Module number 95993	Module name Elective: Sustainability Planning and Assessment	
Course of study MSc Environmental Governance	**Type of course** Elective module	**Semester / Rotation** 2nd / Summer Term
Teaching methods Lectures, group work, research	**Prerequisites for attendance** None	**Language** English
Type of examination (Final Grade Composition) PL PPT presentation to be handed in (100%) Re-exam: PL PPT /oral exam		**ECTS-LP (Workload)** 5 (150h, of this 60 contact hrs.)
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Syllabus

In this module, students will be introduced to emerging concepts of public planning with regard to sustainability, i.e. appreciating the spatial and temporal dimensions of sustainability transformations.

Starting from conventional frameworks of spatial planning, the evolution of strategic planning concepts in the sustainability context will be reviewed. The core of the module constitutes state-of-the-art understanding of specific and integrated strategies for sustainability planning and environmental assessments: conceptual approaches, theoretical underpinnings and methodologies. The core is supplemented by an introduction to system dynamics thinking, in particular the qualitative modeling of causal loop analyses.

The module structure is as follows: Daily obligatory (self) preparation of lectures through intensive reading of core article. During contact hours: student facilitated discussion in groups, followed by a Socratic method-lecture. Self-Learning Package with introduction into system dynamics thinking, supplemented by workshop and individual coaching session on casual loop diagramming

Theoretical contents will be illustrated through

- field excursions in the context of “Planning and Implementing the Energy Transition of the State of Baden-Württemberg”.
- workshop and clinics on system analysis and system dynamics modelling / causal loop diagramming focusing on the case of “Transitioning a municipal food system in

Grading will be based on preparation of individual policy briefs on the model-based analysis of selected case issues (case from Global North or Global South).

Learning goals and qualifications

In this module students learn to:

- understand the historical and theoretical origins of planning approaches for sustainability (2);
- evaluate different sustainability assessment approaches, models, appraisals, and methodologies (5);
- appreciate the spatial and temporal dimensions of sustainability transformations
- develop critical thinking, reading, and research skills (3, 6);
- comprehend system analysis and system dynamics thinking (2)
- apply techniques of system dynamics modelling / causal loop diagramming (1, 3);

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding

something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

Examples of obligatory readings during module and in preparation of lectures (one per day):

Abson, D. J., Fischer, J., Leventon, J., Newig, J., Schomerus, T., Vilsmaier, U., . . . Lang, D. J. (2017). Leverage points for sustainability transformation. *Ambio, 46*(1), 30-39.

Duygan, M., Stauffacher, M., & Meylan, G. (2019). A heuristic for conceptualizing and uncovering the determinants of agency in socio-technical transitions. *Environmental Innovation and Societal Transitions, 33*, 13-29

Freeman, R., Yearworth, M., & Preist, C. (2015). Revisiting Jevons' Paradox with System Dynamics: Systemic Causes and Potential Cures. *Journal of Industrial Ecology, 20*(2), 341-353

Fuseini, I., & Kemp, J. (2015). A review of spatial planning in Ghana's socio-economic development trajectory: A sustainable development perspective. *Land Use Policy, 47*, 309-320

Hacking, T., & Guthrie, P. (2008). A framework for clarifying the meaning of Triple Bottom-Line, Integrated, and Sustainability Assessment. *Environmental Impact Assessment Review, 28*(2-3), 73-89.

Haraldsson, H. (2004). *Introduction to System Thinking and Causal Loop Diagrams*. Lund: Lund University.

Kaufman, R., & Brethower, D. (2019). Are Design Thinking and System Thinking and Planning Really Different? And are They Both Missing a Critical Focus? *Performance Improvement, 58*(10), 6-12.

Pereira, L., Frantzeskaki, N., Hebinck, A., Charli-Joseph, L., Drimie, S., Dyer, M., . . . Vervoort, J. M. (2020). Transformative spaces in the making: key lessons from nine cases in the Global South. *Sustainability Science, 15*(1), 161-178

Sterman, J. D. (2002). All models are wrong: reflections on becoming a systems scientist. *System Dynamics Review, 18*(4), 501-531. doi:https://doi.org/10.1002/sdr.261

Svendrup, H. U., Olafsdottir, A.H. (2018) System Analysis and System Dynamics Modelling. Icelandic University Reykjavik

Van Assche, K., & Verschraegen, G. (2008). The Limits of Planning: Niklas Luhmann's Systems Theory and the Analysis of Planning and Planning Ambitions. *Planning Theory, 7*(3), 263-283