

CURRICULUM VITAE

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Claudia Pahl-Wostl is full professor for resources management at the Institute for Environmental Systems Research (USF) in Osnabrück, Germany. This interdisciplinary institute is associated with the department of mathematics and computer science. Its goal is to promote research and teaching in systems science at the interface between the natural and socio-economic sciences.

Since October 2001 the activities in the socio-economic area and in integrated modelling and analysis at USF are extended by the chair of resources management, initially an endowed chair of the German Environmental Foundation. Over the past decade an internationally leading interdisciplinary research programme on governance and adaptive and integrated resources management of water resources and the role of social and societal learning has been established. The research programme builds on foundations in systems science, which explicitly acknowledge the complex and often unpredictable dynamics of the systems to be managed. In 2012 the Bode Foundation Water Management Prize was awarded to Prof. Pahl-Wostl for the pioneering interdisciplinary work on “Governance in times of change” and comparative analyses of water governance in large river basins.

The interdisciplinary research team comprises scientists with diverse backgrounds in geography, regional planning, social psychology, political science, law, agricultural economics, system science, computer science, environmental science and integrated assessment. Since the foundation of the chair in October 2001 it was possible to attract additional funding of approximately 8 Million Euro from different sources with a major contribution from the European Framework Programmes.

Before moving to USF Claudia Pahl-Wostl worked for more than ten years in the field of mathematical modelling, integrated assessment and human ecology at the Swiss Federal Institute for Science and Technology, Zürich and the Swiss Federal Institute for Aquatic Science and Technology, EAWAG. She was Co-Chair of the Scientific Steering Committee of the GWSP (Global Water System Project - a joint project of the ESSP – WCRP, IGBP, IHDP and DIVERSITAS) and is now member of the executive committee of the solution-oriented “Sustainable Water Future Programme”, a core project of Future Earth. Claudia Pahl-Wostl is foundation-president and now vice-president of TIAS, The Integrated Assessment Society. TIAS promotes the community of scientists, analysts and practitioners who develop and use integrated assessment which can be defined as the scientific “meta-discipline” that integrates knowledge about a problem domain and makes it available for policy development, and societal learning and decision making processes.

Claudia Pahl-Wostl has participated in and coordinated several European projects. She was coordinator of the EU project HarmoniCOP (Harmonizing Collaborative Planning on the role of social learning and IC-tools in participation with specific emphasis on the European Water Framework Directive), member of the core group of the EU Concerted Action Harmonica (Harmonizing Modelling Tools at Catchment Scale – developing guidance for the implementation of the European Water

Framework Directive) and coordinator of the EU project cluster on the Human Dimension in Water Management.

She coordinated the Integrated Project **NEWATER** (New methods for adaptive water management). **NEWATER** developed new methods for integrated water management taking into account the complexity of the river basins to be managed and the difficulty to predict the factors influencing them. **NEWATER** focused in particular on the transition from current regimes of water management in a river basin to more integrated, adaptive approaches. The project had case studies in Europe, Africa and Central Asia, where new methods were developed and tested in participatory settings. The project involved forty partner organizations. The project has certainly led to spin-off effects in these regions in the form of recommendations to include more adaptive approaches in the implementation of policies. She coordinated the EU project **Twin2Go** (Coordinating Twinning partnerships towards more adaptive governance in river basins) which aimed at drawing general lessons on adaptive water governance in the context of climate change from a range of projects on integrated water resources management. The analyses identified factors influencing performance and assess potential and limitations of transferability of insights among basins with different economic, environmental, social and political characteristics.

PROFESSIONAL EXPERIENCE

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|----------------|---|
| 2015 – present | Member Management Board of the Institute of Environmental Systems Research |
| 2013-2015 | Senior Research Associate, IIASA (International Institute of Applied Systems Analysis), Laxenburg, Austria |
| 2011-2015 | Director of the Institute of Environmental Systems Research |
| 2010-2014 | Senior Research Fellow Resilience Centre Stockholm, Sweden |
| 2001-present | Professor for Resources Management at the interdisciplinary Institute of Environmental Systems Research, University of Osnabrück, Germany |
| 2000 | Head of the Department of System Analysis, Integrated Assessment and Modelling at EAWAG |
| 1997-1999 | Head of the Department of Environmental Physics at EAWAG |
| 1996-2000 | Head of Research Group on Integrated Assessment and Human Ecology at the Swiss Federal Institute of Aquatic Sciences and Technology (EAWAG) |
| 1989-1996 | Head of a Research Group on Theoretical Ecology and Complex Systems Analysis, Swiss Federal Institute of Technology, Zürich |
| 1986-1987 | Research Associate, SANDOZ Ltd., Basle, Switzerland |
| 1983-1986 | Research Assistant, University Basle |

ACADEMIC DEGREES

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| 1995 | Habilitation at the Swiss Federal Institute of Technology, Zürich in the field of Theoretical Ecology and Complex Systems Analysis |
| 1987 | Post Graduate Diploma in Aquatic Sciences Swiss Federal Institute of Technology, Zürich and Swiss Federal Institute for Aquatic Science and Technology, Dübendorf |
| 1986 | PhD. Biocenter of the University of Basel, Switzerland (1983-1986) - in the area of systemic approaches to study regulation of metabolic disease. Summa cum Laude. |
| 1983 | Diploma in Chemistry and Molecular Biology, Ruprechts-Karl-University, Heidelberg, Germany (1977-1983) with distinction. |

SCIENTIFIC PUBLICATIONS

Guest editor of special issues in peer-reviewed journals:

Published:

- Gupta, J. and Pahl-Wostl, C. 2013 Special Feature of *Ecology and Society* on “Global Water Governance: Challenges and Future Scope”. Editorial. *Ecology and Society* **18**(4): 54. <http://dx.doi.org/10.5751/ES-06115-180454>
- Jäger, J., Holm, P., O’Brien, K., Palsson, G. and Pahl-Wostl, C. 2013. Special Issue of *Environmental Science and Policy* on “Responses to environmental and societal challenges for our unsustainable earth”. 28.
- Vörösmarty, C, Pahl-Wostl, C. and Bhaduri, A. 2013. Special Issue of *Current Opinion in Environmental Sustainability* on “Water in the Anthropocene: New Perspectives for Global Sustainability”. *COSUST* **5**(6):535-538.
- Pahl-Wostl, C., and Ross, A. 2010. Special Issue of *Regional Environmental Change* on “Comparative Analyses of River Basin Governance” 10:4.
- Pahl-Wostl, C. and Kranz, N. 2010. Special Issue of *Environmental Science and Policy* on “Water Governance in Times of Change”: 13:7.
- Pahl-Wostl, C., Jeffrey, P., and Sendzimir, J. 2009. Special Issue of *Ecology and Society* on “Adaptive Water Management”.
URL: <http://www.ecologyandsociety.org/viewissue.php?sf=31>
- Newig, J., Haberl, H., Pahl-Wostl, C. and Rothman, D. 2008. Special Issue of *Systemic Practice and Action Research* on “Formalised and non-formalised participatory methods in natural resource management”. 21 (6).
- Pahl-Wostl, C., Gupta, J., and Petry, D. 2008. Special Issue of *Global Governance* on “Global Governance of Water: Trends, Processes and Ideas for the Future.” *Global Governance* **14** (4).
- Pahl-Wostl, C., Mostert, E., and Tabara, D. 2008. Special Issue of *Ecology and Society* on “Social Learning in Water Resources Management”.
URL: <http://www.ecologyandsociety.org/viewissue.php?sf=28>
- Borowski, I. and Pahl-Wostl, C. 2007. Special Issue of *Water Resources Management* on “Methods for participatory water resources management”. 21 (7).
- Pahl-Wostl, C., Hare, M. and Sendzimir, J. 2007. Special Issue of *Environmental Modelling and Software* on “The Implications of Complexity for Integrated Resources Management - The Second Biannual Meeting of the International Environmental Modelling and Software Society: Complexity and Integrated Resources Management”. Volume 22, Issue 5, May 2007, Pages 559-560.
- Pahl-Wostl, C. and Dowlatabadi, H. 2005. Special issue of *Integrated Assessment* on “Challenges for Integrated Assessment. *Integrated Assessment* **5** (1).
- Pahl-Wostl, C., Hoff, H., Meybeck, M. and Sorooshian, S. 2002. Special issue of *Aquatic Sciences* on: Vulnerability of Water Resources to Environmental Change - A Systems' Approach. *Aquatic Sciences*: **64** (4).

- Pahl-Wostl, C. 2002. Special issue of *Integrated Assessment* on “Integrated Assessment and the European Water Framework Directive”. *Integrated Assessment* 3 (1).
- Jaeger, C.C., Pahl-Wostl, C. and Huw Davies, H. 2000. Special issue of *Integrated Assessment* on “Integrated Assessment of Climate Change in the Alpine Region”. *Integrated Assessment* 1 (4).

