Constellation Analysis as methodology for implementing Resource-Oriented Sanitation in Rural Germany

Enhancing the implementation of ROS by interdisciplinary planning methods

Mario Wolf, Kirsten Maier, Jörg Londong
Bauhaus-Institut for Infrastructure Solutions (b.is)
Bauhaus-Universität Weimar

SWWS & ROS Conference 2018
The International Water Association
14th – 18th October, 2018, Haifa/Israel

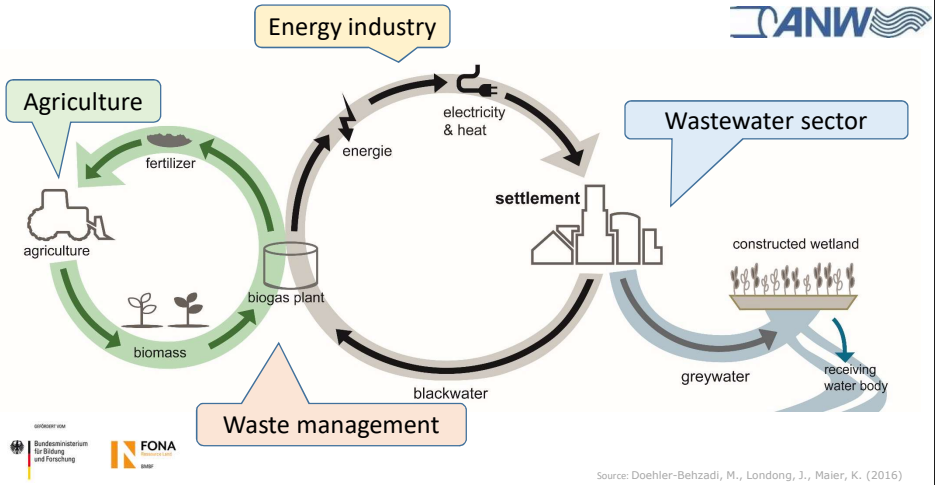
Case Study

Back ground

- Eastern Germany
- Population village: 200, population administrative union (24 villages): 9000
- 8 Wastewater Treatment Plants
- Connection rate: 50%

Resource-Oriented Sanitation Model

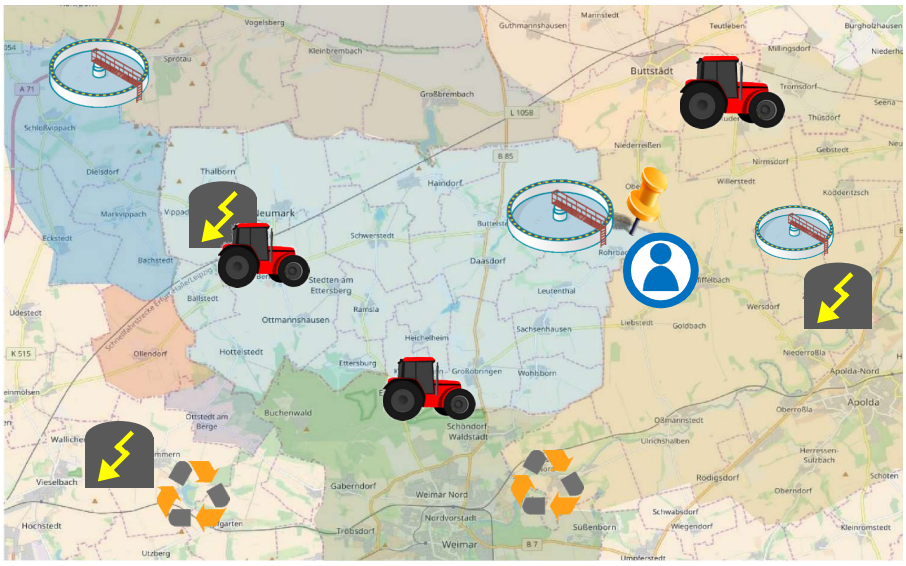
Bauhaus-Universität Weimar



Source: Doehler-Behzadi, M., Londong, J., Maier, K. (2016)

