific research, the ecological researchers in China, especially the younger generation of scientists, will surely make greater contributions in the international arena, will continue to create miracles in the urgently needed social practices of the state, and will embrace new glory in the Olympic Games arena of ecological science.