Peer reviewed publications:

Publications in peer reviewed journals since 2000

- Pahl-Wostl, C. 2017. Governance of the water-energy-food security nexus: A multi-level coordination challenge. *Environmental Science and Policy*, doi.org/10.1016/j.envsci.2017.07.017.
- Pahl-Wostl, C. 2017. An evolutionary perspective on water governance: From understanding to transformation. *Water Resources Management*, 30: 2917-2932.
- Suškevičs, M., Hahn, T., Rodela, R., Macura, B. and Pahl-Wostl, C. 2017. Learning for social-ecological change: a qualitative review of outcomes across empirical literature in natural resource management. *Journal of Environmental Planning and Management*, 1-18.
- Bellaubi, F. and Pahl-Wostl, C. 2017. Corruption risks, management practices, and performance in water service delivery in Kenya and Ghana: an agent-based model. *Ecology and Society* 22 (2).
- Van der Voorn, T., Quist, J., Pahl-Wostl, C. and Haasnoot, M. 2017. Envisioning robust climate change adaptation futures for coastal regions: a comparative evaluation of cases in three continents. *Mitigation and Adaptation Strategies for Global Change* 22 (3): 519-546
- Bhaduri, A., Bogardi, J., Siddiqi, A., Voigt, H., Vörösmarty, C., Pahl-Wostl, C., et al. 2016. Achieving Sustainable Development Goals from a Water Perspective. [Review]. *Frontiers in Environmental Science*, 4(64), doi:10.3389/fenvs.2016.00064.
- Vinke-de Kruijf, J., & Pahl-Wostl, C. 2016. A multi-level perspective on learning about climate change adaptation through international cooperation. *Environmental Science & Policy*, 66, 242-249, doi:<http://dx.doi.org/10.1016/j.envsci.2016.07.004>
- Knüppe, K., Pahl-Wostl, C. and Vinke de-Kruijf, J. 2016. Sustainable Groundwater Management: A comparative Study of Local Policy Changes and Ecosystem Services in South Africa and Germany. *Environmental Science and Policy*, 26: 59-72.
- Knieper, C., and Pahl-Wostl, C. 2016. A Comparative Analysis of Water Governance, Water Management, and Environmental Performance in River Basins. *Water Resources Management*, doi:10.1007/s11269-016-1276-z.
- van der Voorn, T., Quist, J., Pahl-Wostl, C. et al. 2015. Envisioning robust climate change adaptation futures for coastal regions: a comparative evaluation of cases in three continents. *Mitig Adapt Strateg Glob Change*. 1-28. doi:10.1007/s11027-015-9686-4
- Scholz, G., Austermann, M., Kaldrack, K. and Pahl-Wostl, C. 2015. Evaluating group model building exercises for comparing externalized mental models and group models. *System Dynamics Review*. 31: 28-45.
- Halbe, J., Adamowski, J. and Pahl-Wostl, C. 2015. The Role of Paradigms in Engineering Practice and Education for Sustainable Development. *Journal of Cleaner Production*. 106: 272-282.
- Halbe, J., Pahl-Wostl, C., Lange, M. A., and Velonis, C. 2015. Governance of transitions towards sustainable development – the water–energy–food nexus in Cyprus. *Water International*, 1-18, doi:10.1080/02508060.2015.1070328.
- Kramer, A. and Pahl-Wostl, C. 2014. The global policy network behind IWRM - an effective norm diffusor? *Ecology and Society*. *Ecology and Society* 19 (4): 11. [online] URL:<http://www.ecologyandsociety.org/vol19/iss4/art11/>

- Pahl-Wostl, C. and Knieper, C. 2014. The capacity of water governance to deal with the climate change adaptation challenge: using fuzzy set Qualitative Comparative Analysis to distinguish between polycentric, fragmented and centralized regimes. *Global Environmental Change*, 29: 139-154.
- Halbe, J., Adamowski, J., Bennett, E., Pahl-Wostl, C. and Farahbakhsh, K. 2014. Functional Organization Analysis for the Design of Sustainable Engineering Systems. *Ecological Engineering*, 73: 80-91.
- Scholz, G., Dewulf, A., and Pahl-Wostl, C. 2014. An analytical framework of social learning facilitated by participatory methods. *Systemic Practice and Action Research*, 27(6): 575-591.
- Pahl-Wostl, C., Becker, G., Sendzimir, J., and Knieper, C. 2013. How Multilevel Societal Learning Processes Facilitate Transformative Change: A Comparative Case Study Analysis on Flood Management. *Ecology and Society*, 18 (4): 58. [online] URL: <http://www.ecologyandsociety.org/vol18/iss4/art58>
- Lawford, R., Bogardi, J., Marx, S., Jain, S., Pahl-Wostl, C., Knüppe, K., Ringler, C., Lansigan, F., Meza, F. 2013. Basin Perspectives on the Water-Energy-Food Security Nexus. *Current Opinion in Environmental Sustainability*, 5: 607-616.
- Pahl-Wostl, C., Palmer, M. and Richards, K. 2013. Enhancing water security for the benefits of humans and nature - the role of governance. *Current Opinion in Environmental Sustainability*, 5: 676-684.
- Allen, C., Xia, J., and Pahl-Wostl, C. 2013. Climate Change and Water Security: Challenges for Adaptive Water Management. *Current Opinion in Environmental Sustainability*, 5: 625-632.
- Pahl-Wostl, C., Vörösmarty, C. J., Bhaduri, A., Bogardi, J., Alcamo, J. and Rockström, J. 2013. Towards a sustainable water future: Shaping the next decade of global water research. *Current Opinion in Environmental Sustainability*, 5: 708-714.
- Vörösmarty, C. J., Pahl-Wostl, C., Bunn, S. and Lawford, R. 2013. Global Water, the Anthropocene and the Transformation of a Science. *Current Opinion in Environmental Sustainability*, 5: 539-550.
- Gupta, J., Pahl-Wostl, C. and Zondervan, R. 2013. Global water governance - A multi-level challenge in the anthropocene. *Current Opinion in Environmental Sustainability*, 5: 273-280.
- Gupta, J. and C. Pahl-Wostl. 2013. Global Water Governance in the Context of Global and Multi-level Governance: Its Need, Form, and Challenges. *Ecology and Society* 18 (4): 53. [online] URL: <http://www.ecologyandsociety.org/vol18/iss4/art53/>
- Binder, C. R., J. Hinkel, P. W. G. Bots and C. Pahl-Wostl. 2013. Comparison of Frameworks for Analyzing Social-ecological Systems. *Ecology and Society* 18 (4): 26. [online] URL: <http://www.ecologyandsociety.org/vol18/iss4/art26/>
- Pahl-Wostl, C., Arthington, A., Janos Bogardi, Stuart E Bunn, Holger Hoff, Louis Lebel, Elena Nikitina, Margaret Palmer, LeRoy N Poff, Keith Richards, Maja Schlüter, Roland Schulze, Andre St-Hilaire, Rebecca Tharme, Klement Tockner, Daniel Tsegai, 2013. Environmental flows and water governance: managing sustainable water uses, *Current Opinion in Environmental Sustainability*, 5(3-4), 341-351.
- Baumgartner, T. and Pahl-Wostl, C. 2013. UN-Water and its role in global water governance. *Ecology and Society* 18 (3): 3. [online] URL: <http://www.ecologyandsociety.org/vol18/iss3/art3/>
- Pahl-Wostl, C., Conca, K., Kramer, A., Maestu, J., and Schmidt, F. 2013. Missing links in global water governance: A processes-oriented analysis. *Ecology and Society*, 18(2), 33.
- Halbe, J., Pahl-Wostl, C., Sendzimir, J. and Adamowski, J. 2013. Towards Adaptive and Integrated Management Paradigms to Meet the Challenges of Water Governance. *Water, Science and Technology*, 67(11), 2651-2660.
- Pahl-Wostl, C., Giupponi, C., Richards, K., Binder, C., de Sherbinin, A., Sprinz, D., Toonen, T., and van Bers, C., 2013. Building the foundations for dealing with the challenges arising from global change Requirements for methodologies, methods, data and knowledge. *Environmental Science and Policy*, 28: 36-47.

