

Curriculum Vitae Judit Lienert, Dr. sc. nat.

Address: Eawag: Swiss Federal Institute of Aquatic Science and Technology
 Department Environmental Social Sciences (ESS), Cluster Leader Decision Analysis
 Überlandstrasse 133,
 8600 Dübendorf, Switzerland
 Phone: +41 (0)58 765 55 74
 Email: judit.lienert@eawag.ch

Homepages: <http://www.eawag.ch/en/aboutus/portrait/organisation/staff/profile/judit-lienert/show/>
<http://www.eawag.ch/en/department/ess/main-focus/decision-analysis-da/>

Education / Titles / Further education

2017 Certificate of Advanced Studies FHNW (CAS) Leadership in Science. Fachhochschule Nordwestschweiz, Hochschule für Technik, Windisch, Switzerland, 05.09.-08.12.2017
 2002 PhD in natural sciences (Dr. sc. nat.), Faculty of Science, University of Zürich, Switzerland. Title of thesis: "Population biology of wetland plants in fragmented landscapes"
 2000 Diploma in biology, University of Zürich, Switzerland
 1993 Adults high school (Eidg. Matura Typus B; Kant. Maturitätsschule f. Erwachsene, KME), Zürich, Switzerland
 1988 Diploma in boat building, City and Guilds of London Institute, International Boatbuilding Training Centre, IBTC, Lowestoft, United Kingdom
 1986 Diploma in General Nursing (Allgemeine Krankenpflege, AKP), Krankenpflegeschule Zürich, Switzerland

Professional academic experience

2013–ongoing Cluster leader "Decision Analysis", Department Environmental Social Sciences (ESS), Eawag, Dübendorf
 2011–ongoing Lecturer "Multi-Criteria Decision Analysis", ETH Zürich, Switzerland
 2018 Department head ad interim, Dept. of Environmental Social Sciences ESS, Eawag, 01.03-30.11.2018
 2009 – 2013 Group leader "Decision Analysis", Department Systems Analysis, Integrated Assessment and Modelling (Siam), Eawag
 2010 Visiting researcher Institute for Resources, Environment and Sustainability (IRES), University of British Columbia (UBC), Vancouver, Canada
 2007 – 2009 Senior scientist, Departments Siam and Urban Water Management (UWM), Eawag
 2001 – 2007 Researcher and Co-project leader of the transdisciplinary project Novaquatis, Department UWM, Eawag

Research interests

- Methodologically, the main focus is on Multi-Criteria Decision Analysis (MCDA) and Environmental Decision-Making
- Specific MCDA focus is on:
 - problem structuring (e.g. stakeholder analysis, creativity techniques, building objectives hierarchies)
 - elicitation of stakeholder preferences (e.g. interviews, online surveys, group decision-making)
 - behavioral (psychological) aspects (e.g. biases when eliciting weights from people)
 - dealing with uncertainty (e.g. scenario planning, sensitivity analyses, Multi-Attribute Utility Theory, MAUT)
- Simplify decision processes to increase their practicability
- Interdisciplinary approaches to integrate "hard facts" and "subjective values"
- Transdisciplinary approaches to involve stakeholders in applied projects about complex environmental decisions
- Application fields are Sustainable Urban Water Management and Management of Ecosystem Services

Current research projects

- 2018–ongoing: FANFAR; cooperation for flood forecasts and alerts in West Africa
<https://www.eawag.ch/en/department/ess/projects/fanfar/>
- 2018–ongoing: Environmental decision analysis with games – Edanaga
<https://www.eawag.ch/en/department/ess/projects/edanaga/>
- 2018–ongoing: Fairness in the planning of new wastewater infrastructures
<https://www.eawag.ch/en/department/ess/projects/fairness-in-the-planning-of-new-wastewater-infrastructures/>
- 2016–ongoing: Decision-making for wastewater infrastructure transitions
<http://www.eawag.ch/en/department/ess/projekte/decision-making-for-wastewater-infrastructure-transitions/>
- 2015–ongoing: Practical decision analysis for value-focused planning of wastewater infrastructures
<http://www.eawag.ch/en/department/ess/projekte/decision-analysis-for-wastewater-infrastructures/>

