

Swiss TPH



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# Challenges in public and global environmental health

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## Challenges in public and global environmental health

- Public and global health
- Global public health
- Environmental health
- Healthy environment
- Ecosystem health
- Healthy ecosystem
- **Wellbeing and sustainability**



## Challenges for Public Health

1. **Changes:** Demographic, epidemiological and ecological patterns
2. **People** and household centered approaches equity and access - **be effective**
3. **Systems thinking**, decentralization, governance, partnership
4. **Financing** a health and social systems
5. **Surveillance** - response approaches: observatory, cohorts
6. Health and information/communication **technology**
7. **Equity** and public health ethics
8. **Human resources**, training, continuing education
9. **R&D**

# Changes and Challenges

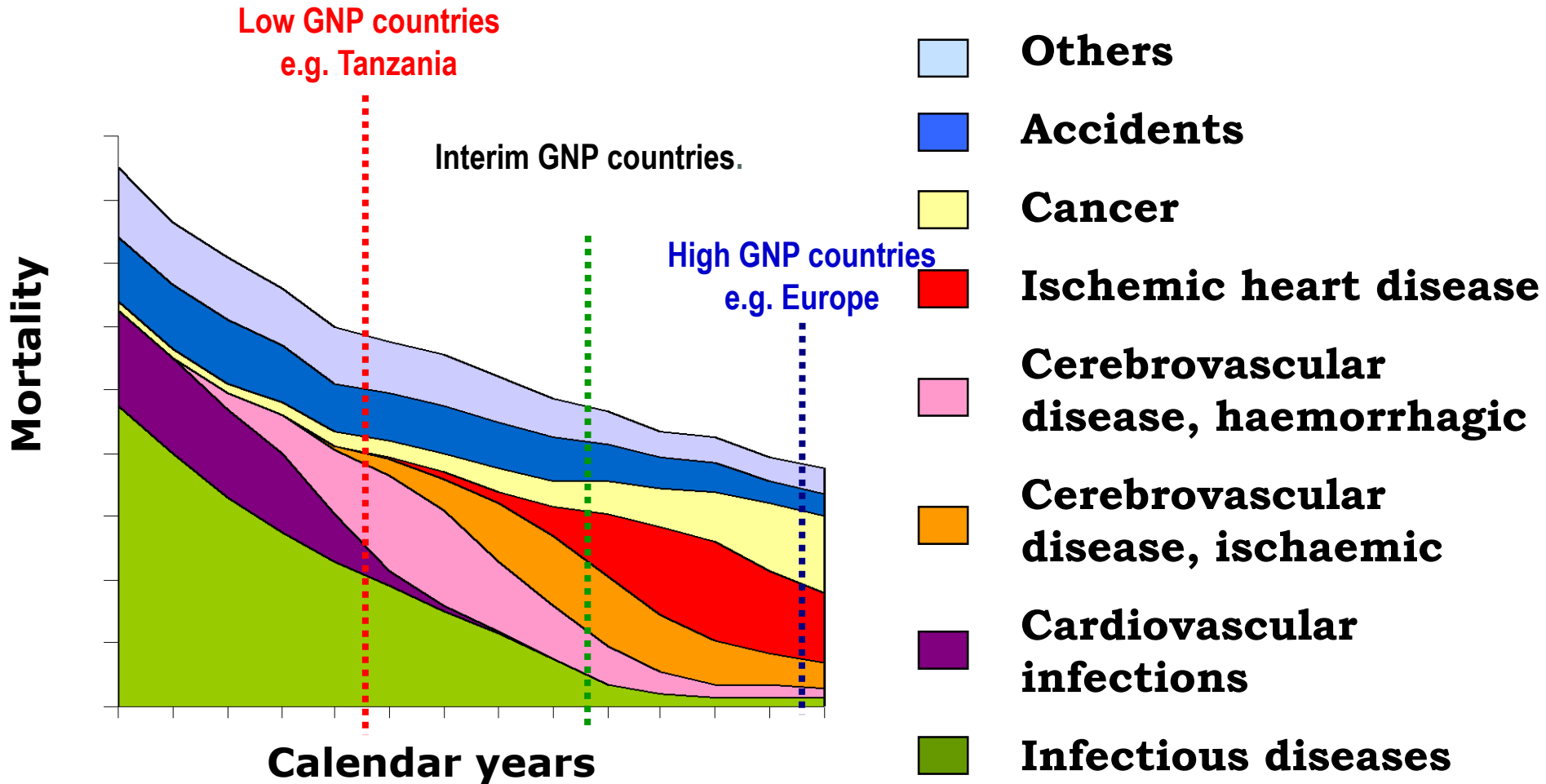




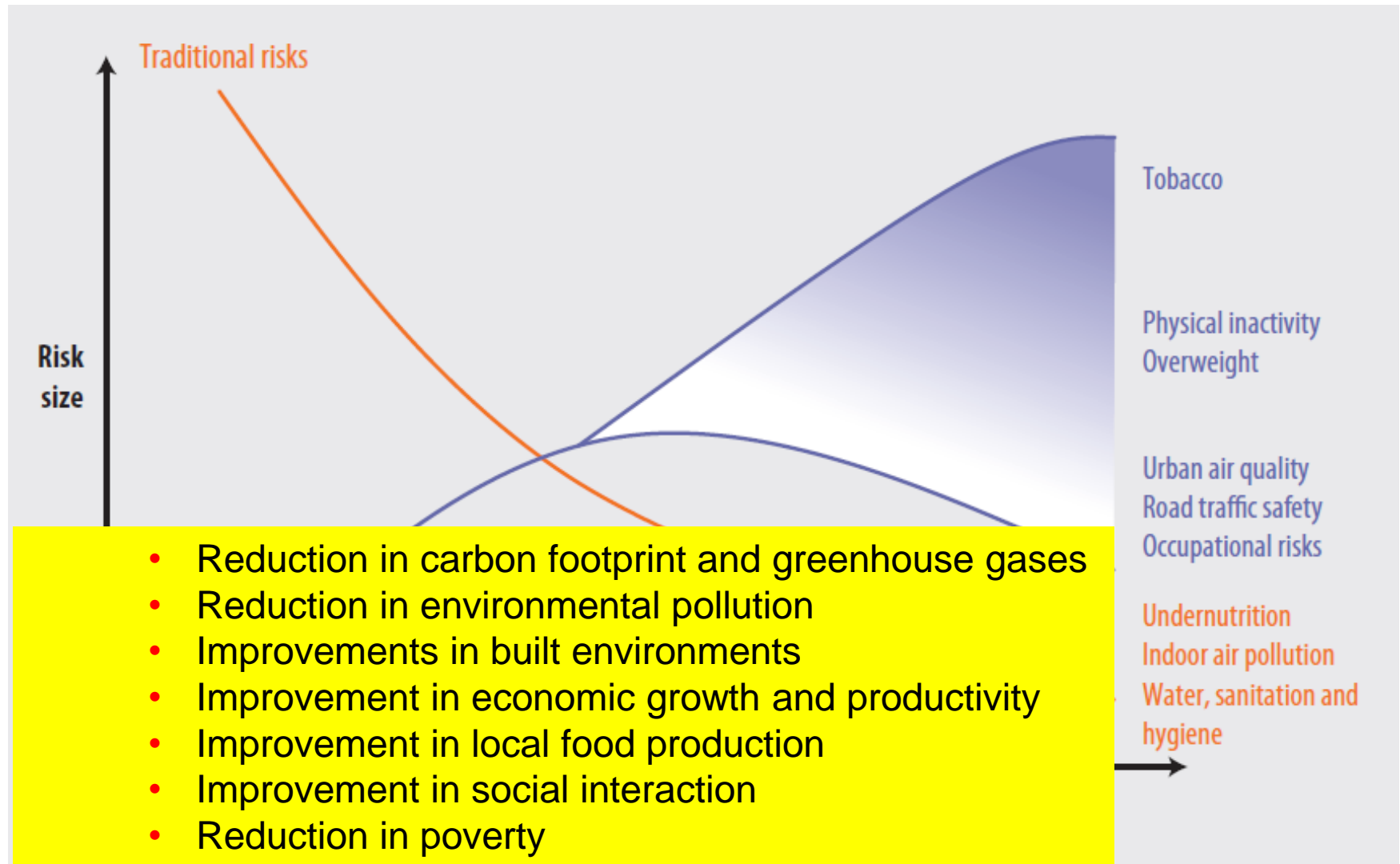
## Changes and Transitions that matter

- **Disease systems**: demographic and epidemiological transitions – **aging, mobility and overall population dynamics**
  - Non-communicable diseases, co- and multi-morbidity
  - Emerging and re-emerging diseases, **zoonoses**
- **Health and social systems** – pluralism and syncretism
- **Inequalities** – consequences of changing disease and health systems
- **Innovation in technologies** – health care, “green and clean”
- **Innovation in communication and education**
- **Massive environmental and ecosystem changes**  
**Climate changes, WASH, pollution, traffic, industries...**