- Lebel, L., E. Nikitina, C. Pahl-Wostl and C. Knieper. 2013. Institutional Fit and River Basin Governance: a New Approach Using Multiple Composite Measures. *Ecology and Society* 18 (1): 1. [online] URL: <http://www.ecologyandsociety.org/vol18/iss1/art1/>
- Knüppe, K. and Pahl-Wostl, C. 2013. Requirements for adaptive governance of groundwater ecosystem services - A comparative case study analysis. *Regional Environmental Change*, 13(1): 53-66. doi: 10.1007/s10113-012-0312-7.
- Xia, C. and Pahl-Wostl, C. 2012. Understanding the development of flood management in the middle Yangtze River. *Environmental Innovation and Societal Transitions*, 5, 60-75.
- Pahl-Wostl, C., Lebel, L., Knieper, C. and Nikitina, E. 2012. From simplistic panaceas to mastering complexity: Towards adaptive governance in river basins. *Environmental Science and Policy*, 23:24-34.
- Xia, C. and Pahl-Wostl, C. 2012. The development of water allocation management in the Yellow River Basin. *Water Resources Management*. 26(12): 3395–3414. doi: 10.1007/s11269-012-0078-1.
- Bogardi, J. J., Dudgeon, D., Lawford, R., Flinkerbusch, E., Meyn, A., Pahl-Wostl, C., Vielhauer, K. and Vörösmarty, C. 2012. Water security for a planet under pressure: interconnected challenges of a changing world call for sustainable solutions. *Current Opinion in Environmental Sustainability* 4 (1), 35–43. doi: [10.1016/j.cosust.2011.12.002](http://dx.doi.org/10.1016/j.cosust.2011.12.002)
- Herrfahrdt-Pähle, E. and Pahl-Wostl, C. 2012. Continuity and change in social-ecological systems: The role of institutional resilience. *Ecology and Society* 17(2): 8, [online] URL: <http://www.ecologyandsociety.org/vol17/iss2/art8/>
- Xia, C. and Pahl-Wostl, C. 2012. Innovation process during transition towards Water Saving Society in China. *Water Policy* 4 (3), 447–469. doi: [10.2166/wp.2011.140](http://dx.doi.org/10.2166/wp.2011.140)
- Huntjens, P., Lebel, L., Pahl-Wostl, C., Camkin, J., Schulze, R. and Kranz, N. 2012. Institutional design propositions for the governance of adaptation to climate change in the water sector". *Global Environmental Change*, 22 (1), 67-81. doi: [10.1016/j.gloenvcha.2011.09.015](http://dx.doi.org/10.1016/j.gloenvcha.2011.09.015)
- Van der Voorn, T, Pahl-Wostl, C. and Quist, J. 2012. Combining backcasting and adaptive management for climate adaptation in coastal regions. A methodology and a South African case study. *Futures*, 44:346-364.
- Holtz, G. and Pahl-Wostl, C. 2012. Using an agent-based model to analyse the role of farmers' characteristics for land-use change and for related groundwater over-exploitation in the Upper Guadiana, Spain. *Regional Environmental Change*, 12: 95-121.
- Knüppe, K. and Pahl-Wostl, C. 2011. A framework for the analysis of governance structures applying to groundwater resources and the requirements for the sustainable management of associated ecosystem service. *Water Resources Management*, 25: 3387-3411.
- Huntjens, P., Pahl-Wostl, C., Rihoux, B., Flachner, Z., Neto, S., Koskova, R., Schlueter, M., Nabide Kiti, I., Dickens, C. 2011. Adaptive Water Management and Policy Learning in a Changing Climate: a Formal Comparative Analysis of Eight Water Management Regimes in Europe, Africa and Asia. *Environmental Policy and Governance*, 21(3): 145-163.
- Pahl-Wostl, C., Jeffrey, P., Isendahl, I. and Brugnach, M. 2011. Maturing the new water management paradigm: progressing from aspiration to practice. *Water Resources Management*, 25:837-856. DOI 10.1007/s11269-010-9729-2.
- Isendahl, N., Dewulf, A., and Pahl-Wostl, C. 2010. Using framing parameters to improve handling of uncertainties in water management practice. *Environmental Policy and Governance*, 20(2): 107-122.
- Möllenkamp, S., Lamers, M., Huesmann, C., Rotter, S., Pahl-Wostl, C., Speil, K., Pohl, W. 2010. Informal Participatory Platforms for Adaptive Management. Insights into Niche-finding, Collaborative Design and Outcomes from a Participatory Process in the Rhine Basin. *Ecology and Society* 15 (4): 41. [online] URL: <http://www.ecologyandsociety.org/vol15/iss4/art41/>

- Newig, J., Günther, D. and Pahl-Wostl, C. 2010. Neurons in the network: Learning in Governance Networks in the Context of Environmental Management. *Ecology and Society*, **15**(4): 24. [online] URL: <http://www.ecologyandsociety.org/vol15/iss4/art24/>.
- Sendzimir, J., Flachner, Z., Pahl-Wostl, C., Knieper, C. 2010. Stalled regime transition in the upper Tisza river basin: The dynamics of linked action situations. *Environmental Science & Policy*, **13**: 604-619.
- Knieper, C., Holtz, G., Kastens, B., Pahl-Wostl, C. 2010. Analysing water governance in heterogeneous case studies - Experiences with a database approach, *Environmental Science & Policy*, **13**: 592-603.
- Schlüter, M., Hirsch, D., Pahl-Wostl, C.. 2010. Sharing water among different uses - integrating scientific and stakeholder knowledge on current and potential future water management regimes in the Amudarya river basin. *Environmental Science & Policy*, **13**: 620-636.
- Pahl-Wostl, C., Holtz, G., Kastens, B., Knieper, C. 2010. Analysing complex water governance regimes: The Management and Transition Framework. *Environmental Science & Policy*, **13**: 571-581.
- Rothman, D., van Bers, C., Bakkes, J. and Pahl-Wostl, C. 2010. How to make global assessments more effective: lessons from the assessment community. *Current Opinion in Environmental Sustainability*, **1**: 214-218.
- Krysanova, V., Dickens, C., Timmerman, J., Varela-Ortega, C., Schlüter, M., Roest, K., Huntjens, P., Jaspers, F., Buiteveld, H., Moreno, E., Pedraza Carrera, J., Slámová, R., Martínková, M., Blanco, I., Esteve, P., Pringle, K., Pahl-Wostl, C. and Kabat, P. 2010. Cross-comparison of climate change adaptation strategies across large river basins in Europe, Africa and Asia. *Water Resources Management*, **24**: 4121-4160.
- Huntjens, P., Pahl-Wostl, C., and Grin, J. 2010. The Role of Adaptive and Integrated Water Management in Coping with the Impacts of Climate Change on Floods and Droughts in River Basins: A comparative analysis of four European sub basins. *Regional Environmental Change*, **10** (4); 263-284.
- Blümling, B., Yang, H. and Pahl-Wostl, C. 2010. Implications of Stakeholder Constellations for Irrigation at Jointly Used Wells – Cases from the North China Plain, China. *Society & Natural Resources*, **23**(6), 557-572.
- Isendahl, N., Pahl-Wostl, C. and Dewulf, A. 2010. Making framing of uncertainty in water management practice explicit by using a participant-structured approach. *Journal of Environmental Management*, **91**: 844-851.
- Sigel, K., Klauer, B. and Pahl-Wostl, C. 2010. Conceptualising uncertainty in environmental decision-making: the example of the EU Water Framework Directive. *Ecological Economics*, **69**: 502-510.
- Rothman, D., van Bers, C., Bakkes, C., and Pahl-Wostl, C. 2010. How to make global assessments more effective: lessons from the assessment community. *Current Opinion in Environmental Sustainability*, **1**: 214-218.
- Isendahl, N., Dewulf, A., Brugnach, M., Francois, G., Möllenkamp, S., and Pahl-Wostl, C. 2009. Assessing framing of uncertainties in water management practice. *Water Resources Management*, **23** (15): 3191-3205.
- Pahl-Wostl, C. 2009. A conceptual framework for analysing adaptive capacity and multi-level learning processes in resource governance regimes. *Global Environmental Change*, **19**: 354-365. URL: <http://dx.doi.org/10.1016/j.gloenvcha.2009.06.001>.
- Huitema, D., Mostert, E., Egas, W., Möllenkamp, S., Pahl-Wostl, C., and Yalcin, R. 2009. Adaptive water governance Assessing adaptive management from a governance perspective, *Ecology and Society* **14** (1): 26. [online] URL: <http://www.ecologyandsociety.org/vol14/iss1/art26/>
- Moore, S.A., Wallington, T.J., Hobbs, R.J., Ehrlich, P.R., Holling, C.S., Levin, S., Lindenmayer, D., Pahl-Wostl, C., Possingham, H., Turner, M.G., and Westoby, M. 2009. Exploring Diversity in Current Ecological Thinking and Implications for Environmental Management. *Environmental Management*, **43** (1): 17-.

