
Editorial

Jouni Korhonen

Faculty of Technology
Department of Industrial Management
Åbo Akademi University
Piispankatu 8, FI-20500, Turku, Finland
Fax: +358 2 215 4791
E-mail: jouni.korhonen@abo.fi

Biographical notes: Academy Fellow, Docent and Research Director Dr. Jouni Korhonen, from Åbo Akademi University (Finland), is the Editor-in-Chief of *Progress in Industrial Ecology – An International Journal* (PIE), Inderscience Publishers and the Industrial Ecology Subject Editor of *Journal of Cleaner Production*, Elsevier Science.

This journal was established owing to the growing concern in our field and also in the commentaries in other related fields that industrial ecology will not achieve progress in sustainable development without a bridge to social sciences. Obviously, the closest fields in this sense are business studies, studies of management and organisations, and policy studies. Descriptive materials and energy flow metabolism research can inform human decision making. But the measurement of flows is only one part of the science required for change towards sustainable development in practice. More prescriptive suggestions and proposals for policy instruments and corporate sustainability management systems arise through learning from social sciences.

Research areas from which to draw can include ecological economics, ecological modernisation, decision-making sciences such as multicriteria decision analysis, environmental policy, regional studies, corporate social responsibility, sustainability management and corporate environmental management, *etc.* Unfortunately, despite many calls for interdisciplinary and even transdisciplinary research, the modern academic world is still fragmented. Scholars have neither time nor resources to read widely. The pressures to specialise are strong. Careers must first be secured before 'risk taking' in unfamiliar theories, concepts, methods and analysis can be considered.

Industrial ecology is presented by its founders as a potential 'science of sustainability'. Such a holistic science would by definition incorporate the diverse array of disciplines and fields in sustainable development research under its domain. A holistic perspective is a welcome initiative in the still persistent reductionist paradigm of science. Yet I believe there is much work to be done to achieve such a position, for industrial ecology has clearly been dominated by engineering- and natural science-derived approaches and tools. Further, there seem to be many other subfields of sustainability science attempting a similar status. Regardless of the actual relevance or importance

of pursuing industrial ecology as a 'science of sustainability', the inherent diversity and complexity of the sustainability question requires real, practical and documented cooperation within the larger sustainability science community.

Progress in Industrial Ecology (PIE) is one of the journals of the International Sustainable Development Research Society (ISDRS, www.isdrs.org). Industrial ecology and industrial symbiosis have been exceptionally visible in the last three annual conferences of ISDRS. The *11th, 12th and 13th Annual International Sustainable Development Research Conferences* at Helsinki, Hong Kong and Västerås, respectively, have featured industrial ecology research among the central themes of these international events that attracted around 400 participants. Many other journals support the ISDRS annual conference as well, e.g., *Sustainable Development, Journal of Cleaner Production, Business Strategy and the Environment, Corporate Social Responsibility and Environmental Management* and *European Environment*. Internationally established publishers involved include Inderscience Publishers, Elsevier Science, John Wiley & Sons, etc.

The support from the peer-reviewed journals within the ISDRS community give industrial ecologists a fruitful opportunity to air their work outside the immediate system boundaries of the industrial ecology research community. Industrial ecology scholars receive important critiques, reviews and comments from experts in other fields of sustainability science. Prominent cleaner production and industrial ecology professors have appeared as keynote speakers, session chairs and workshop organisers in these annual ISDRS conferences, e.g., Professor Don Huisingh, Professor Karl-Henrik Robért and Professor Roland Scholtz. In turn, one of the founders of the field of corporate environmental management/business strategy and the environment, the co-founder of ISDRS, Professor Richard Welford, has openly welcomed the contribution from industrial ecology and cleaner production communities and engaged in an open dialogue with industrial ecologists.

The philosophy of ISDRS has been to allow diversity of fields and approaches, but also to place special emphasis on the diversity of cultures, countries and continents. Cross-country comparisons involving all the continents of the world transparently illustrate the value of considering the case-specific and situational factors that determine the applicability of scientific concepts such as that of industrial ecology in various policy and management settings.

The *14th Annual International Sustainable Development Research Conference* will take place in New Delhi, India in September 2008. The conference was announced at the 13th annual conference in Västerås. The response of the community was to welcome this effort to move from Europe and Scandinavia to Asia. India is one of the fastest growing economies and populations of the world. The challenges of sustainability are very difficult to tackle in the developing countries. Two-thirds of the world population will live in India and China in the coming years, and raw-material and energy supply challenges as well as those of waste and emissions generation are huge in these settings. The social and cultural dimension of sustainable development, e.g., in terms of problems of poverty, cannot be addressed in isolation from the ecological dimension in Asia.

One of the main focus areas of the 14th annual conference will be the effects of climate change in Asia and the global cooperation for mitigating climate change. Industrial ecology will continue to feature in the main program and in the special tracks or workshops of this annual event. I believe industrial ecology scholars have an excellent opportunity at the New Delhi conference to learn how important and restrictive

the cultural, social, institutional and economic situational factors can be as barriers to the implementation of industrial ecology in societal development. Such barriers and obstacles are much more difficult in the developing countries than in the developed countries. The young field, concepts and tools of industrial ecology have been innovated on and developed in the rich part of the world during the field's 20-year history. The existing tools must be modified or integrated, or new tools established in order to make industrial ecology suitable and strategically relevant to the sustainability policies employed in Asia. Case studies in local contexts and experience sharing among industrial ecologists of developed and developing countries are needed to deliver on these challenges.

The research conference is going to be output orientated. Several special issues in the above mentioned peer-reviewed journals, including PIE, are planned for selected topics. The targeted 600 participants for the conference provide a fruitful platform for publication output. For example, we are in the process of working on a PIE special issue on 'Industrial Ecology in Asia' to compare the experiences on industrial ecology, cleaner production, eco-efficiency and related research across continents. The New Delhi conference is a good opportunity to present this project and develop it further together with the scholars present on-site.

The conference also wants to organise special PhD workshops in sustainability science including industrial ecology. PhD students are invited to submit abstracts for these sessions and have a chance to pursue the many journal avenues available for the conference presentations and papers. It would be especially important to innovate in education and PhD projects in the Asian context. There are different alternatives to make progress with this idea. For example, PhD students enrolled in European or US universities can implement part of the project through research visits in Asian research groups. New PhD programs could also be launched in Asian universities. Conferences such as the ISDRS New Delhi event are fruitful occasions for planning for these kinds of projects and, for example, planning for funding proposals for the programs together with international partners. For example, I know from experience in my home country of Finland that the Academy of Finland, the main scientific research funding entity in the country, is continuously highlighting the importance of collaboration between Finnish and Asian sustainability scientists, including PhD students.

The above issues are good examples of the many opportunities and challenges of industrial ecology research in the global society. It is clear that industrial ecology is a provocative and powerful concept and that, through this potential, it can be used for the benefit of the broader sustainability science. The fact that PIE has already been extended for two years into six issues a volume is another example of the lively discussion our field can create. We thank the patience and quality work of the authors and reviewers of the following five peer-reviewed research articles in this issue of *Progress in Industrial Ecology*.