

Global Change Management: from blindspots to systems analysis

- 09:45-10:00 Welcome address (*Prof. Dr. Wilhelm-Günther Vahrson (President HNEE), Prof. Dr. Martin Welp (Head of Global Change Management)*)
- 10:00-11:30 Book presentations
- Global Change Management: Knowledge Gaps, Blindspots and Unknowables.
Dr. Peter Hobson (Centre for Ecomics & Ecosystem Management / Writtle College)
- Donation of books to students of Global Change Management
Stefan Opitz (Deutsche Gesellschaft für Internationale Zusammenarbeit)
- Human-Nature Interactions in the Anthropocene: Potentials of Social-Ecological Systems Analysis.
Prof. Dr. Udo Simonis (Wissenschaftszentrum Berlin für Sozialforschung)

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Lecture given by Pierre Ibisch in place of Peter Hobson

Happy birthday, Global Change Management!

We are *happy*. Our dreams and visions have become true: Global Change Management is a successful, accredited, and international study programme. We have bright students from all over the world. This year, there are about ten nations represented. There have been many more applicants than places. We have a great, loyal and supportive advisory board with distinguished personalities. We have prestigious partners of the study programme continuously providing input and support. And, continuously, there are new opportunities arising.

Last year, together with **Peter Hobson** from Writtle College, UK, - who unfortunately, today, cannot be with us - we founded our Centre for Ecomics and Ecosystem Management. As centre we are committed not only to joint research and development activities, but also to actively support our universities' study programmes and to generating career opportunities for our students. Of course, Global Change Management is one of our favourite programmes. With the research professorship awarded to my person, we are now able to actively involve Peter in several modules of the programme, diversifying and tightening the relationship with Global Change Management.

Thank you, Global Change Management. The programme unfolded some emergent properties impacting not only the orientation and visibility of our University for Sustainable Development, but it also helped to focus and develop

our research. Today, we want to give back something to the programme and present the first book ever that embraces Global Change Management in its title. By the way, it is also the kickoff of the *Series for Economics and Ecosystem Management*, published by Nomos.

We thought it might be a good birthday present, which we hereby hand over with our gratulation. Now I understand that I should say some words about the book itself. Well, how to start? Maybe: "I don't know!" It is a book about not knowing.

"*Global change management* was designed as a 'transdiscipline' that strives for the avoidance and mitigation of impacts that anthropogenic global change has on natural and social systems, as well as for their adaptation to unavoidable change processes. (...) [It] is also understood as a *change management* which induces change in individual and institutional approaches working towards a sustainable and proactive management of natural resources" (...) "Global change management acknowledges that sustainable development has become an increasingly difficult endeavour since activities of social systems have triggered changes in the global environment. Nowadays, sustainability does not only mean that future generations shall have a comparable access to resources for development as the current ones, but also that their development chances must not be significantly decreased by the impacts of current global change.

Thus, the scientific study of sustainability also deals with the functioning of the World's systems, the drivers and pressures influencing them, and the outcomes of (global) changes. As sustainability science is expected to inform policy and action it is a special challenge to effectively move from problem-focussed 'know what' to solution-oriented 'know how'. And as *knowledge* about sustainable systems and their management seems to be much smaller than the corresponding *ignorance* or - more broadly speaking - *non-knowledge*, it is a key goal of this publication to stimulate reflection about this very problem. The underlying idea being, that dealing with non-knowledge - recognized or not, unintentional or consciously created - is a major and crucial topic of global change management" (Ibisch, Geiger & Cybulla).

This was a citation from the book's preface, we have written together with two real *Global Change Managers*: **Laura Geiger** and **Felix Cybulla**. They have played

an important role in preparing and materializing this book. After receiving an ‘initial injection of non-knowledge’, they pushed us forward to further explore the topic. This led to a unique event, a workshop dedicated to non-knowledge, and especially to blindspots, these things we do not know and are not even aware of ... An event initiated and co-organized by our students. This blindspot workshop was held about two years ago, and this book is also a consequence and product of this event, which stimulated further research. Two protagonists of the workshop kept on developing the idea and finally co-edited this book. Thank you very much, Laura and Felix, and congratulations to this exemplary effort!

The blindspot workshop was also celebrated in partnership with the Centre for Climate Science and Policy Research, Linköping University in Sweden. Currently, this collaboration, among others crystallizes by the research stay of **Sabine Henders**, here at our Centre. And we are happy that our Swedish colleagues **Victoria Wibeck** and **Björn-Ola Linnér** have contributed to the book. Their chapter “deals with public understanding of uncertainty in climate science and policy taking a closer look at how laypeople perceive and make sense of the non-knowledge about the topic. Based on original research with Swedish focus groups, among others, the authors conclude that the uncertainty about causes and consequences might not be the most pressing issues. Rather they see that the questions regarding the individual responsibility to mitigate climate change and the effectiveness of responses to climate change can be even more confusing. An implication for global change management would be to address more systematically the blindspots related to effectiveness of policies and measures tackling climate change” (Ibisch, Geiger & Cybulla).