Main completed research projects

- 2015 – 2017: Serious games as an element of Multi-Criteria Decision Analysis
<https://www.eawag.ch/en/department/ess/projects/serious-games-as-an-element-of-multi-criteria-decision-analysis/>
- 2015 – 2017: Improving problem structuring in Multi-Criteria Decision Analysis
<http://www.eawag.ch/en/department/ess/projekte/improving-problem-structuring-in-multi-criteria-decision-analysis/>
- 2010 – 2014: Sustainable Water Infrastructure Planning (SWIP)
<http://www.eawag.ch/en/department/sww/projects/sustainable-water-infrastructure-planning-swip/>
- 2010 – 2011: Valuing adaptation to climate change risks in the water sector
<http://www.eawag.ch/en/department/sww/projects/valuing-adaptation-to-climate-change-risks-in-the-water-sector/>
- 2008 – 2010: How to handle hospital wastewater
<http://www.eawag.ch/en/department/ess/projekte/how-to-handle-hospital-wastewater/>
- 2007 – 2014: A decision analysis approach to river rehabilitation
<http://www.eawag.ch/en/department/ess/projekte/a-decision-analysis-approach-to-river-rehabilitation/>
- 2001 – 2007: Novaquatis – A transdisciplinary research project about urine source separation as a new element in wastewater management. http://www.novaquatis.eawag.ch/index_EN

Teaching

- Multi-Criteria Decision Analysis, ETH Zürich, Dept. Environm. Sciences, yearly course 701-1522-00, Spring Semester
- Guest lecture on MCDA in: Advanced Environmental, Social and Economic Assessments, ETH Zürich, Institute of Environmental Engineering, Chair of Ecological Systems Design, yearly course 102-0307-00, Autumn Semester

Awards

- Marttunen, M., Lienert, J., Belton, V. EURO Award for Best EJOR Paper. Structuring Problems for Multi-Criteria Decision Analysis in practice: A literature review of method combinations. Assoc. of Europ. Operational Res. Societies, 30. EURO Conference, Dublin 26.6.19. <https://www.euro-online.org/web/pages/1490/award-for-the-best-ejor-paper-eabep>
- Larsen, T.A., Lienert J. Swiss academies award for transdisciplinary research 2008, td-net and Stiftung Mercator Schweiz, given to the project Novaquatis, Zürich, Switzerland, 27.11.2008

Scientific boards & committees

- 2018–ongoing: Lienert, J., Linkov, I. Guest Editors of Special Issue on Environmental Decisions. EURO Journal on Decision Processes. Publication of Feature Issue planned for Autumn/ Winter 2019. <https://www.editorialmanager.com/ejdp>
- 2017–ongoing: Member of the management board of EURO Working Group on Behavioral Operational Research (EWG-BOR; established in January 2017); <http://bor.aalto.fi/index.html>
- 2016–ongoing: Member of advisory board of Saguf, Swiss Academic Society for Environmental Research and Ecology <http://www.naturalsciences.ch/organisations/saguf>
- 2015–2017: Member of working group “Einzugsgebietsmanagement” (integrated catchment management), Wasser-Agenda 21. <http://www.wa21.ch/de/Arbeitsgruppen/Einzugsgebietsmanagement>
- 2012–ongoing: Editorial board of EURO Journal on Decision Processes <http://www.springer.com/business+%26+management/operations+research/journal/40070>.

Selected publications MCDA

Full list of publications: <http://www.eawag.ch/en/aboutus/portrait/organisation/staff/profile/judit-lienert/show/>

Reviews / conceptual

- Aubert, A., Bauer, R., Lienert, J. (2018) A review of water-related serious games to specify use in environmental Multi-Criteria Decision Analysis. *Environmental Modelling & Software* 105:64-78.
- Marttunen, M., Belton, V., Lienert, J. (2018) Are objectives hierarchy related biases observed in practice? A meta-analysis of environmental and energy applications of Multi-Criteria Decision Analysis. *European Journal of Operational Research* 265: 178-194.
- Marttunen, M., Lienert, J., Belton, V. (2017) Structuring problems for Multi-Criteria Decision Analysis in practice: A literature review of method combinations. Invited Review. *European Journal of Operational Research* 263(1): 1-17.
- Reichert, P., Langhans, S.D., Lienert, J., Schuwirth, N. (2015) The conceptual foundation of environmental decision support. *Journal of Environmental Management* 154: 316-332.

MCDA methodological

- Aubert, A., Lienert, J. (2019) Gamified online survey to elicit citizens' preferences and enhance learning for environmental decisions. *Environmental Modelling & Software* 111:1-12.
- Haag, F., Lienert, J., Schuwirth, N., Reichert, P. (2019) Identifying non-additive multi-attribute value functions based on uncertain indifference statements. *Omega* 85: 49-67.
- Haag, F., Zürcher, S., Lienert, J. (2019) Enhancing the elicitation of diverse decision objectives for public planning. *European Journal of Operational Research* 279: 912-928.