- Pahl-Wostl, C., Gupta, J. and Petry, D. 2008. Governance and the Global Water System: Towards a Theoretical Exploration, *Global Governance*, 14: 419-436.
- Borowski, B. and Pahl-Wostl, C. 2008. Where can social learning take place in international river basin management in Europe. *European Environment*, 18: 216-227.
- Brugnach, M., A. Dewulf, C. Pahl-Wostl and T. Taillieu 2008. Toward a Relational Concept of Uncertainty: about Knowing Too Little, Knowing Too Differently, and Accepting Not to Know. *Ecology and Society* 13 (2): 30. [online] URL: <http://www.ecologyandsociety.org/vol13/iss2/art30/>
- van der Keur, P., Henriksen, H. J., Refsgaard, J. C., M. Brugnach, M., C. Pahl-Wostl, C., Dewulf, A., and Buiteveld, H. 2008. Identification of Major Sources of Uncertainty in Current IWRM Practice. Illustrated for the Rhine Basin. *Water Resources Management*, 22 (11), 1677-1708.
- Mostert, E., Craps, M. and Pahl-Wostl, C. 2008. 'Social learning: the key to integrated water resources management?', *Water International*, 33(3), 293-304
- Ebenhöf, E. and Pahl-Wostl, C. 2008. Agent behaviour between maximisation and cooperation. *Rationality and Society*, 20 (2), 227-252.
- Alcamo, J., Vörösmarty, C., Naiman, R.J., Lettenmaier, D.P., and Pahl-Wostl, C. 2008. A grand challenge for freshwater research: understanding the global water system. *Environ. Res. Lett.* 3 010202
- Borowski, I., J. Le Bourhis, C. Pahl-Wostl, and B. Barraqué. 2008. Spatial misfit in participatory river basin management: effects on social learning. a comparative analysis of German and French case studies. *Ecology and Society* 13(1): 7. [online] URL: <http://www.ecologyandsociety.org/vol13/iss1/art7/>
- Pahl-Wostl, C., Tàbara, D., Bouwen, R., Craps, M., Dewulf, A., Mostert, E., Ridder, D., and Taillieu, T. 2008. The role of social learning and culture for water resources management. *Ecological Economics*, 64, 484-495.
- Holtz, G., Brugnach, M. and Pahl-Wostl, C. 2008. Specifying “Regime” - A Framework for defining and describing Regimes in Transition Research, *Technological Forecasting and Social Change*: 75 (5), 623-643.
- Pahl-Wostl, C., J. Sendzimir, P. Jeffrey, J. Aerts, G. Berkamp, and K. Cross. 2007. Managing change toward adaptive water management through social learning. *Ecology and Society* 12(2): 30. [online] URL: <http://www.ecologyandsociety.org/vol12/iss2/art30/>
- Blümling, B., Yang, H. and Pahl-Wostl, C. 2007. Making water productivity operational—A concept of agricultural water productivity exemplified at a wheat–maize cropping pattern in the North China plain. *Agricultural Water Management*, 91, 11-23.
- Dewulf, A., Francois, G., Pahl-Wostl, C., and Taillieu, T. 2007. A framing approach to cross-disciplinary research collaboration. Experiences in a large-scale research project on adaptive water management. *Ecology and Society* 12(2): 14. [online] URL: <http://www.ecologyandsociety.org/vol12/iss2/art14/>.
- Pahl-Wostl, C., M. Craps, A. Dewulf, E. Mostert, D. Tabara, and T. Taillieu. 2007. Social learning and water resources management. *Ecology and Society* 12(2): 5. [online] URL: <http://www.ecologyandsociety.org/vol12/iss2/art5/>
- Tàbara, J. D., and Pahl-Wostl, C. 2007. Sustainability learning in natural resource use and management. *Ecology and Society* 12(2): 3. [online] URL: <http://www.ecologyandsociety.org/vol12/iss2/art3/>.
- Schlüter, M., and Pahl-Wostl, C. 2007. Mechanisms of resilience in common-pool resource management systems: an agent-based model of water use in a river basin. *Ecology and Society* 12(2): 4. [online] URL: <http://www.ecologyandsociety.org/vol12/iss2/art4/>.
- Schmidt, S. and Pahl-Wostl, C. 2007. Modelling the biowaste flows for Life-Cycle Assessment of biowaste management systems. *Journal of Industrial Ecology*, 11 (1), 181-199.

- Mostert, E., Pahl-Wostl, C., Rees, Y., Searle, B., Tàbara, D. and Tippet, J. 2007. Social learning in European river basin management; Barriers and fostering mechanisms from 10 river basins, *Ecology and Society* **12**(1): 19. [online] URL: <http://www.ecologyandsociety.org/vol12/iss1/art19/>
- Pahl-Wostl, C. 2007. Transition towards adaptive management of water facing climate and global change. *Water Resources Management*. 21(1), 49-62.
- Pahl-Wostl C., 2007. The implications of complexity for integrated resources management. *Environmental Modelling and Software*. 22, 561-569
- Young, O. R., E. F. Lambin, F. Alcock, H. Haberl, S. I. Karlsson, W. J. McConnell, T. Myint, C. Pahl-Wostl, C. Polsky, P. Ramakrishnan, H. Schroeder, M. Scouvar, and P. H. Verburg. 2006. A portfolio approach to analyzing complex human-environment interactions: institutions and land change. *Ecology and Society* **11**(2): 31. [online] URL: <http://www.ecologyandsociety.org/vol11/iss2/art31/>
- Panebianco, S. and Pahl-Wostl, C. 2006. Modelling socio-technical transformations in wastewater treatment—A methodological proposal. *Technovation*, 26 (9), 1090-1100.
- Pahl-Wostl, C. 2006. The importance of social learning in restoring the multifunctionality of rivers and floodplains. *Ecology and Society* **11**(1): 10. [online] URL: <http://www.ecologyandsociety.org/vol11/iss1/art10/>.
- Newig, J., Pahl-Wostl, C. and Sigel, K. 2005. The Role of Public Participation in Managing Uncertainty in the Implementation of the Water Framework Directive. *European Environment*., 15, 333-343.
- Newell, B., Crumley, C., Lambin, E., Pahl-Wostl, C., Underdal, A., Wasson, R. 2005. Integrative Human-Environment Research. I. Towards a Practical Approach. *Global Environmental Change*, 15, 299-307.
- Dewulf, A., Craps, M., Bouwen, R., Taillieu, T. and Pahl-Wostl, C. 2005. Integrated management of natural resources: dealing with ambiguous issues, multiple actors and diverging frames. *Water, Science and Technology*, 52, 115-124.
- Ridder, D. and Pahl-Wostl, C. 2005. Participatory Integrated Assessment in Local Level Planning. *Regional Environmental Change*. 5, 188-196.
- Pahl-Wostl, C. 2005. Actor based analysis and modelling approaches. *Integrated Assessment*, 5: 97-118.
- Tippet, J, Searle, B., Pahl-Wostl, C. and Rees, Y. (2005). Social Learning in Public Participation in River Basin Management. *Environmental Science & Policy*, 8(3), 287-299.
- Tillman, D.E., Larsen, T., Pahl-Wostl, C., and Gujer, W. 2005. Simulation for strategy development in water supply systems. *Hydroinformatics*. 7/1
- Pahl-Wostl, C. 2005. Information, Public Empowerment and the Management of Urban Watersheds. *Environmental Modelling and Assessment*. 20/4 457-467
- Vörösmarty, C., Lettenmaier, D., Lévêque, C., Meybeck, M., Pahl-Wostl, C. 2004. Humans Transforming the Global Water System. *EOS*. 85, 513-514.
- Pahl-Wostl, C. and Hare, M. 2004. Processes of Social Learning in Integrated Resources Management. *Journal of Applied and Community Psychology*. 14, 193-206
- Kottonau, J., and Pahl-Wostl, C. Simulating political attitudes and voting behaviour. *JASSS*. 7,1. <http://jasss.soc.surrey.ac.uk/7/4/6.html>
- Ebenhöf, E. and Pahl-Wostl, C. 2004. An adaptive toolbox model: A pluralistic modelling approach for human behaviour based on observation. *JASSS*. 7,1. <http://jasss.soc.surrey.ac.uk/7/1/3.html>
- Pahl-Wostl, C., Schönborn, A., Willi, N., Muncke, J. and Larsen, T. 2003. Investigating consumer attitudes towards the new technology of urine separation. *Water, Science and Technology*, 48; 57-65.

- Pahl-Wostl, C., Hoff, H., Meybeck, M. and Sorooshian, S. 2002. The role of global change research for aquatic sciences. Editorial to the special issue of Aquatic Sciences on: Vulnerability of Water Resources to Environmental Change - A Systems' Approach. *Aquatic Sciences*: 64 (4).
- Pahl-Wostl, C. 2002. Towards Sustainability in the Water Sector - The Importance of Human Actors and Processes of Social Learning. *Aquatic Sciences*: 64, 394-411.
- Pahl-Wostl, C. 2002. Polycentric Integrated Assessment. *Integrated Assessment*, 3: 220-233.
- Pahl-Wostl, C. 2002. Participative and Stakeholder-based policy design, analysis and evaluation processes. *Integrated Assessment*, 3: 3-14.
- Pahl-Wostl, C. 2002. Agent Based Simulation in Integrated Assessment and Resources Management. In: Rizzoli, A. and Jakeman, T. (eds). *Integrated Assessment and Decision Support. Proceedings of the 1st biennial meeting of the International Environmental Modelling and Software Society, Vol 2*, 239-250.
- Hare, M. and Pahl-Wostl, C. 2002. Stakeholder categorization in participatory integrated assessment processes. *Integrated Assessment*, 3, 50-62.
- Tillman, D.E., Larsen, T., Pahl-Wostl, C., and Gujer, W. 2002. Risikoverminderung: Steuerung des Wasserverbrauchs. *GWA*, 10: 743-750.
- Schlumpf, C., Pahl-Wostl, C., Schönborn, A., Jaeger, C.C., and Imboden, D.M. 2001. IMPACTS: An Information Tool for Citizens to Assess Impacts of Climate Change from a Regional Perspective. *Climate Change*, 51: 199-241. .
- Moss, S., Pahl-Wostl, C., and Downing, T. 2001. Agent based integrated assessment modelling. *Integrated Assessment*, 2: 1-17.
- Hare, M., and Pahl-Wostl, C. 2001. Model uncertainty derived from choice of agent rationality - a lesson for policy assessment modelling in N. Giambiasi and C. Frydman, (eds.) *Simulation in Industry: 13th European Simulation Symposium*. SCS Europe Bvba, Ghent. pp 854-859.
- Pahl-Wostl, C., Schlumpf, C., Schönborn, A., Büssenschütt, M., and Burse, J. 2000. Models at the interface between science and society: Impacts and Options. *Integrated Assessment*. 1: 267-280.
- Downing, T., Moss, S., Pahl-Wostl, C. 2001. Understanding Climate Policy Using Participatory Agent-Based Social Simulation. *Lecture Notes in Artificial Intelligence*.
- Tillman, D., Larsen, T., Pahl-Wostl, C. and Gujer, W. 2001. Interaction analysis of the stake-holders in watersupply systems. *Water Science and Technology*, 43: 319-326.
- Büssenschütt, M. and Pahl-Wostl, C. 2000. A discrete, allometric approach to the modelling of ecosystem dynamics. *Ecological Modelling*, 126: 33-48.

