



Swiss TPH



Integrated Approaches to Health: The Place of One Health and its Future

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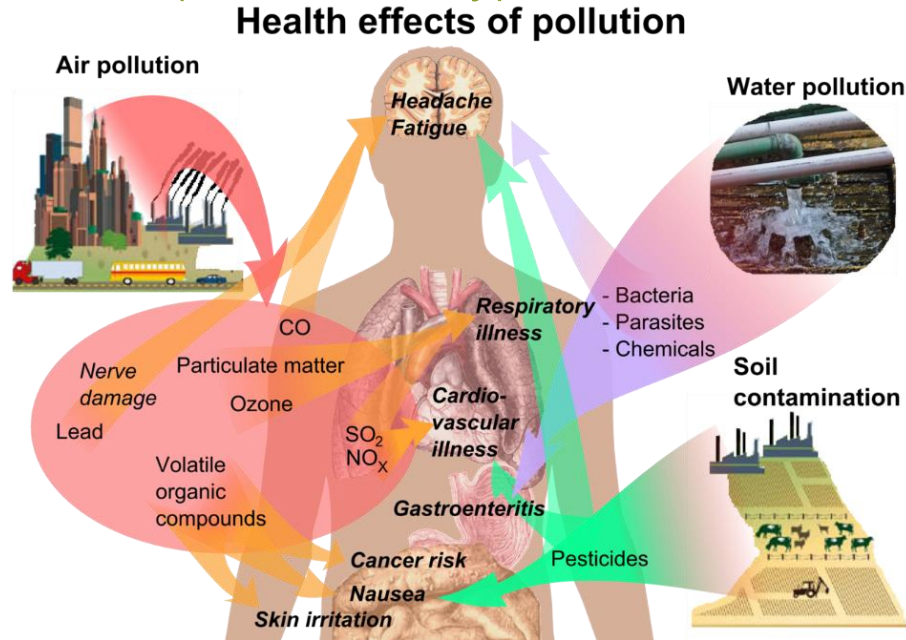
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Overview

- Comparison of leading integrated approaches to Health and the Environment:
 - EcoHealth, One Health, Planetary Health
- Relationship to Public Health and its neighboring disciplines:
 - Environmental health, Natural foci of disease, Veterinary public health, Medical anthropology
- Paradigms and methods
 - One Health in Social-Ecological Systems: sustaining health and ecosystem service
 - A game theory of One Health in Social-Ecological Systems
- Operationalization of integrated approaches
 - Example of the European Union

Paradigmatic evolution of public health sub-disciplines (I)

Environmental Health: all aspects of the natural and built environment affecting human health (>19th century)



By Mikael Häggström. When using this image in external works, it may be cited as: Häggström, Mikael (2014). "Medical gallery of Mikael Häggström 2014". WikiJournal of Medicine 1 (2). DOI:10.15347/wjm/2014.008.

Public health



EH

Environment



Paradigmatic evolution of public health sub-disciplines (II)

- **Evgeny Pavlovsky** (Leningrad), dean of the Soviet descriptive epidemiologists, formal developer of medical ecological notions like “**landscape epidemiology**” and “**Natural Foci of Infections**”



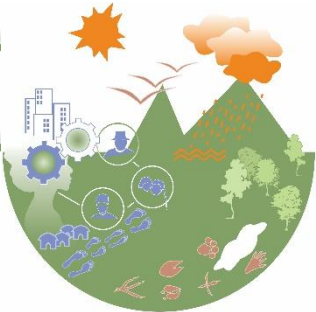
Public health



Animal health



Environment



NFI

EH

NFI

Paradigmatic evolution of public health sub-disciplines (III)

- **Veterinary Public Health (VPH)**, which is defined as the **contribution of veterinary medicine to public health**. VPH is well established in international organisations, governmental administrations and academia.
- VPH was originally conceived by the Centers for Disease Control in Atlanta by James H. Steele.

Public health



VPH

Animal health



NFI

EH

Environment



NFI



Paradigmatic evolution of public health sub-disciplines (IV)

Medical Anthropology and Health Social Science

Emergence as a Distinct Field

The formal recognition of medical anthropology as a distinct subfield occurred in the mid-20th century:

- William Caudill (1953): First to identify the field in his paper "Applied Anthropology in Medicine"
- 1960s: Academics, applied scientists, and clinicians worked to organize the emerging social science in medicine movement
- 1967: Group for Medical Anthropology (GMA) established
- 1972: Society for Medical Anthropology (SMA) became a formal section of the American Anthropological Association 2 4

Public health



VPH

Animal health

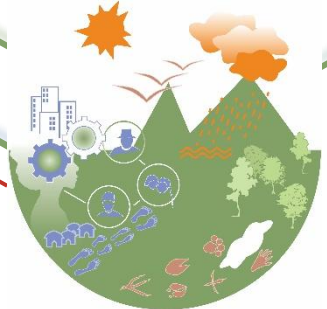


NFD

EH

MA

Environment and Society



NFD

Paradigmatic evolution of integrated approaches to health (I)

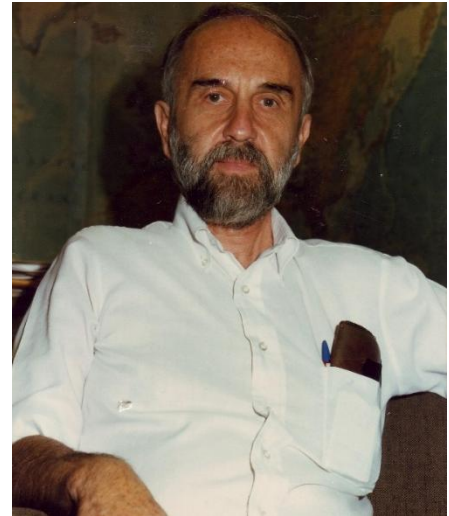
- **Calvin Schwabe's**

One Medicine inspired from his work with Dinka pastoralists in Sudan in the 1960s

“There is no difference of paradigm between human and veterinary medicine.