# Epidemiological transition



# Reducing risk of NCDs in populations largely depends on (structural) public health policy across all sectors





**Health Outcomes:**  
 - Physical  
 - Psychological  
 - Emotional  
 - Spiritual (humans)  
 Health and Wellbeing

**Social, Cultural, Economic, Ecological and Political Determinants**

- Governance, Infrastructure, education
- One-health systems
- Burden of disease, health economics
- Livelihood, Vulnerability, Resilience, Access
- Actor centred approaches
- Adaptive management
- Sustainability concepts
- Equity effectiveness of interventions

also outcomes of health

**Systems biology of humans, domesticated animals, wildlife:**  
**Hosts at various levels of scales**

Population  
 Individual  
 Organ / tissue  
 Cell  
 Molecule / Gene

**Ecosystems and their health related components:**  
**Vectors, Pathogens**  
**Vegetation and Natural resources**  
**Food, feed and Water**  
**Physical: Erosion, climate change, ...**  
**Urban – Rural: Industrial and agricultural production and pollution...**

**Social Systems and Ecological Systems of Humans and Animals (SES)**





## **A Way Forward:**

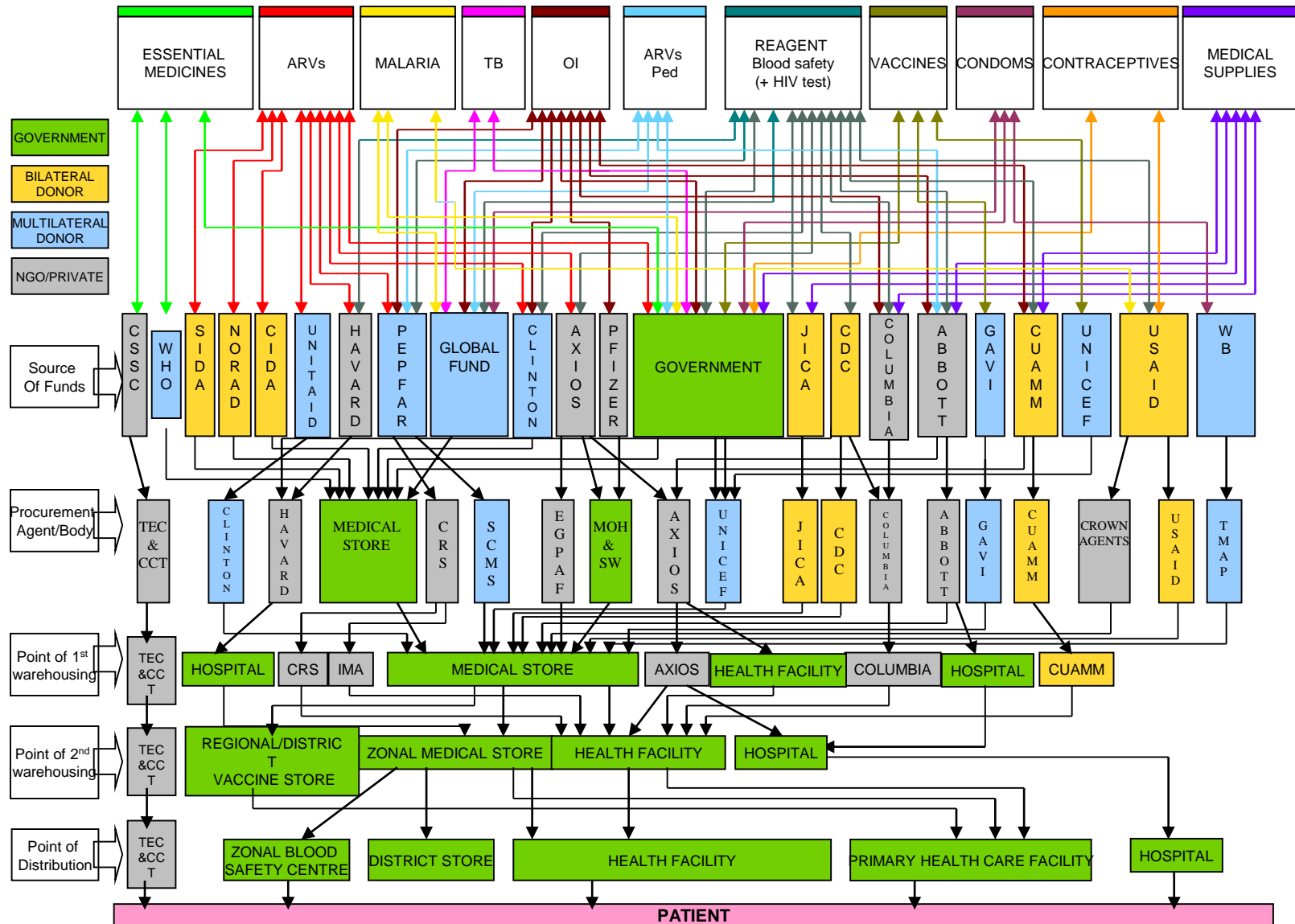
Consider inextricable linkages between ecosystems, society and health and particularly health of animals and humans

Contemporary complex health problems cannot be solved by “reductionist” approaches and require ecological, health and social systems thinking.