Books and Book Chapters

- Pahl-Wostl, C. (2015). *Water Governance in the Face of Global Change - From Understanding to Transformation*: Springer International Publishing.
- Pahl-Wostl, C., Gupta, J., and Bhaduri, A. (Eds.). (2015). *Handbook on Water Security*: Edward Elgar
- Pahl-Wostl, C. (2015). Water security, systemic risks and adaptive water governance and management. In C. Pahl-Wostl, J. Gupta, & A. Bhaduri (Eds.), *Handbook on Water Security* (pp. 91-104). Cheltenham, UK: Edward Elgar.
- Pahl-Wostl, C., Gupta, J., & Bhaduri, A. (2015). Water Security: A Popular but Contested Concept. In C. Pahl-Wostl, J. Gupta, & A. Bhaduri (Eds.), *Handbook on Water Security* (pp. 1-18). Cheltenham, UK: Edward Elgar.
- Pahl-Wostl, C., & Knüppe, K. (2015). Water Security and Environmental Water Needs: The Role of the Ecosystem Services Concept and Transformation of Governance Systems In C. Pahl-Wostl, J. Gupta, & A. Bhaduri (Eds.), *Handbook on Water Security* (pp. 226-238). Cheltenham, UK: Edward Elgar.

- Rockström, J., Falkenmark, M., Folke, C., Lannerstad, M., Enfors, E., Gordon, L., Heinke, J., Hoff, H. and Pahl-Wostl, C. (2014). *Water Resilience for Human Prosperity*. Cambridge University Press, Cambridge, UK.
- Pahl-Wostl, C., Jeffrey, P. and Sendzimir, J. (2011) Adaptive and integrated management of water resources. In: Quentin, R.Q. and Hussey, K. (eds.) *Water Resources Planning and Management*. Cambridge University Press, Cambridge, UK. Pp. 292-310.
- Pahl-Wostl, C., Kastens, B., Borowski, I. and Hirsch, D. 2009. Stakeholder Responsive Research as an Approach to Support Adaptive Integrated Water Management: Examples from the NeWater Project. In: Quevauvillier, P. (editor). *Water System Science and Policy Interfacing*. RSC Publishing, Cambridge, UK. Pp. 226-244.
- Mysiak, J., Henriksen, H. J., Sullivan, C., Bromley, J. and Pahl-Wostl, C. (eds.) 2009. *The Adaptive Water Resource Management Handbook*. Earthscan, UK.
- Pahl-Wostl, C., Berkamp, G. and Cross, K. 2008. Adaptive management of upland rivers facing global change: General insights and specific considerations for the Rhone basin. In: Garrido, A. and Dinar, A. (eds). *Managing Water Resources in a Time of Global Change: Mountains, Valleys and Flood Plains*. Routledge. Pp 97-116.
- Pahl-Wostl, C. 2008. Participation in Scenario Development. In: Alcamo, J. (ed.) *Environmental Futures: The Practice of Environmental Scenario Analysis*, Elsevier, New York. Pp 105-122.
- Brugnach, M., Pahl-Wostl, C., Lindenschmidt, K., Janssen, J., Filatova, T., Mouton, A., Holtz, G., van der Keur, P., and Gaber, N. 2008. Complexity and Uncertainty: Rethinking the Modelling Activity. In: Jakeman, A.J. et al., editors, *Developments in Integrated Environmental Assessment*, Vol. 3. Amsterdam. Pp 49-70.
- Timmerman, J., Pahl-Wostl, C., and Möltgen, J. (eds) 2008. *The Adaptiveness of IWRM: Analysing European IWRM Research*. IWA Publishing, London, UK.
- Pahl-Wostl, C., Kabat, P., and Möltgen, J. (eds). 2007. *Adaptive and Integrated Water Management. Coping with Complexity and Uncertainty*. Springer Verlag, Heidelberg, Germany. 440p.
- Pahl-Wostl, C. 2007. Requirements for Adaptive Water Management. In: *Adaptive and Integrated Water Management. Coping with Complexity and Uncertainty*. Pahl-Wostl, C., Kabat, P., and Möltgen, J. (eds). Springer Verlag, Heidelberg, Germany. Pp. 1-22.
- Pahl-Wostl, C. Möltgen, J., Ebenhö, E. and Holtz, G. 2007. The NeWater Management and Transition Framework – state and development process. In: *Adaptive and Integrated Water Management. Coping with Complexity and Uncertainty*. Pahl-Wostl, C., Kabat, P., and Möltgen, J. (editors). Springer Verlag, Heidelberg, Germany. Pp. 75-96.
- Brugnach, M. and Pahl-Wostl, C. 2007. A broadened view on the role of models in natural resource management: Implications for model development.. In: *Adaptive and Integrated Water Management. Coping with Complexity and Uncertainty*. Pahl-Wostl, C., Kabat, P., and Möltgen, J. (editors). Springer Verlag, Heidelberg, Germany. Pp. 187-204.
- Hare, M.P., Barreteau, O., Beck, M.B. Letcher, R., Mostert, E., Tàbara J.D., Ridder, D., Cogan, V., Pahl-Wostl, C. 2006. Methods for stakeholder participation in water management. In: Giupponi, C., Hare, M. and Jakeman, A. (eds) *Policies and Tools for Sustainable Water Management*. Elsevier. .
- Ebenhö, E. and Pahl-Wostl, C. 2006. Agent-based modelling with boundedly rational agents. in: Rennard, J.P. (ed). *Handbook of Research on Nature inspired computing for Economics and Management*, Hershey-PA, USA, Vol 1 (17). Pp 225-245.
- Pahl-Wostl, C. 2004. Self-Regulation of Limnetic Ecosystems. in: *The Lakes Handbook*. O'Sullivan, P.E. and Reynolds, C.S. (eds.) Blackwell Science Ltd. pp. 583-608.
- Pahl-Wostl, C. 2003. Polycentric Integrated Assessment. in: *Scaling Issues in Integrated Assessment* eds. Rotmans, J. and Rothman, D. Swets & Zeitlinger Publishers, pp 237-262.
- Hare, M, Gilbert, N., Medugno, D., Asakawa, T., Heeb, J. and Pahl-Wostl, C. (2001) The development of an internet forum for long-term participatory group learning about problems and solutions to sustainable urban water supply management in Hilty, L.M. & Gilgen, P.W. (eds) *Sustainability in the*

- Information Society, 15th International Symposium Informatics for Environmental Protection, Part 2: Methods/Workshop Papers Metropolis Verlag, Marburg. Pp 743-750.
- Pahl-Wostl, C. 2000. Ecosystems as dynamical networks. in: Handbook of ecosystem theories and management / ed. by S.E. Jørgensen et al. Boca Raton Lewis Publ. P. 317-345.
 - Downing, T.E., Moss, S. and Pahl-Wostl, C. 2000. Understanding Climate Policy Using Participatory Agent-Based Social Simulation. In: Moss, S. and Davidsson, P. (eds.) Lecture Notes in Computer Science: Vol 1979. Proceedings of the Second International Workshop in Multi-Agent-Based Simulation. Springer-Verlag, London, UK. Pp 198-213.
 - Pahl-Wostl, C., C.C. Jaeger, S. Rayner, C. Schär, M. van Assel, D.M. Imboden and A. Vckovski, 1998. Regional Integrated Assessment and the Problem of Indeterminacy. In: Views from the Alps: Regional Perspectives on Climate Change. Cebon,P., U.Dahinden, H.C. Davies, D.M. Imboden and C.C. Jaeger. MIT Press, Cambridge, pp. 435-497.
 - Pahl-Wostl, C. 1998. Netzwerktheorie ? Analyse von Stoff- und Energietransfers. In: Handbuch der Umweltwissenschaften. Band 2, Kapitel III-1.3. S. 1-12.
 - Pahl-Wostl, C., 1998. Ecosystem Organization Across a Continuum of Scales: A Comparative Analysis of Lakes and Rivers. in: Scale Issues in Ecology. Eds. D. Peterson and T. Parker. Columbia University Press, NY, pp. 141-170.
 - Gaedke, U., Straile, D., and Pahl-Wostl, C., 1996. Trophic structure and carbon flow dynamics in the pelagic community of a large lake. In: Food webs: Integration of Pattern and Dynamics, pp 60-71. Eds. Polis, G. and Winemiller, K. Chapman and Hall.
 - Pahl-Wostl, C. 1995. The dynamic nature of ecosystems: Chaos and order entwined. Wiley, Chichester, 288p.
 - Pahl-Wostl, C. 1994. Spatio-Temporal Organization mediated by a hierarchy in time scales in ensembles of predator-prey pairs. In: Predictability and Nonlinear Modelling in Natural Sciences and Economics. Grasman, J. and van Straten, G. (Eds). Kluwer, Dordrecht, pp: 260-273.
 - Pahl-Wostl, C. 1991. Spatiotemporal Organization in Complex Systems. In: Models of Selforganization in Complex Systems. Ebeling, W., Peschel, M., and Weidlich, W. (Eds.). Akademie-Verlag, Berlin. Pp. 134-141.