Both sciences share a common body of knowledge in anatomy, physiology, pathology, on the origins of diseases in all species.”

Schwabe C. (1964, 1984 3rd Edition):
Veterinary Medicine and Human Health
Williams and Wilkins, Baltimore



Paradigmatic comparison of integrated approaches to health

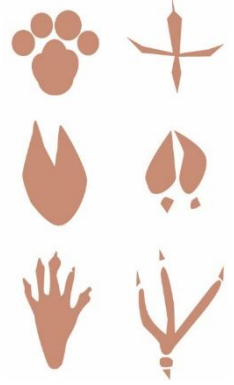
Public health



OM



Animal health



Environment and
Society



EcoHealth (Rapport et al. 1998, Wilcox, Aguirre, 2003)

Complementing the paradigm,

- **applying the concept of health to ecosystems,**
- **explicitly addressing links between oceans, wildlife, and human health.**

EcoHealth 1, 211–212, 2004
DOI: 10.1007/s10393-004-0122-6

ECOHEALTH

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Editorial

One Ocean, One Health

Paradigmatic comparison of integrated approaches to health

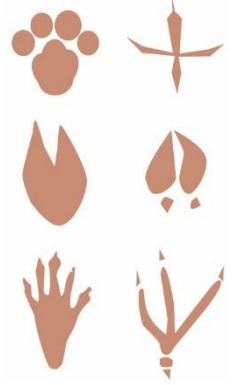
Public health



OM



Animal health



EcoHealth
OWOH™



Environment and
Society



Paradigmatic evolution of integrated approaches to health

- Wildlife Conservation Society «**One World - One Health_{TM}**»: Conservation requires healthy humans and animals around conservation areas (Osofsky, Karesh 2003).
- **One Health**: «Added value of a closer cooperation of human and animal health and other sectors» (Zinsstag 2005)
- **One Health in Social-Ecological Systems** (OHSES) (Zinsstag 2011, 2023): «includes health of humans and animals as a quantitative and qualitative interaction and outcome process in "social-ecological systems»
- **Planetary Health**: Assess the potential implications for health of multiple changes in the Earth's «essential life support systems». (Haines, Horton 2014) “A field focused on characterizing the human health impacts of human-caused disruptions of Earth's natural systems” (PHA 2021).