Stakeholders and Infrastructures

Bauhaus-Universität Weimar



Constellation Analysis – Conceptual approach

Bauhaus-Universität Weimar

Back ground

- **Aim**: "To open up innovation research processes for different perspectives regarding problems,[...] identification of strategic approaches for driving of innovation processes". (Schoen et al. 2008)
- **Principles**:
  - Coequal consideration of heterogeneous elements
  - Observations of their relations

Elements

- *Stakeholders*
- *Symbolic elements*
- *Technical elements*
- *Natural elements*

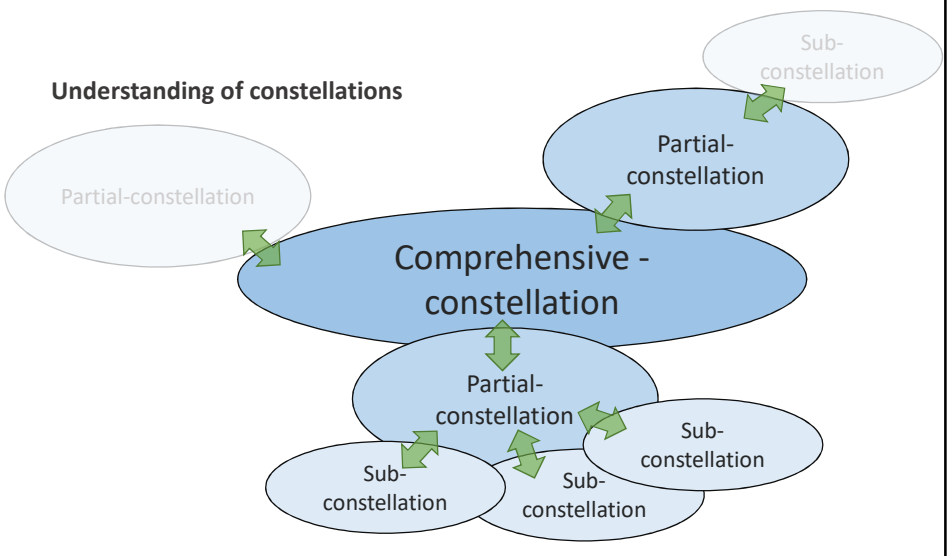
Relations

- *Directed relation*
- *Oppositional relation*
- *Conflictual relation*
- ...

Constellation Analysis – Conceptual approach

Bauhaus-Universität Weimar

Understanding of constellations



Constellation Analysis –Strategical approach

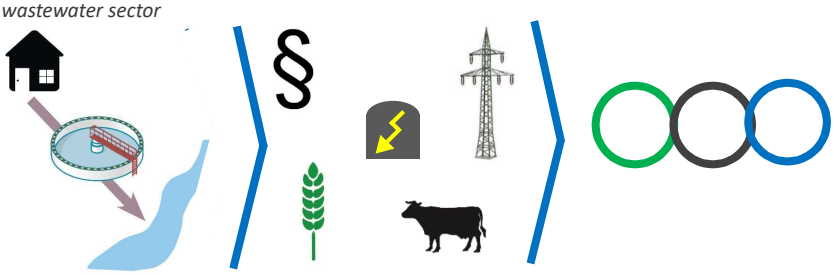
Bauhaus-Universität Weimar

Constellation Analysis as a tool for strategy formulation

Initial-constellation
Current situation of the wastewater sector

Partial-/Sub-constellations
Fields of action

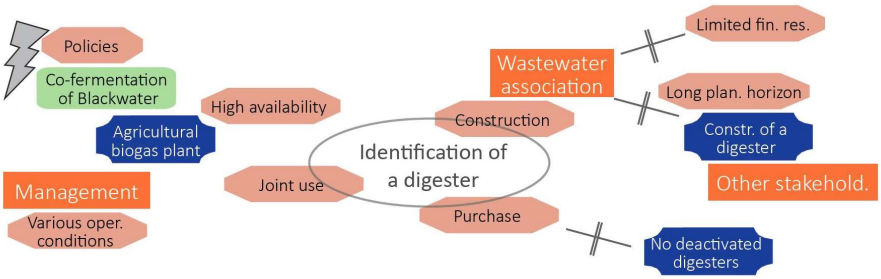
Target-constellation
ROS-Model in Rohrbach