INVITED LECTURES SINCE 2005

2005

- Integrated Assessment of Water Resources and Global Change: A North-South Analysis, 23 – 25 February 2005, Bonn, Germany
 - Transition towards adaptive management of water facing climate and global change
- „Challenges for Integrated Assessment“ Joint Conference of EFIEA (European Forum for Integrated Assessment) and TIAS (The Integrated Assessment Society), 29th February – 2nd March, 2005, Berlin, Germany.
 - The Future of Integrated Assessment and its role in shaping the science-policy interface.
- 2nd Harmoni-CA Conference, 05-06th April 2005, Ghent, Belgium.
 - NeWater – New Approaches to Adaptive Water Management under Uncertainty.
- DFG (German Science Foundation) Roundtable on Water Politics, 21-22nd of April, Bonn, Germany.
 - How to strengthen the social sciences in water related research?
- EWRA 2005. 6th International Conference of the European Water Resources Association, 7-10th September, 2005, Montpellier, France.
 - New Methods for the Adaptive Water Management under Uncertainty – The NeWater Project
- Final Conference of the HarmoniCOP (Harmonizing Collaborative Planning) project. 4th of October, Osnabrück, Germany.
 - Major Findings of the HarmoniCOP project: Report from a Journey.
- 6th Open Meeting of the Human Dimensions of Global Environmental Change Research Community, University of Bonn, Bonn, Germany, 9-13 October 2005
 - How to Tackle the Global Dimension and Multi-scale Governance Processes in Water Management? at the session The Role of the Human Dimension in the Global Water System Project (Session Organizer).
 - The Role of Social Learning and the Transition to Adaptive Management of Water Resources. At the session: The Human Dimension in Water Management – Experiences from a European Research Network (Session Organizer).
 - Modelling Common-Pool Resource Experiments as Multi-Agent Systems. At the session: Modelling and Collaborative Planning within a Multi-Agent Framework – Empirical Approaches and Methods
 - Analysis and Integration of the Qualitative Dimensions of Human-environment Interactions. At the session: Methods in Human-environment Studies: What Does the World Look Like Beyond Regression?
- Workshop on “Biologising Control Theory” at IIASA, the International Institute for Applied System Analysis, 19-20th December, 2005.
 - Role of the Human Dimension and Learning Processes in Adaptive Management

2006

- 4th World Water Forum, Mexico City, Mexico, 17th – 22nd of March, 2006.
 - “Participatory Approaches in the implementation of the WFD.” during session “Implementation of the European Water Framework Directive”
 - “Adaptive water management and the role of social learning.” during session “Broadening perspectives in the face of increasing risks”.
- 3rd HarmoniCA Forum and Conference, 5-7th of April, Osnabrück, Germany.
 - New approaches to adaptive water management under uncertainty.
- International Workshop on “Governance and the Global Water System”, 20-23rd of June, 2006, Bonn, Germany.
 - “Governance and the Global Water System: Towards a Theoretical Exploration”.

- 3rd Biennial meeting of the International Environmental Modelling and Software Society. 9-13th of July, 2006. Burlington, Vermont, USA.
- “Complexity and uncertainty and a new role for models”.
- Nordic Water 2006. XXIV Nordic Hydrological Conference. Experiences and Challenges in Implementation of the EU Water Framework Directive. 6-9th of August, 2006. Vingsted Centret, Denmark.
- Public participation and adaptive management in relation to the Water Framework Directive”.
- Stockholm Water Week. Seminar on “Multi Scale Water Governance”. 20-26 August 2006, Stockholm, Sweden.
- The Need for Adaptive and Multi-scale Governance in Times of Increasing Uncertainty
- 5th Rosenberg International Forum on Water Policy on “Managing Upland Watersheds In An Era Of Global Climate Change,, 6-11th of September, Banff, Canada.
- Adaptive management of upland rivers facing global change: General insights and specific considerations for the Rhone basin”.
- Transatlantic Uncertainty Colloquium. 10-11th of October, Washington DC, USA.
- Water Policy in the USA and the EU (with Ken Reckhow)
- ESSP Open Science Conference on “Global Environmental Change”, 9-12th of November, Beijing, China.
- Governance of water – how to bridge regional and global scales?
- IDGEC (Institutional Dimensions of Global Environmental Change) Synthesis Conference, December 4 - 9, Bali, Indonesia.
- Institutional Dynamics: Key to understanding adaptive and sustainable management of water resources.
- “Water, social learning, resilience and study of regimes”

2007

- Kolloquium des interdisziplinären Zentrums für Wasserforschung und des Instituts für Hydrologie, 25. Januar, Freiburg.
- „Adaptives Management von Wasserressourcen „
- Symposium zum Thema Wasser an der Nordrheinwestfälischen Akademie der Wissenschaften, 20-21. April, Düsseldorf.
- „, Adaptives Management von Wasserressourcen „
- International Workshop on „Global Assessments: Bridging Scales and Linking to Policy”, 09-11th of May, Washington DC, USA.
- “Representation of the Human Dimension in Global Water Assessments - Current State and Major Challenges for Methodological Innovations”.
- Policy Workshop on „Perceptions of uncertainties in water management by stakeholders and researchers”, 14-16th of May, Prague, Czech Republic.
- “Adaptive management approaches to cope with uncertainty and complexity in water management”.
- Symposium zum Thema „Wasser – Konfliktstoff des 21. Jahrhunderts“, 1-3. Juni., Freiburg.
- „Die Bedeutung sozialer Lernprozesse auf und zwischen verschiedenen Ebenen für ein nachhaltiges Konfliktmanagement“
- IIASA Water Science Day, 11th of June, Laxenburg, Austria.
- “Panel on new directions in water research”.
- HarmoniCA Policy Workshop on “Using Economic Methods and Models for the Implementation of the Water Framework Directive”, 14-15th June, Berlin, Germany.
- “Economic aspects and the challenges for integration in integrated catchment modelling and water management”.
- Kolloquium des Forschungszentrums Nachhaltigkeit der Universität Bremen, 4. Juli, Bremen, Germany.
- „Potenziale der agentenbasierten Modellierung zum besseren Verständnis sozialer Prozesse“

- Stockholm Water Week, 12th-17th of August 2007, Stockholm, Sweden.
 - “Collaborative Governance in Different Institutional Settings – European and Asian Approaches in Water Resources Management.”
 - “The Role of Processes of Social Learning and Institutional Change to Overcome the Seeming Trade-off Between Ecosystem and Human Water Needs.”
 - “Adaptive & Integrated Water Governance – introduction of a new scientific paradigm”
- Expert Workshop on Global Challenges organized by the European Commission, 4-5th of October, Brussels, Belgium
 - “Sustainability in the Water Sector”.
- The 3rd International Yellow River Forum, 16-19th of October, Dongying City, China.
 - “The global dimension of adaptive river basin management”.
- CAIWA, Conference on Adaptive and Integrated Water Management, 12-15th of November, Basel, Switzerland.
 - “Requirements for a paradigm shift towards adaptive and integrated water management”.
- Workshop Ghost in the Machine, 28-29th of November, Leipzig, Germany
 - “The role of models to address the human dimension in resource management”.