Public health



Animal health



OM



EcoHealth
OWOH



One Health

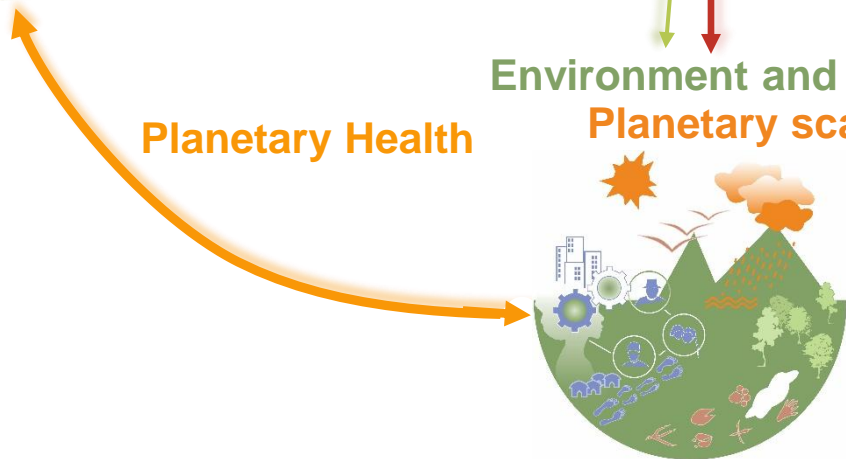


added value optimization

Environment and society

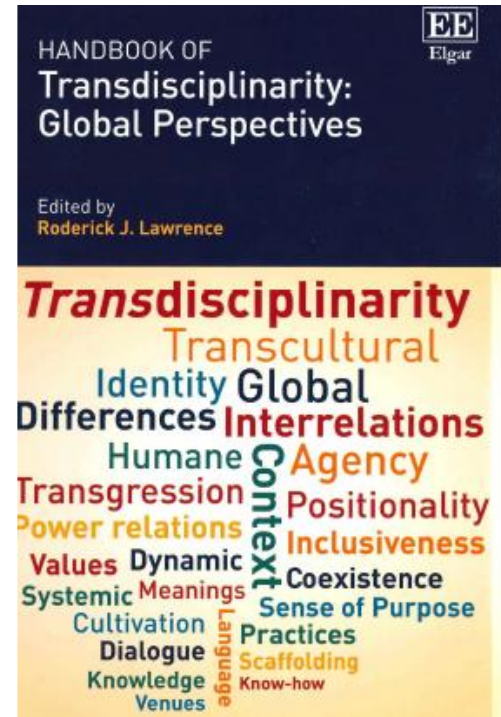
Planetary scale

Planetary Health



19. Value-added transdisciplinary One Health research and problem solving

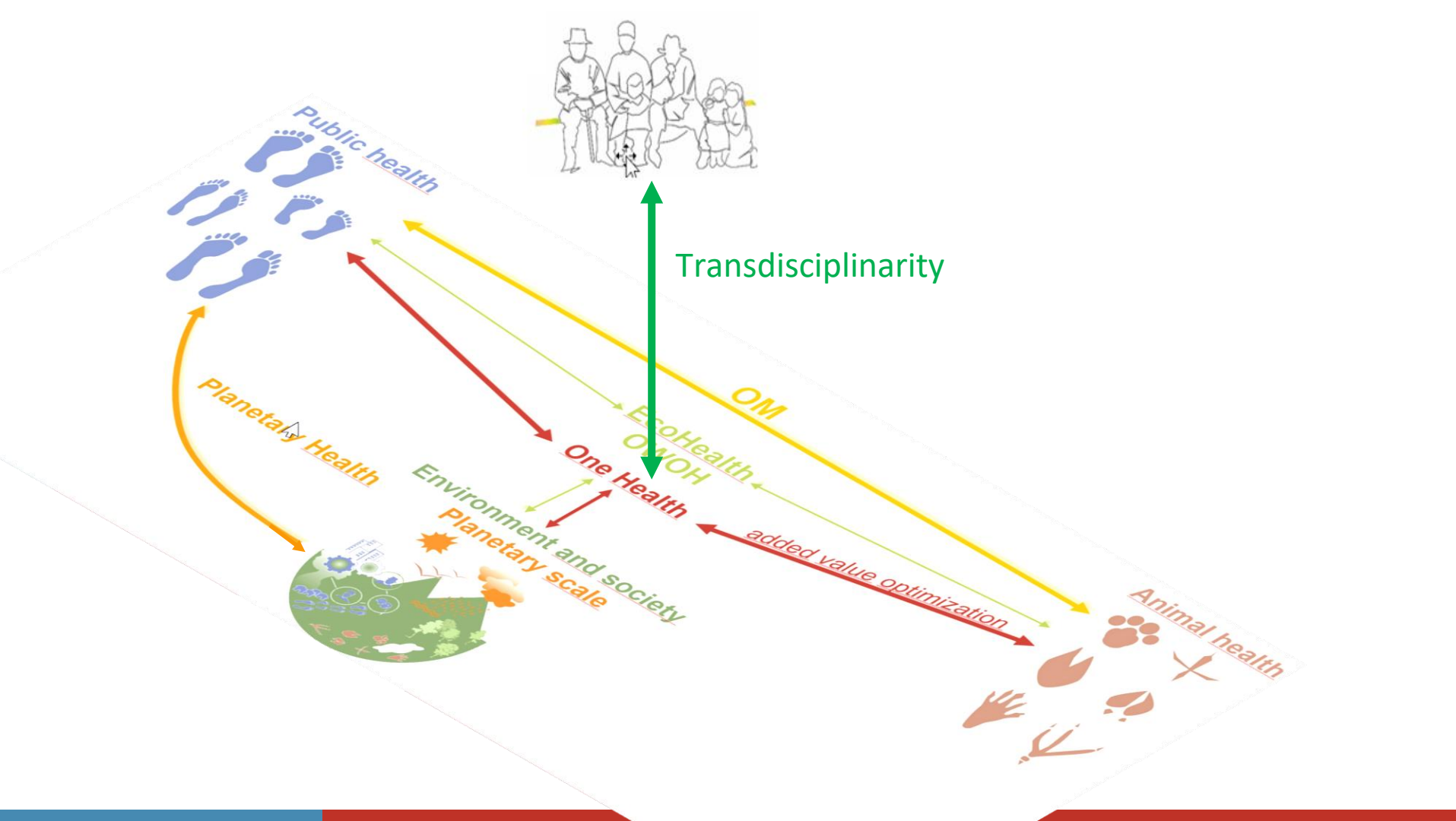
Jakob Zinsstag, Kristina Pelikan, Monica Berger Gonzalez, Andrea Kaiser-Grolimund, Lisa Crump, Stephanie Mauti, Kathrin Heitz-Tokpa, Bassirou Bonfoh, Seid Mohammed Ali, Rahma Abtidon and Rea Tschopp