- Marttunen, M., Haag, F., Belton, V., Mustajoki, J., Lienert, J. (2019) Methods to inform the development of concise objectives hierarchies in multi-criteria decision analysis. *European Journal of Operational Research* 277(2): 604-620.
- Zheng, J., Lienert, J. (2018) Stakeholder interviews with two MAVT preference elicitation philosophies in a Swiss water infrastructure decision: aggregation using SWING-weighting and disaggregation using UTA-GMS. *European Journal of Operational Research* 267(1): 273-287.
- Lienert, J., Duygan, M., Zheng, J. (2016) Preference stability over time with multiple elicitation methods to support wastewater infrastructure decision-making. *European Journal of Operational Research* 253(3): 746-760.
- Scholten, L., Schuwirth, N., Reichert, P., Lienert, J. (2015) Tackling uncertainty in multi-criteria decision analysis – An application to water supply infrastructure planning. *European Journal of Operational Research* 242(1): 243-260.

MCDA applications

- Harris-Lovett, S., Lienert, J., Sedlak, D. L. (2019) A mixed-methods approach to strategic planning for multi-benefit regional water infrastructure. *Journal of Environmental Management* 233: 218-237.
- Marttunen, M., Weber, C., Åberg, U., Lienert, J. (2019) Identifying relevant objectives in environmental management decisions: An application to a national monitoring program for river restoration. *Ecological Indicators* 101: 851-866.
- Zheng, J., Egger, C., Lienert, J. (2016) A scenario-based MCDA framework for wastewater infrastructure planning under uncertainty. *Journal of Environmental Management* 183 (3): 895-908.
- Lienert, J., Schnetzer, F., Ingold, K. (2013) Stakeholder analysis combined with social network analysis provides fine-grained insights into water infrastructure planning processes. *Journal of Environmental Management* 125: 134-148.
- Lienert, J., Koller, M., Konrad, J., McArdell, C.S., Schuwirth, N. (2011) Multiple-criteria decision analysis reveals high stakeholder preference to remove pharmaceuticals from hospital wastewater. *Environmental Science & Technology* 45(9): 3848–3857.

Selected publications urine source separation

- Lienert, J., Larsen, T.A. (2010) High acceptance of urine source separation in seven European countries: A review. *Environmental Science & Technology* 44(2): 556–566.
- Larsen, T.A., Alder, A.C., Eggen, R.I.L., Maurer, M., Lienert, J. (2009) Source separation: Will we see a paradigm shift in wastewater handling? *Environmental Science & Technology* 43(16): 6121-6125.
- Larsen, T.A., Maurer, M., Udert, K.M., Lienert, J. (2007) Nutrient cycles and resource management: implications for the choice of wastewater treatment technology. *Water Science and Technology* 56(5): 229-237.
- Lienert, J., Larsen, T.A. (2007) Soft paths in wastewater management – the pros and cons of urine source separation. *GAIA* 16(4): 280-288.
- Lienert, J., Güdel, K., Escher, B.I. (2007) Screening method for ecotoxicological hazard assessment of 42 pharmaceuticals considering human metabolism and excretory routes. *Environmental Science & Technology* 41(12): 4471-4478.
- Lienert, J., Bürki, T., Escher, B.I. (2007) Reducing micropollutants with source control: substance flow analysis of 212 pharmaceuticals in feces and urine. *Water Science and Technology* 56(5): 87-96.
- Lienert, J., Larsen, T.A. (2006) Considering user attitude in early development of environmentally-friendly technology: A case study of NoMix toilets. *Environmental Science & Technology* 40(16): 4838-4844.

Selected publications habitat fragmentation of wetlands

- Lienert, J. (2004) Habitat fragmentation effects on fitness of plant populations – a review. *Journal for Nature Conservation* 12: 53-72.
- Lienert, J., Fischer, M. (2003) Habitat fragmentation affects the common wetland specialist *Primula farinosa* in north-east Switzerland. *Journal of Ecology* 91: 587-599.
- Lienert, J., Diemer, M., Schmid, B. (2002) Effects of habitat fragmentation on population structure and fitness components of the wetland specialist *Swertia perennis* L. (Gentianaceae). *Basic and Applied Ecology* 3: 101-114.
- Lienert, J., Fischer, M., Diemer, M. (2002) Local extinctions of the wetland specialist *Swertia perennis* L. (Gentianaceae) in Switzerland: a revisitation study based on herbarium records. *Biological Conservation* 103: 65-76.
- Lienert, J., Fischer, M., Schneller, J., Diemer, M. (2002) Isozyme variability of the wetland specialist *Swertia perennis* L. (Gentianaceae) in relation to habitat size, isolation, and plant fitness. *American Journal of Botany* 89(5): 801-811.

Book

Larsen, T.A., Udert, K.M., Lienert, J. (eds.) (2013) *Source Separation and Decentralization for Wastewater Management*. IWA publishing, London, UK. ISBN 9781843393481 (paperback), ISBN 9781780401072 (eBook). <http://www.iwapublishing.com/books/9781843393481/source-separation-and-decentralization-wastewater-management>