2008

- Workshop Dynamics of Institutions in Water Resource Management . 9-11th of January, Tempe, USA.
 - „The role of social learning in adaptive water management”.
- Workshop on Agriculture, Water Management and Climate Change, 4-6th of March, Bath, UK.
 - “Requirements for adaptive and integrated water management”.
- Resilience, Adaptation and Transformation in Turbulent Times, 14-17th of April, Stockholm Sweden
 - “The role of informal networks in adaptive resource governance”
- ASEM Water Net International Conference, 29.04-30.04th April, Lissabon, Portugal
 - “Experience from European Water research – Increased importance of the human dimension”
- Riskbased Water Management, RiskBase Conference, 15-16th May, Budapest, Hungary
 - “The human dimension in river basin management - The EU project “NeWater”
- Anpassung an den Klimawandel, GTZ Expertengespräch, 5. Juni, Eschborn, Germany.
 - „Umgang mit Unsicherheiten im Wassermanagement“
- Symposium on “Climatic Change and Extreme Events, 21-24.07., Tribuna del Agua, World Exhibition Zaragoza, Spain.
 - „Climate change – a global challenge for water governance“
- Seminar 19th August at the Stockholm Resilience Centre, Stockholm, Sweden.
 - “Dynamics and adaptive capacity of multi-level water resource governance regimes.”
- Workshop Science Policy Interface and Climate Change, 29th September, Utrecht University, The Netherlands.
 - “Managing Change”.
- Workshop WATER 2048 - Guaranteeing Aquatic Ecosystem Services in Urbanised Landscapes, 13.-15th October, Lunz, Austria.
 - “Societal Demand for Aquatic Ecosystem Services”.
- International Conference on Water Resources Policy, 17.-20th December, Colombo, Sri Lanka.
 - “Innovation in European water policy and the need for exchange on water policy reform at a global scale”.

2009

- Workshop on „The Impact of Global Change on Water Resource Vulnerability”, 26-27th January, 2009. Woods Institute of the Environment, Stanford University, UAS.

- Some reflections on integrated models for global change water research and how to better include the human dimension
- Conference on Integrated Assessment of Agriculture and Sustainable Development, 10.-12th March, Utrecht, The Netherlands.
 - “Innovation in European water policy and the need for exchange on water policy reform at a global scale”.
- IHDP Open Meeting: Social Challenges of Global Change, 16 -19th April, Bonn, Germany
 - “Why and how to increase and sustain resilience and adaptive capacity of resource governance regimes”
 - “Processes of Social Learning and Water Regime Change towards Adaptive and Integrated Approaches”
- International Conference Water Policy 2009: Water as vulnerable and exhaustible resource, 22.-26th June, Prague, Czech Republic.
 - “Building capacity for water policy and management: need for innovation in teaching curricula”.
- Riskbase International Workshop on Ecosystem Services and Adaptive Management: 25.-26th June, Venice, Italy.
 - “Managing Change towards Adaptive Water Management – meeting the challenges of global and climate change”.
- Invited lecture at the Swiss Federal Institute of Aquatic Science and Technology (EAWAG), 6th of July Dübendorf, Switzerland
 - “The central role of the human dimension in water management”
- Invited lecture at the University of Kwa Zulu Natal, 23rd of October, Pietermaritzburg South Africa
 - “New Water Challenges for the 21st Century: Adapting to Change”
- International Forum on ASEM Water Resources Management & Final Conference of ASEMWaterNet, 17-19th of November, Changsha, China
 - “ Dealing with complexity and uncertainties in water resources management – Findings from European water research and cooperation with Asia and Africa
 - “Transition towards integrated and adaptive flood management in the Yangtze River Basin”
- EU-China River Basin Governance (RiBaGo) Research Network, Inaugural Workshop, 23-27th of November, Macau and Guangzhou, China
 - “Environmental Services as an integrative concept supporting transformation processes in water management”

2010

- Kolloquium Center for Environmental Systems Research, Universität Kassel, 18. Januar, Kassel, Germany
 - “Herausforderungen für das nachhaltige Management von Wasserressourcen in Zeiten des Globalen Wandels”
- Workshop on Social Mobilization for Climate Solutions, 11-12.03.2010. University of British Columbia, Vancouver, Canada.
 - Social Mobilization for Climate Solutions: Need for multi-level and multi-loop social and societal learning”
- Expert Consultation on the nexus of water corruption and integrity, environment and climate change. 29.03.2010, Berlin, Germany
 - “Challenges for Water Governance and Management facing Global and Climate Change”
- Fachgespräch zu Handeln unter Bedingungen des Nichtwissens. 30.03.2010, Potsdam, Germany.
- 13th Economics of Infrastructure Conference, 27-28.05.2010, TU Delft, The Netherlands.
 - “Building the foundations for a transition towards sustainable water governance in the face of global environmental change”.

- International Workshop on “Social Learning and Sustainability: Exploring Critical Issues in Relation to Environmental Change and Governance. 1.-3.06.2010, Resilience Centre Stockholm, Sweden.
- “The importance of multi-level and multi-loop learning for building and sustaining the adaptive capacity of social-ecological systems”
- EU-China River Basin Governance (RiBaGo) Research Network, Workshop, 23-27th of August 2010, Cambridge, UK.
- “The role of innovation and learning in multi-level water governance systems: conceptual considerations and examples from integrated flood management”
- Seminar “Enhancing Resilience: Protecting Water Quality for Human Health”, Stockholm Water Week, 05.-12.09.2010, Stockholm, Sweden.
- ”How to enhance resilience: A reflection on concepts”.
- Workshop on “Global Water Governance and the UN System”, 13-15th of October 2010, Bonn, Germany
- “Global Water Governance, Challenges and Design Options – GWSP Activities”
- Conference on “The Global Dimensions of Change in River Basins - Threats, Linkages and Adaptation “ 6-9th of December 2010, Bonn, Germany
- “Water Governance – a multi-level Challenge”.

2011

- Conference Resilience 2011 “Resilience, Innovation and Sustainability: Navigating the Complexities of Global Change”, 11-16th March, Tempe, USA.
- “Water Governance in the Anthropocene”
- “From Building the Tower of Babel to Shared Frameworks for the Representation of Social-Ecological Systems”
- “Coordinating Twinning partnerships towards more adaptive governance in river basins: From panaceas to context sensitive analyses and recommendations”.
- Conference organised by the Hungarian EU presidency and the Hungarian Academy of Sciences on “The Future of European Waters - how should policies adapt?” 23rd-25th March, Budapest.
- “Challenge for Water Governance in Times of Change”
- Workshop “Criteria of Sustainability”, 7-9th April, Basel, Switzerland.
- “Potential and limitations of governing transformation towards sustainable resource management”.
- ESF-LIU Conference on ”Water Governance Meeting the Challenges of Global Change”. 5-10th June, Obergurgl, Austria.
- Gordon Conference Catchment Science: Interactions of Hydrology, Biology & Geochemistry. “Sentinels of Global Change”, 10-15th July, Bates College, Lewiston, USA.
- “Building the Foundations for Adaptive Water Management in the Face of Global Change”.
- Stockholm World Water Week, 24th August, Stockholm, Sweden
- “Towards adaptive governance in river basins: From panaceas to context sensitive analyses
- Seminar, Department of Environmental and Geographical Science, University of Cape Town, 21st November, Cape Town, South Africa
.”Challenges for water governance and management in time of change”
- Workshop on “Designing Transitions and Innovations for Integrated, Adaptive Water Management in South Africa and across the Globe”, 24-25th November, Pietermaritzburg, South Africa.
- “.”Challenges for water governance and management in time of change”
- Workshop on ”Integrated Environmental Governance - Opportunities and Constraints”, 6-7th December, Hebrew University, Jerusalem, Israel
- “Requirements for and steps towards integrated and adaptive water governance and management”

2012

- International workshop on “Comparative Water Studies” 20-21st January, Bonn, Germany
-“Comparative analyses of water governance systems: Concepts, methods, applications”
- University of Florida Water Institute Distinguished Scholar Seminar Series, 1st March, University of Florida, Gainesville, USA
- A Conceptual Framework for analyzing Adaptive Capacity and Multi-Level Learning Processes in Resource Governance Regimes”
- International Conference “Planet under Pressure Conference”, 26-29th March, London, UK
-“Governance of sustainable water management facing global change”
- International Conference “Water Security, Risk and Society”, 16-18th April, Oxford, UK
-“ Enhancing water security for the benefit of humans and nature – A multi-level governance challenge”
- International Workshop “Crafting or designing? Intended Institutional Change for Social-Ecological Systems”, 7-8th June, Berlin, Germany.
-“From applying panaceas to mastering complexity: Challenges for institutional change in river basins facing global change”
- International Conference on “Freshwater Governance for Sustainable Development”, 4-7th November, Drakensberg, South Africa.
-“ Enhancing water security to the benefits of humans and nature – a multi-level governance challenge”

2013

- Conference on Transdisciplinary Research and Modelling “Potential of Transdisciplinary Approaches and modelling for supporting transitions towards sustainability. 10-12th April, Munich Germany
-“ The role of models in processes of social learning and transitions towards sustainable resources management”
- Colloquium of the Institute for Environmental Decisions. 22nd April, Swiss Federal Institute of Technology, Zürich, Switzerland
-“Adaptive Management of Water Resources and Social Learning”
- GWSP International Conference “Water in the Anthropocene”, 21-24th of May, Bonn, Germany
-“ Governing the transition towards a sustainable water future”
-“The need for effective and adaptive governance and management for environmental flow implementation”
- “Water security concepts – Importance of different levels”
- 3rd Viennese Talks on Resilience “When Networks fall apart – Managing Cohesion in a World under Stress” 21st June, Vienna, Austria.
-“Building resilience in social-ecological systems to deal with challenges in an increasingly uncertain world”.
- Stockholm World Water Week, 1st September, Stockholm, Sweden
-“The role of scenarios in water governance and of water governance in scenarios”.
- III Congreso Nacional de Manejo de Cuencas Hydrográficas, 28-30th August, Morelia, Mexico.
-“Enhancing water security to the benefits of humans and nature – a multi-level governance challenge”.
- Budapest Water Summit. 8-11th October, Budapest, Hungary.
-“Water Governance in Times of Change”.