One of the prestigious partners that contributed both to the workshop and the book is the Deutsche Gesellschaft für Internationale Zusammenarbeit, GIZ, today represented by the respected member of the advisory board, **Stefan Opitz**, who will speak to us later. **Jan Schwaab** “discusses knowledge that is relevant to decision-making” and therefore ‘decision-useful’, “but which, for a variety of reasons, is still unknown, from the applied perspective of development cooperation. The recognition and elimination of blindspots, in the last decades, regularly triggered a series of paradigm shifts concerning development goals and measures. It is pointed out that in development cooperation, decisions often involve a high level of risk or uncertainty, and there are manifold reasons for this.

Modern practices and tools, such as participatory and inclusive work minimize several blindspots. A key element of the German development agency's (GIZ) approach to learning and knowledge management is to produce a cultural change towards greater openness and flexibility. The unexpected and surprising must not be seen as a disaster or disturbance" (Ibisch, Geiger & Cybulla).

Another chapter has been contributed by **Sascha Czornohus** and **Katrin Dobersalske**. They are with the International Centre for Sustainable Development of the Bonn-Rhein-Sieg University. The president of this university, **Hartmut Ihne**, is an esteemed member of the advisory board of the Global Change Management programme and honorary professor of our university, actively and regularly providing contributions to various modules. Sascha Czornohus and Katrin Dobersalske deal "with the currently developing systems of knowledge conservation with a special emphasis on local knowledge. The relevance of this local knowledge seems to represent a knowledge-gap or actually a blindspot in the industrial world. Paradoxically, certain local knowledge (in developing countries) has been discovered as valuable source for industrial innovation. This does not only lead to its extraction but may even cause its destruction. After a long and intensive discourse on biopiracy and the conservation of intellectual property rights attached to biodiversity, many questions remain unsolved, and, apparently, legal instruments alone cannot guarantee the protection and maintenance of local knowledge".

Actually, for our roots and our 'forested environment' some people tend to think that in Eberswalde we can produce only forestry-related science. For instance, we had to discuss this kind of issues with the doubting accreditation commission. Well, while this is far from being true, we are proud of the fact that one chapter was written by a practitioner dedicated to sustainable forestry. It is the well-known former communal forester of the city of Luebeck, **Lutz Fähser**, who contributed his revolutionary concepts and results. He "postulates that forest ecosystems are far too complex and frequently characterized by uncertainty and indeterminacy to be managed under the traditional deterministic and mechanistic forestry regime controlled by a few actors. Rather he calls for a black box approach acknowledging that forests are insufficiently understood systems and that forest management decisions are made under uncertainty. Forest

management would have to be a method of adapting to nature with a nature-oriented approach and represent an open and participatory process. Drawing on the experience of almost two decades of implementing the concept of nature-oriented forest use in the communal forest of the city of Luebeck in northwestern Germany, it is shown that this kind of non-knowledge-based approach to natural resource management produces positive ecological and economic results” (Ibisch, Geiger & Cybulla).

The head of the Global Change Management programme, **Martin Welp**, together with **Ingo Frost** “analyzes how stakeholder dialogue exercises with diverse participants holding different bodies of knowledge can contribute to closing some knowledge gaps. It elaborates on how organisations can deal with non-knowledge especially in strategic decision-making. It calls for organisational learning that supports the assessment and management of risk related to global change. Scenarios and Bayesian Networks are discussed as tools of (non) knowledge management” (Ibisch, Geiger & Cybulla).

The book also integrates a couple of chapters written by colleagues with the Centre for Economics and Ecosystem Management, among others dealing with theoretical and practical aspects of biodiversity conservation. The chapter led by Laura Geiger presents a practical approach to risk management in conservation planning – a method currently developed with the GIZ, and which is called MARISCO.

Do you really want to know everything you could know? Do we have to know, what we don't know? Other authors recognize “that a more reflexive knowledge society would be characterized by both knowledge expansions as well as by legitimate spheres of non-knowledge (...)”. For instance, this refers to pre-implantation diagnostics or individual health. Of course, ignorance can be dangerous or can cause harm to other people. Even more “than bad intention. In cases where knowledge is the precondition for correct action, education and learning become a moral duty to society (...). If a principle of responsibility [, Prinzip Verantwortung] (*sensu* [Hans] Jonas) is accepted and interpreted strictly to prevent any foreseeable future harm to society, then there is also an obligation to eliminate as much sustainability-related non-knowledge as possible” (Ibisch &

Hobson). This is quite an ethical challenge to a society that is overburdened by the outcomes of information explosion. As individuals we are condemned to stay ignorant regarding most fields of existing knowledge. But, if there is a duty to know sustainability-relevant information, ... and we simply cannot learn it all, ... the hyperexponential progress of knowledge generation makes us increasingly guilty. Or do we have the right to say: I do not want to know!?

