

One Health – Transdisciplinarity at ZB MED

Eva Seidlmayer, Christoph Poley
ZB MED – Information Centre for Life Sciences

1. Background

Ebola, SARS, bird flu, food safety scandals, antibiotic resistance, and microplastics in water and organisms all have one thing in common. They are clear examples of why pathologies and diseases can no longer be explained in isolation without reference to how we feed ourselves, how we produce food, and how we assist the vulnerable and needy. Our understanding of medicine in today's world requires us to take a far more complex view of human beings within the ecosystems they inhabit. Since the last decade, this holistic understanding that environmental factors can impact human health has been referred to as *One Health*.

ZB MED – Information Centre for Life Sciences offers tailor-made tools for research questions concerning *One Health* and related fields.

2. *One Health* as a transdisciplinary research principle

One Health is an integrated, systemic research approach. It recognizes that human health is closely connected to the health of livestock, wild animals and nature (Cumming 2015).

One Health is an age-old concept that is implicitly referenced in ancient Greek philosophy. It is currently taking on new relevance in science and policymaking as a result of climate change, globalisation, and the increasing mobility of people, animals and goods.

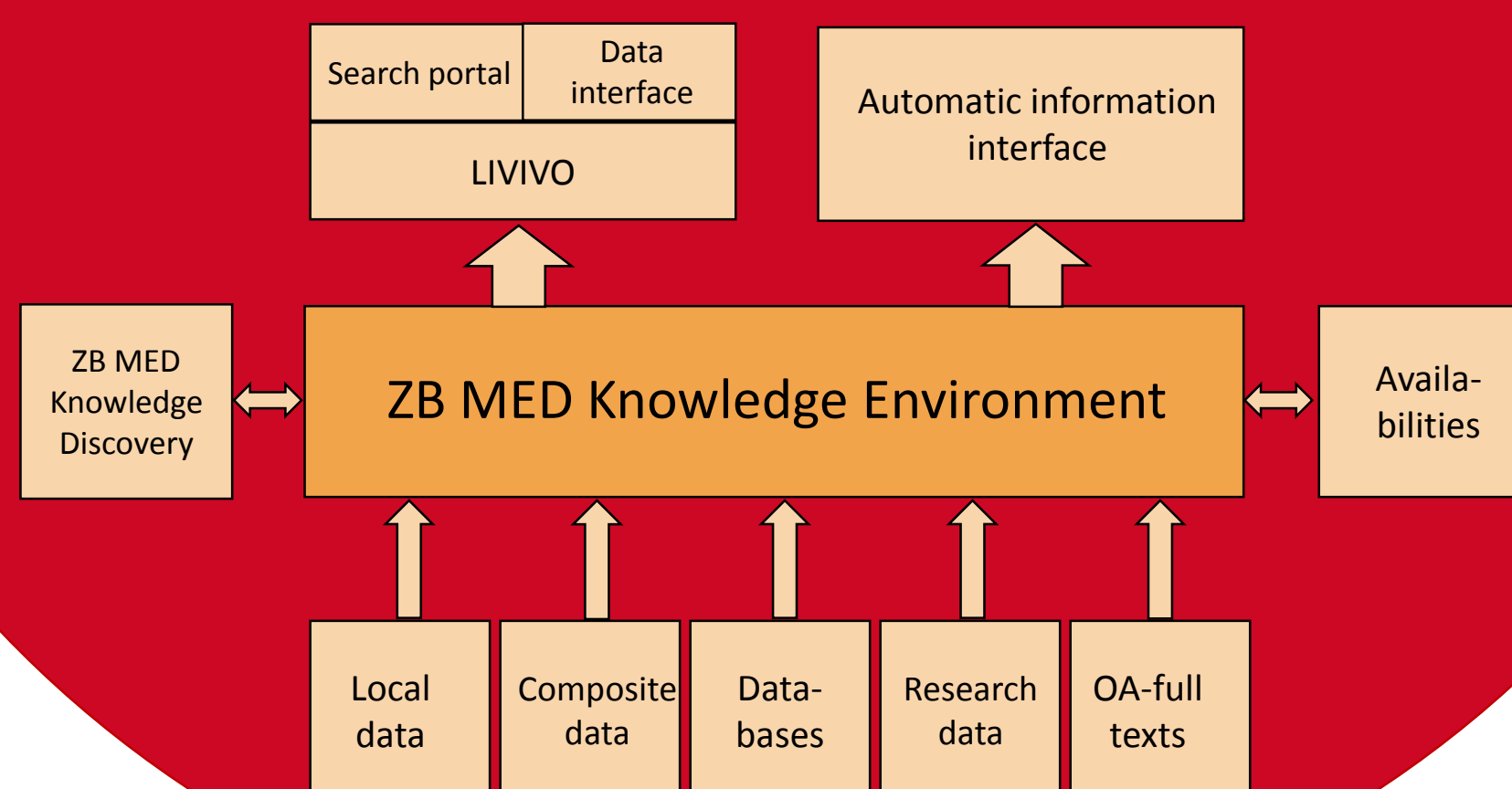
3. Interdisciplinarity or transdisciplinarity at ZB MED?

ZB MED takes a transdisciplinary approach to its provision of literature and services (Mittelstrass 2007).

Transdisciplinarity focuses on determining the most relevant problems by integrating diverse forms of research. It breaks down the historically conditioned limitations of conventional research strategies while also applying a critical eye to the received content. Incorporating both disciplinary and interdisciplinary styles of research, *transdisciplinarity* does not imply the dissolution of individual specialist disciplines, but rather their integration, if and when this is conducive to addressing research questions.

4. One Health tools at ZB MED

- Structured literature from the full range of life sciences in the ZB MED Knowledge Environment: more than 60 million records from 65 databases, 58% of which cover medicine/health, 31% agricultural science, 14% environmental science, and 11% nutritional science (some databases appear in more than one category)
- Data enrichment through the addition of research data, information on availability, and other forms of enhancement.



4.1 Support for transdisciplinary research

- Search queries and metadata on the LIVIVO search platform are expanded to include vocabulary from the specialist thesauri MeSH (medicine), AGROVOC (agriculture) and UMTES (environment)
 - enhances search queries
 - assigns items to specialist groups
 - identifies related terms
- Transdisciplinary filtering and frame of reference for search results
- Availability of open access full texts and research data, plus access to licensed full texts from any location



4.2 Unique perspectives on holdings based on ZB MED research

- Use of ontologies to link literature to databases facilitates disciplinary and transdisciplinary searches in LIVIVO (Müller et al. 2017)
- ZB MED develops its own tools for the interoperability of ontologies, making it possible to link records, display graphical relationships, rank individual items by relevance, run complex searches of related terms, and link to the specialist thesauri MeSH (medicine), AGROVOC (agriculture) and DrugBank (pharmaceutics)

4.3 Publishing on transdisciplinary topics

- Publication of disciplinary and interdisciplinary journals, handbooks, congress abstracts, research data and grey literature
- Gold and green open access publishing
- Advice on open access and research data management



5. Summary

ZB MED – Information Centre for Life Sciences offers a range of services that support research strategies for questions in the field of *One Health* and in the fields of medicine and nutritional, environmental and agricultural science, catering to both disciplinary and interdisciplinary perspectives.

References

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Contact details

Dr. phil. Eva Seidlmayer
Information Services Department
ZB MED – Information Centre for Life Sciences
Gluecker Strasse 60
50931 Cologne, Germany
seidlmayer@zbmed.de
livivo@zbmed.de
www.livivo.de