Non-academic actors become research partners

www.transdisciplinarity.ch



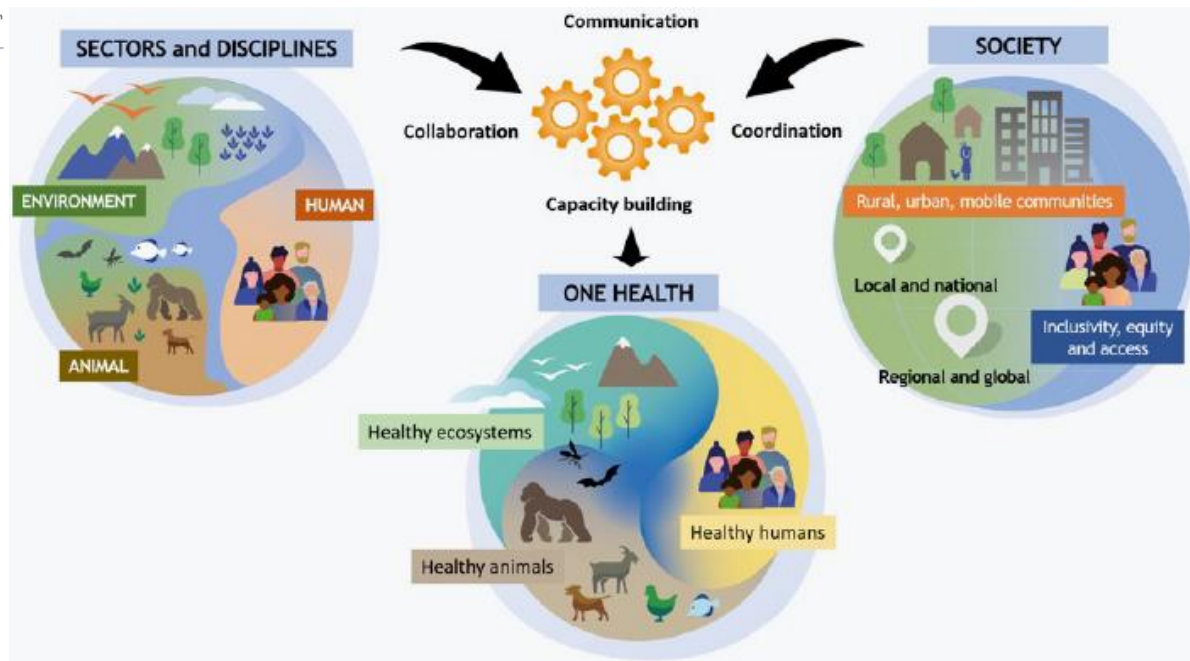


OHHLEP “sustainably balance and optimize the health of humans, animals, plants and ecosystems”



ONE HEALTH JOINT PLAN OF ACTION (2022-2026)

WORKING TOGETHER FOR
THE HEALTH OF HUMANS, ANIMALS,
PLANTS AND THE ENVIRONMENT



... and the tragedy of the commons

- **Garrett Hardin** – ecologist

The Tragedy of the Commons

paper for *Science* in 1968 (Hardin 1968)

- Thesis:

→ Maximizing of own benefits.

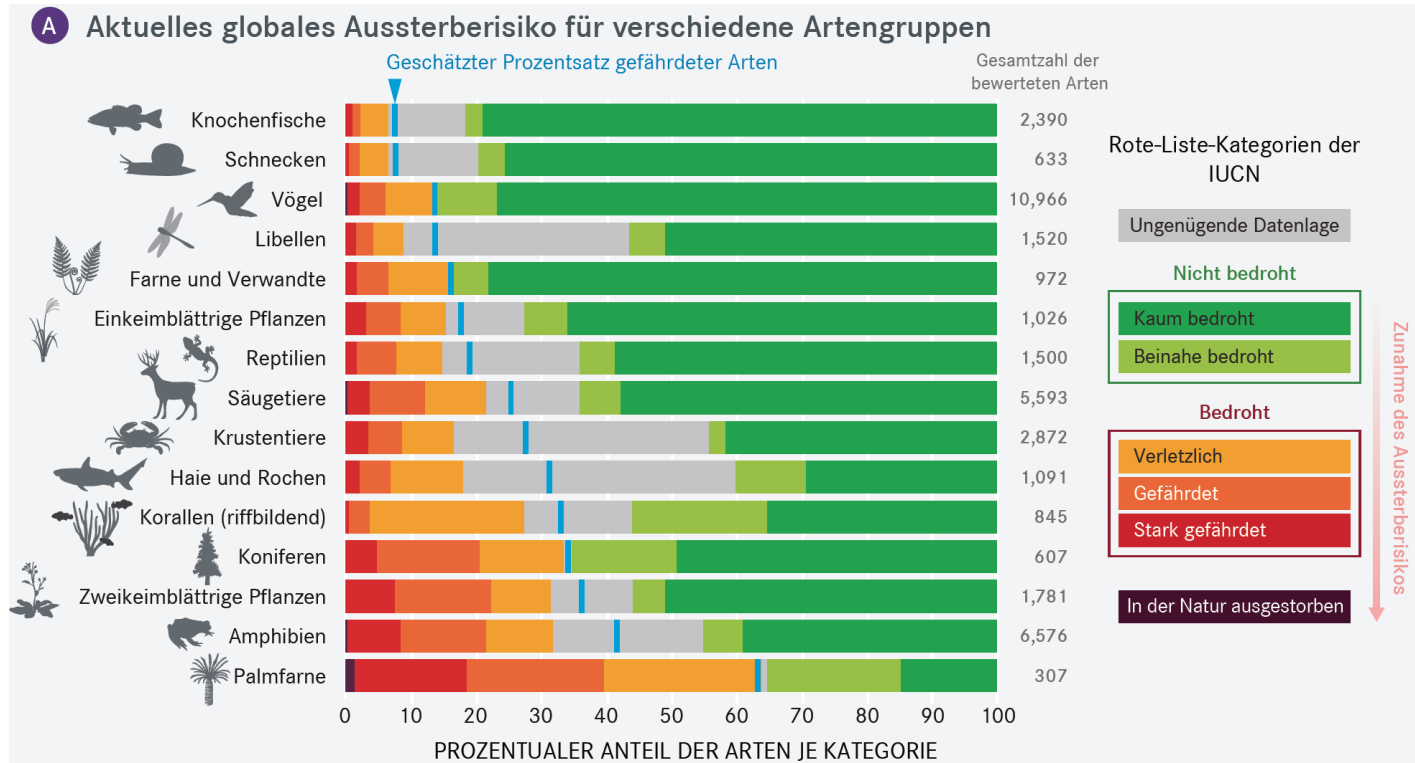
→ Thus, a common resource is inevitably overused and depleted in the absence of external control.



Courtesy of the University of California, Santa Barbara.
(<https://www.americanscientist.org/article/garrett-james-hardin-dallas-1915-santa-barbara-2003>)

Risk of biodiversity loss and overuse of natural resources

→ approx. 1 Mio of 8 Mio species threatened of extinction



Governing the commons

- Elinor Ostrom – political economist
- *Governing the Commons*
Book published (Ostrom 1990)
- Thesis: Communities can create their own governing systems to avoid this tragedy.