We also introduce “the concept that knowledge (management) is actually found in all natural systems contributing to an intelligence that is a critical factor of system sustainability”. The question is if we can learn from nature for knowledge management. “This *econical* approach integrates systemics, vulnerability and adaptation science and calls for acknowledging the advantages of *heuristic* decision-making in adapting to change and unknown outcomes of complex system functioning” (Ibisch, Geiger & Cybulla). Heuristics is experience-based problem-solving; a flexible and non-deterministic decision-making that is following certain guiding rules, which can be based on evidence, but not exclusively. It is prepared for surprises, accidents and risks, as they permanently occur in the real world.

Econics is a new “transdisciplinary approach to studying the dynamics and functioning of (...) ecological systems with the aim of deriving management solutions for natural resource-dependent socio-economic systems as a gateway towards sustainable development under global change” (Hobson & Ibisch), and we have used the book for further exploring and describing this approach.

“Econical research questions are:

- What makes ecological systems efficient?
- What are the drivers of system evolution in a changing world?
- How do ecological systems become resilient against disturbances?
- How do they adapt to changing framework conditions?
- How are efficiency and resilience balanced by sustainable ecological systems?” (...)

In the first part, the book “provides a general introduction to non-knowledge in the context of sustainability and global change management. It questions if effective global change and sustainability management can ever be evidence-based, and it postulates that non-knowledge illiteracy paradoxically is a major challenge to the knowledge society and education”. *Non-knowledge illiteracy?* Yes, not knowing how not to know! Our society is programmed to accumulate

knowledge, to identify knowledge gaps and strive for evidence; but we are not scientifically trained in living and working with all the things we do not know and that cannot be proven.

The book “gives an overview over different forms of relevant non-knowledge and suggests approaches (...) to integrate non-knowledge into education curricula, working towards a new age of enlightenment. *Global change managers* would be tasked with preparing society for the increasingly uncertain challenges of the future. This would include an induction in adaptive management strategies for complex systems that are characterised by indeterministic tendencies and high risk” (Ibisch, Geiger & Cybulla).

In science, we got accustomed to reduction and simplification for the sake of knowledge generation. “The irony here is that the relentless pursuit of scientists to unravel the mysteries of nature by drilling ever deeper into the known continues to expose the scale of non-knowledge and ‘unknowables’, a case of chasing the wind for ever more.

This perspective exposes a possible flaw in the human relationship with the rest of nature that may answer some of the problems that have to do with unsustainability. Human skills in logical cause-effect thinking and algorithm development have enabled us to build globalised complex social systems, and to substantially manipulate the ecosystems we depend on. Notwithstanding, it also represents a trap in the sense that we tend to overestimate the role of knowledge and our capability of understanding complex systems. *Homo algorithmicus* ignores the relevance of the unknown” (Hobson & Ibisch).

As modern scientists, we are all children of the Age of Enlightenment. This age “marked a revolution in knowledge exploration that unleashed a new wave of technological innovation” (Hobson & Ibisch). Faith and simple belief were replaced by systematic and replicable procedures of knowledge generation. The subsequent increase in global knowledge and technology constructed our knowledge society. It also “led to an enormous degree of individual ‘freedom of choice’ that could not be imagined by earlier generations. Unfortunately, the cost of this individual freedom is a level of resource consumption that ultimately may catalyze the collapse of the greater ecosystem – a tragic potential outcome of

enlightenment” (Hobson & Ibisch). Just knowledge, more and more knowledge may be not enough to counteract.

As Michael Smithson has stated it: “*Knowledge is power, but so is non-knowledge*”. In global change management even more so.

In the past we had learn that our planet is not the centre of universe. We had to swallow that our species is just another ape and not the end point of biological evolution. We finally face that there are limits to growth on this planet. And now, last but not least, we – modern *knowledge society* - have to accept that we cannot know it all – the limits to knowledge. We are unable to control complex systems just by accumulating knowledge, which we often tend to confuse with proof and evidence. As university teachers we have to think how to teach not only facts, but much more a critical reflection of knowledge and apparent evidence; actually, this is epistemology – and also the science of non-knowledge, *nepestemology*. This seems to be dry stuff for philosophers in ivory towers, but it is not. It is also and especially needed in universities of applied sciences.

“We hope that this publication contributes to a fruitful and transdisciplinary discourse about a more effective global change management and the corresponding role of science and knowledge management. May it help to generate a broader interest in sustainability-related non-knowledge and the corresponding tools for handling it” (Ibisch, Geiger & Cybulla).

Pierre Ibisch

Eberswalde, 23.11.2010

- *Ibisch, P., Geiger, L. und Cybulla, F. (Hrsg.) 2012: Global Change Management: Knowledge Gaps, Blindspots and Unknowables. Nomos-Verlag. ISBN 978-3-8329-6714-7*

Citations have been extracted from the book. References to other publications included in the cited text have been omitted.