- International Symposium of Ecohydrology and Water Security. 19-22nd October Wuhan, China.
-“Governance challenges for enhancing water security and reducing trade-offs between human and environmental water needs”
- Lecture at Ostrom Workshop, 17th December, Indiana University, Bloomington, USA
-“Governing the Transformation towards Sustainability”

2014

- Conference “Rivers of the Anthropocene”. 25-27th January, Indiana University, Indianapolis, USA
-“ Water Governance in the Anthropocene”
- Conference Resilience 2014 “Resilience and Development: Mobilizing for Transformation”. 4-8th May, Montpellier, France
-“Challenges in using fsQCA to analyse performance characteristics of governance systems”
- “Polycentric governance - a multi-faceted concept”
- Conference “Sustainability in the Water-Energy-Food Nexus”, 19-20th May, Bonn, Germany
- “Governance of Transformation”
- International Conference on Data, Information and Knowledge in the Networked Society. 9-10th June, Seville, Spain.
“From Panaceas Towards a Diagnostic Approach in Water Governance and Management”
- International Conference of the Ostrom Workshop. 18-21st June, Bloomington. Indiana, USA
“Polycentricity: Requirement or Impediment for Enhancing Adaptive Capacity and Resilience of Social-Ecological Systems”
“The Management and Transition Framework.”
- International Workshop in Institutional Analysis of Social-Ecological Systems, 14-16th July, Berlin, Germany.
“Water Governance in the Face of Global Change: From Understanding to Transforming”

2015

- International Conference “Fate of the Earth”. 1-3rd April, Michigan State University, Lansing, USA
-“ Governing the Transformation towards Sustainability in the Water-Energy-Food Nexus”.
- International Conference “Motivations and arguments to act for biodiversity. Alternative ways to inspire innovative policy making”. 10-11th June, Brussels, Belgium.
- “Multi-level social learning processes in resource governance regimes”
- RIHN 10th International Symposium “Water Governance and its Transformation”, Research Institute for Humanity and Nature (RIHN), Kyoto, Japan.
-“Water Governance in the Face of Global Change: From Understanding to Transforming,,
- 2nd International Conference on Public Policy, 1st-3rd July, Catholic University of Sacro Cuore, Milan, Italy.
“Panel on Grounding polycentric governance: constitutional rules, the characteristics of social problems and their illustration in water management”
- Distinguished Lecture Series, 7th October, University of Saskatchewan, Saskatoon, Canada.
-“Enhancing Security in the Water-Energy-Food Nexus for the Benefit of Humans and Nature”

2016

- Distinguished Lecture Series, 30th of May, Institute of Ecology, Innsbruck, Austria.
-“ Water Governance in the Face of Global Change: From Understanding to Transformation”.
- International Scientific Forum on Understanding the Water-Energy-Food Nexus and its Implications for Governance, 15-16th June, Osnabrück, Germany.
-“Water-Energy-Food Nexus and its Implications for Governance”.

- Blue Economy Colloquium, 17th August, Nelson Mandela University, Port Elizabeth, South Africa.
-“Opportunities and challenges of the Blue Economy”.
- International Waters Network Workshop on Water Equity and Resilience, 24 – 26th August, Stellenbosch, South Africa
- “The Importance of a Water-Energy-Food Nexus Perspective for enhancing Resilience of Water Governance and Management”.

2017

- 10th World Congress on Water Resources and the Environment, 5-9th July, Athens, Greece.
-“An Evolutionary Perspective on Water Governance: From Understanding to Transformation”.
- XVI Biennial IASC-Conference: Practicing the Commons, 10-14th July, Utrecht, NL.
-“Pathways towards Polycentric Water Governance Systems”.

TEACHING

Courses for the bachelor and master programs in system science partly offered in cooperation with programs in the social sciences and/or geography:

- Complex Adaptive Systems
- Rule based modelling
- Adaptive Governance and Political Steering
- Adaptive Management
- Participatory modelling
- Environmental risk analysis and governance

Organization of several summer schools for PhD students and Post Docs.

(Co-)supervision of numerous PhD and Master theses at the University of Osnabrück and at several German and other European Universities. PhD theses finalized at USF:

- Johannes Halbe, 2016. Governance of Transformations Towards Sustainable Water, Food and Energy Supply Systems – Facilitating Sustainability Innovations Through Multi-Level Learning Processes
- Chun Xia-Bauer, 2014. Understanding the development of water resources management in China.
- Geeske Scholz 2014. How participatory methods facilitate social learning in natural resource management.
- Kathrin Knüppe, 2012. Comparative Case Study Analysis of Adaptive Groundwater Governance and Management Regimes: Exploring Ecosystem Services in South Africa, Spain and Germany.
- Patrick Huntjens, 2010. Water Management and Water Governance in a Changing Climate: Experiences and Insights on Climate Change Adaptation in Europe, Africa, Asia and Australia.
- Elke Herrfahrtdt, 2010. The transformation towards adaptive water governance regimes in the context of climate change.
- Nicola Isendahl, 2010. (Re-) framing Uncertainties in Water Management Practice.
- Georg Holtz, 2010. Modelling system innovations in coupled human-technology-environment system.
- Bettina Blümling, 2009. Mitigating agricultural groundwater over-extraction in the Hai River Basin of the North China Plain – a comparison of three social science research approaches.
- Silke Panebianco, 2008. Simulation sozio-technischer Abhängigkeiten bei der Verbreitung dezentraler Anlagen der Abwasserbeseitigung im ländlichen Raum der neuen Bundesländer.
- Ilke Borowski, 2008. How can social learning be supported during the implementation of the European Water Framework Directive?
- Karin Berkhoff, 2007. GIS-basierte Modellierung der Grundwasserempfindlichkeit in einer agrarischen Intensivregion.
- Britta Kastens, 2007. Ermittlung von (Miss)-Erfolgsfaktoren für die Umsetzung der EG-WRRL in Agrarintensivregionen
- Katja Siegl, 2007. Unsicherheit bei Umsetzung der EU-Wasserrahmenrichtlinie – Eine konzeptionelle und empirische Analyse
- Eva Ebenhöf, 2006. Modelling human behaviour in social dilemmas using attributes and heuristics.
- Sonja Schmidt, 2006. Ökobilanz Bioabfallentsorgung: Ökologische Bewertung von Entsorgungsoptionen für Bioabfälle unter Berücksichtigung räumlicher und ökonomischer Aspekte.

REVIEWER FOR JOURNALS

- ASCE Journal of Water Resources Planning and Management
- Advances in Complex Systems
- AMBIO
- Climatic Change
- Ecological Economics
- Ecology and Society
- Environmental Modelling and Assessment
- Environmental Modelling and Software
- Environment and Planning C: Government and Policy
- Environment and Policy
- Environmental Science and Policy
- Environmental Science and Technology
- Global Environmental Change
- Integrated Assessment
- International Environmental Agreements: Politics, Law and Economics
- International Journal of Water
- Hydrology and Earth System Sciences
- Journal of Environmental Management
- Journal of Peace Research
- Nature Climate Change
- Regional Environmental Change
- Water Alternatives
- Water International
- Water Research
- Water Resources Management
- Water Resources Research
- Water Science and Technology

ONGOING AND PAST MEMBERSHIPS IN ASSOCIATIONS, REVIEW PANELS AND EDITORIAL BOARDS

- Member of the Executive Committee of the Sustainable Water Future Programme, a core project of Future Earth
- Member of the International Scientific Advisory Board of the Global Water Futures Initiative, a 6 year research programme coordinated by the University of Saskatchewan.
- Co-Chair of the Scientific Steering Committee of the Global Water System Project, a joint project of the ESSP (Earth System Science Partnership – WCRP, IGBP, IHDP, Diversitas)
- President of TIAS, The Integrated Assessment Society
- Member of the International Scientific Advisory Commission “Deltamodel” for the Dutch Government (Implementation of the Delta Programme)

- Member of the Advisory Group for Framework 7 of the EU on “International Scientific Cooperation”
- Rapporteur of the Monitoring Panel 2005 of the 6th Framework Programme of the EU.
- Member of the International Advisory Board of the Wuppertal Institute for Climate, Environment and Energy
- Member of Review Panels for the German National Science Foundation and the German Federal Ministry of Education and Research.
- Member of the Editorial Board of Ecology and Society
- Member of the Editorial Board of Environmental Modelling and Software
- Member of the Editorial Board of International Journal of Water
- Member of the Editorial Board of Aquatic Sciences
- Member of the Editorial Board of the Australasian Journal of Environmental Management