The Evolution of Institutions
for Collective Action



ELINOR OSTROM

2009 Nobel Laureate
in Economic Sciences

Nobel medal © © The Nobel Foundation

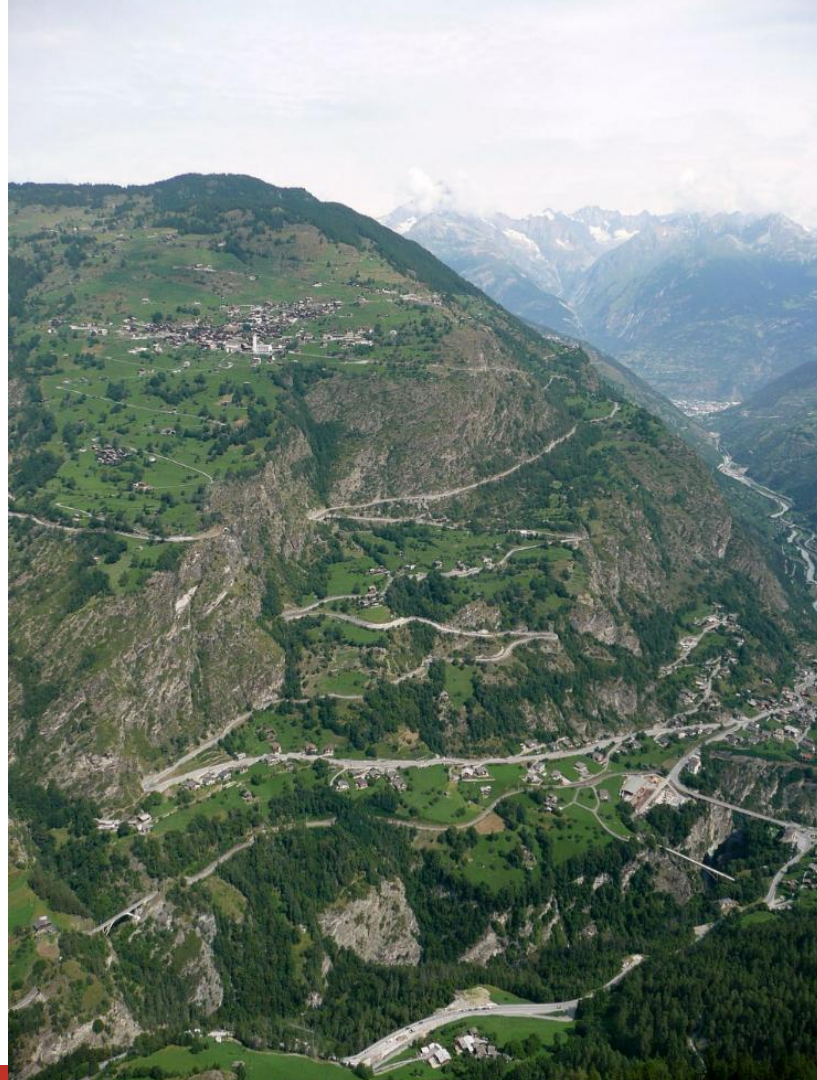


24. Dezember 2025

Törbel, Switzerland

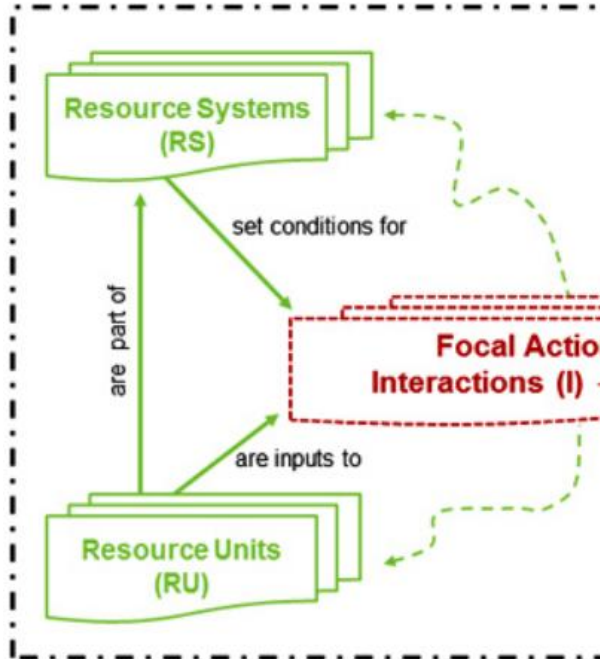
Each farmer can only bring as many cows to the alpine pasture as he can feed through the winter