Constellation Analysis as a strategic tool

Bauhaus-Universität Weimar

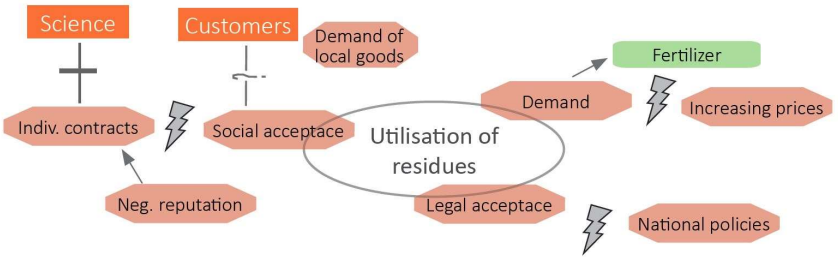
Field of action: Identification of a biogas digester



Constellation Analysis as a strategic tool

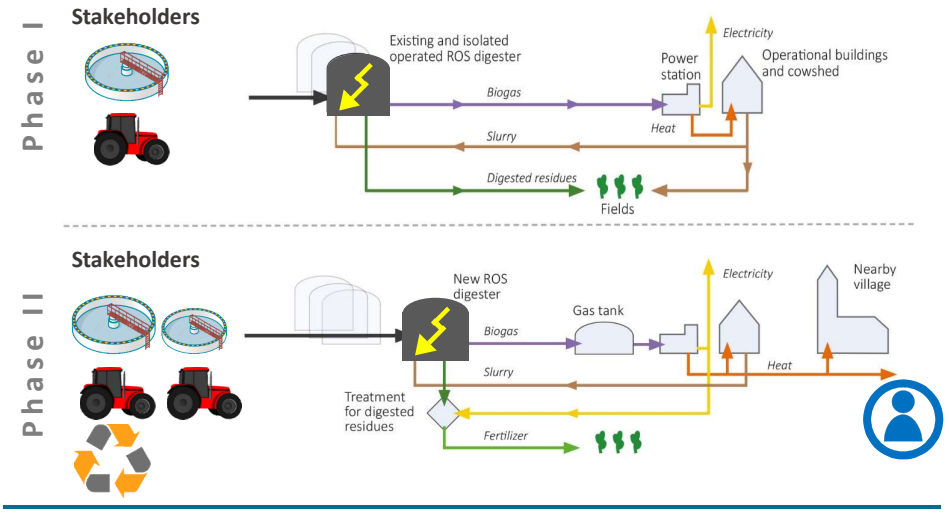
Bauhaus-Universität Weimar

Field of action: Utilisation of residues



Results – Operational concept of the ROS

Bauhaus-Universität Weimar



Conclusion on the case study

Bauhaus-Universität Weimar

- A specific operational concept for a ROS-Model was developed adressing national, regional and local requirements and interests
- High flexibility is achieved by two implementation phases
  - 1st phase: most feasible option (f.e. testing phase)
  - 2nd phase: effective option (high level of linkages between different sectors)
- Obstacles:
  - Are known, manageable and can be directly addressed

Overall Conclusion

Bauhaus-Universität Weimar

- Differentation of the context into a set of constellations as a pragmatic strategic approach
- Analysis of crucial fields of action allows to identify specific potentials catalysing or obstacles hampering the implementation of the ROS
- Applying the Constellation Analysis as a strategic tool can effectively enhance the implementation of ROS

Mario Wolf
Bauhaus-Institut for Infrastructure Solutions (b.is)
Coudraystraße 7
99423 Weimar, Germany
ulrich.mario.wolf@uni-weimar.de