Long tradition of associative organisation in Switzerland



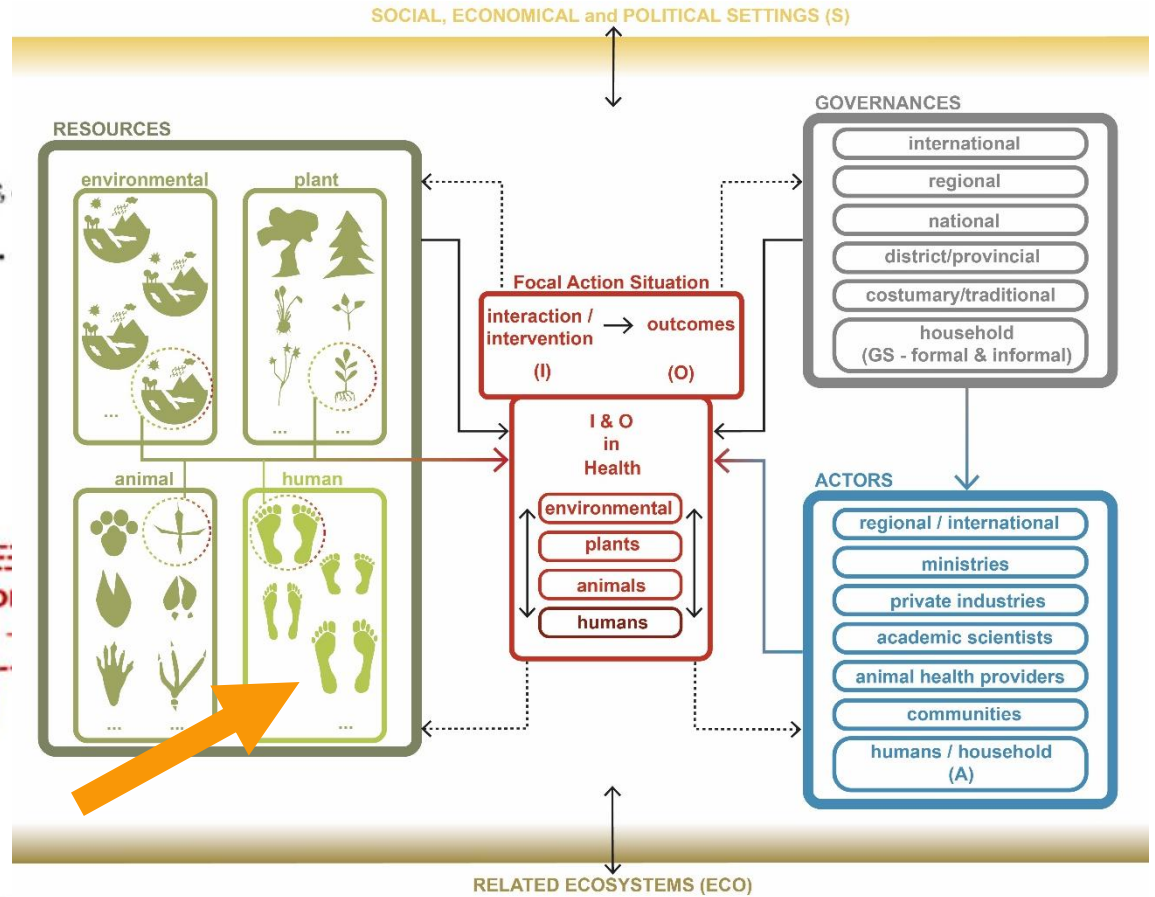
McGinnis & Ostrom (2014)

Social, Economic,



Direct link

Related Ec



↔ interaction

→ direct link - set conditions for

→ input to

→ participate in

→ define and set rules for

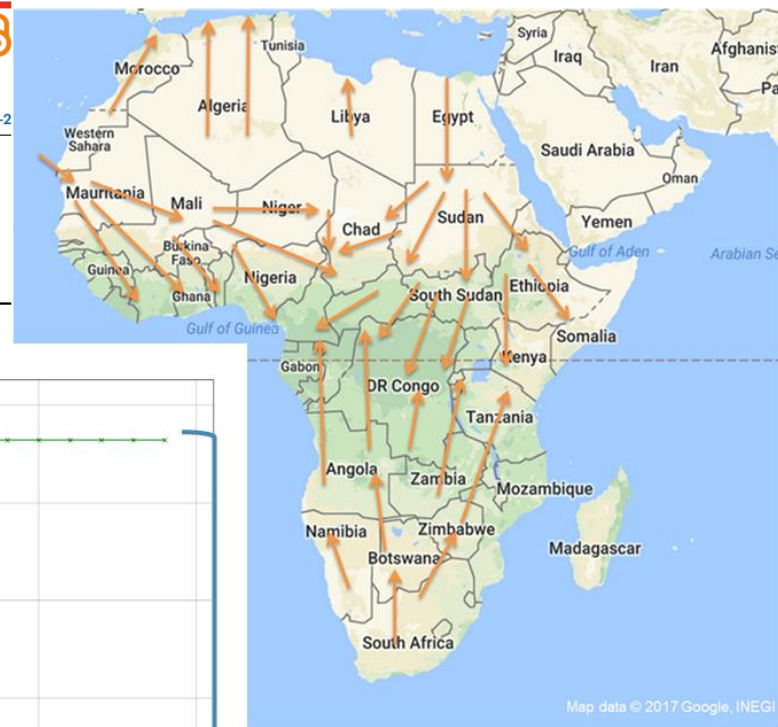
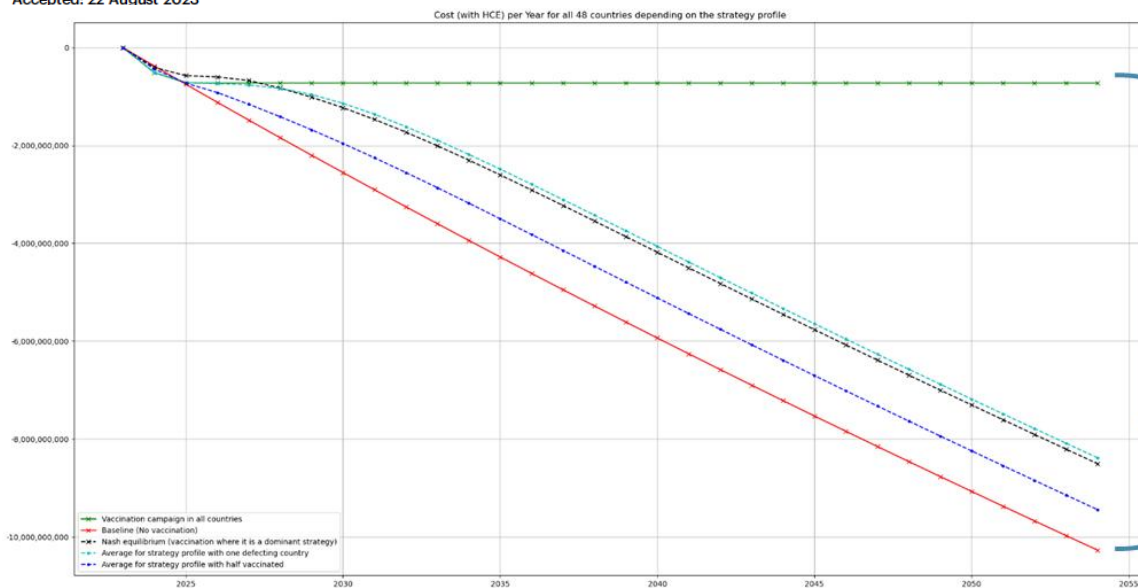
..... feedback

Benefit-cost analysis of coordinated strategies for control of rabies in Africa

Received: 20 May 2023

A. Bucher^{1,2,5}, A. Dimov^{1,2,3,5}, G. Fink^{1,2}, N. Chitnis^{1,2}, B. Bonfoh⁴ & J. Zinsstag^{1,2} ✉

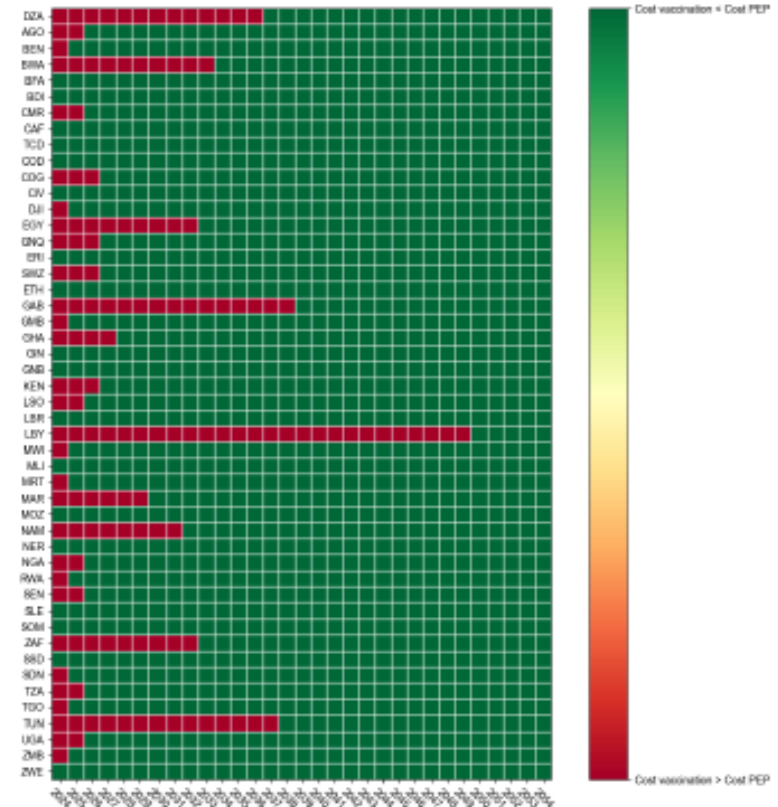
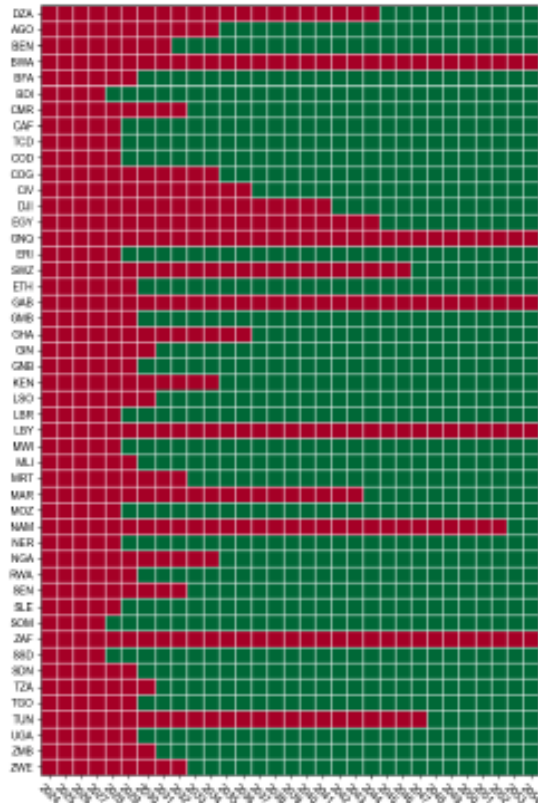
Accepted: 22 August 2023



Cumulated human capital benefit (GDP) 2024-2054 >10 Billion USD

Break-even of Post-exposure Prophylaxis and dog mass vaccination

without and with Human capital effect





Contents lists available at ScienceDirect

Environmental Pollution

journal homepage: www.elsevier.com/locate/envpol

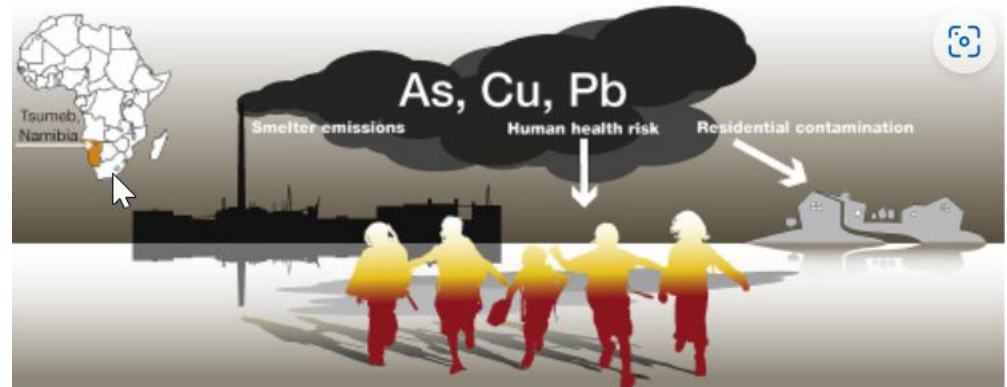


Anthropogenic contamination of residential environments from smelter As, Cu and Pb emissions: Implications for human health[☆]

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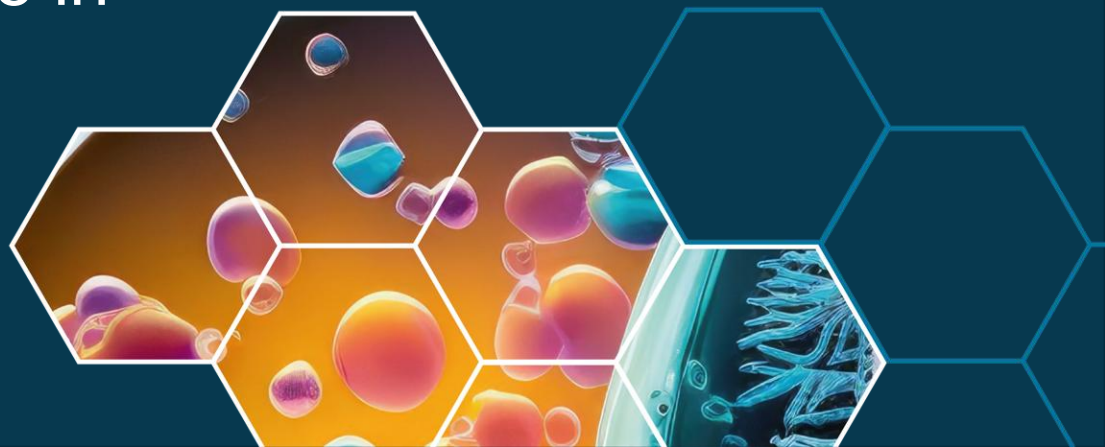


SAPEA Evidence Review Report (ERR)

<https://scientificadvice.eu/advice/one-health-governance-in-the-european-union/>

One Health Governance in the EU

Professor Jakob Zinsstag
Co-Chair, One Health working group



ONE HEALTH ATLAS

François Roger
Marie-Marie Olive
Marisa Peyre
Dirk Pfeiffer
Jakob Zinsstag, eds



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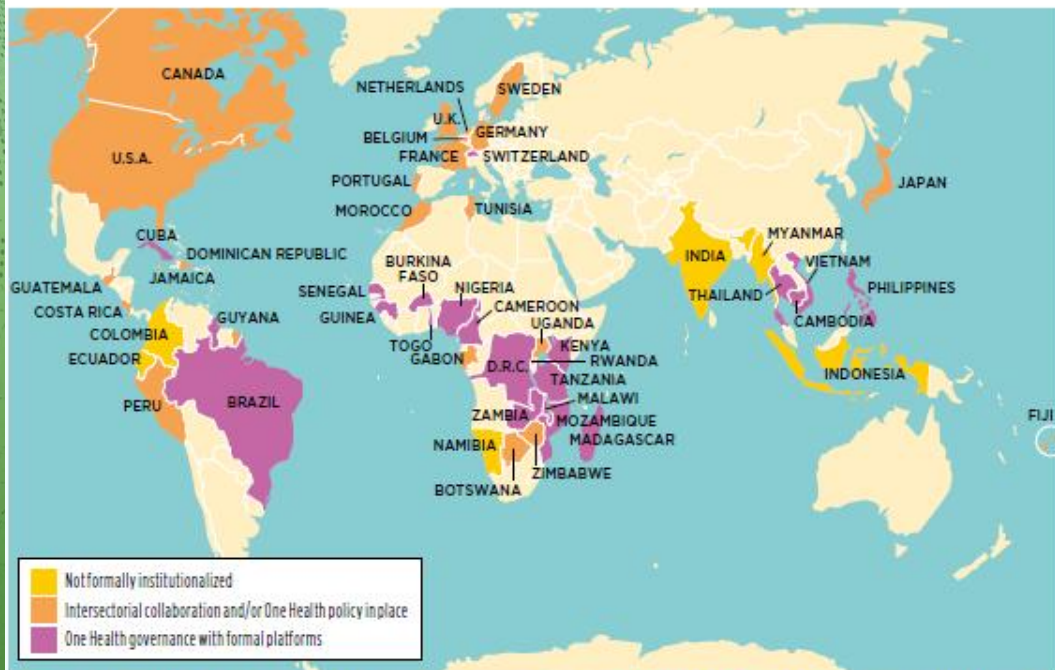


Figure 1. World mapping of One Health (OH) institutionalization status at country level: OH governance with formal platforms ; intersectoral collaboration and/or OH policies in place ; not formally institutionalized.

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