EcoHealth and Public Health seek to improve the health of humans and animals while preserving eco-system and health services as part of an integrated systemic research approach

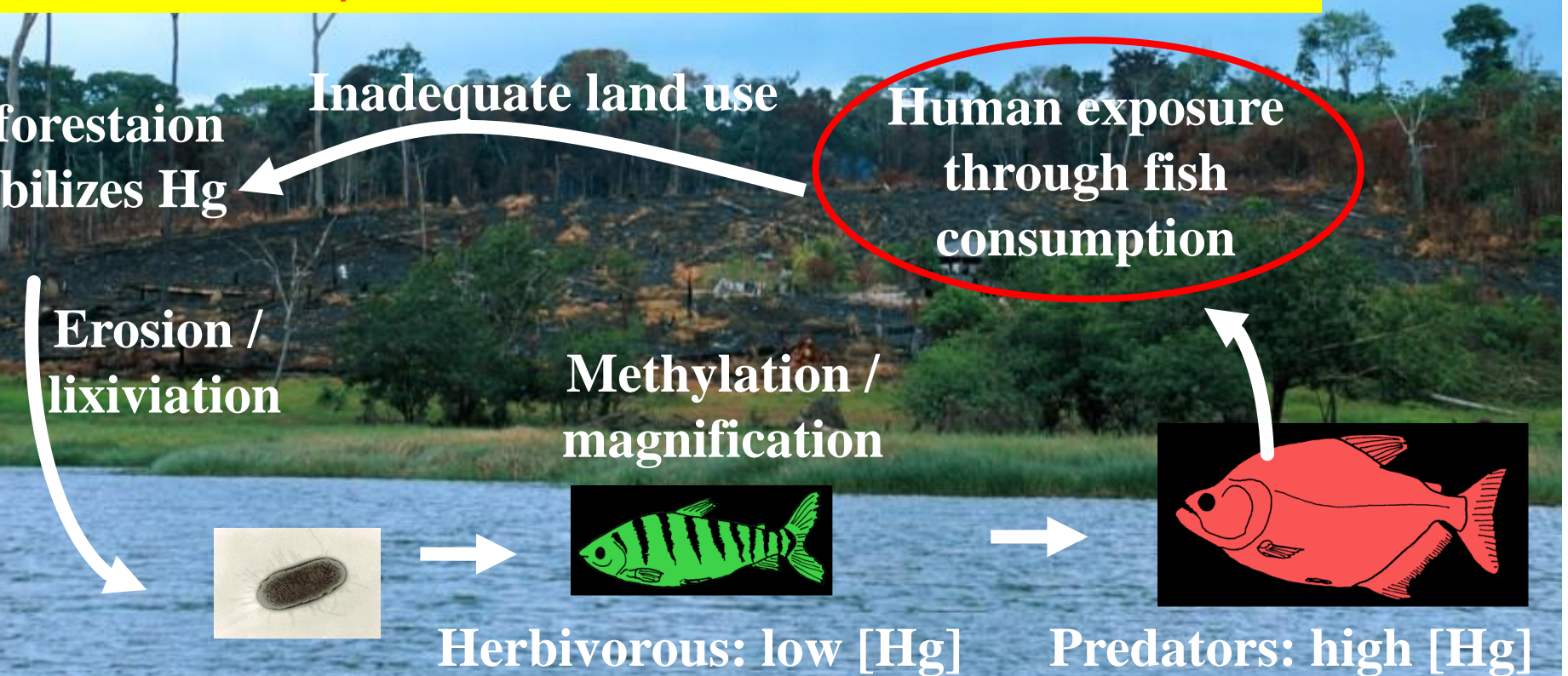
**Combine ecosystem and public health approaches  
In spirit of global health and SDGs:  
Sharing and comparing across systems and cultures**

# Health systems are complex systems Medicines & Technologies sub-system – Tanzania – Fragmentation since 2003



# The mercury issue: environmental contamination and exposure cycle

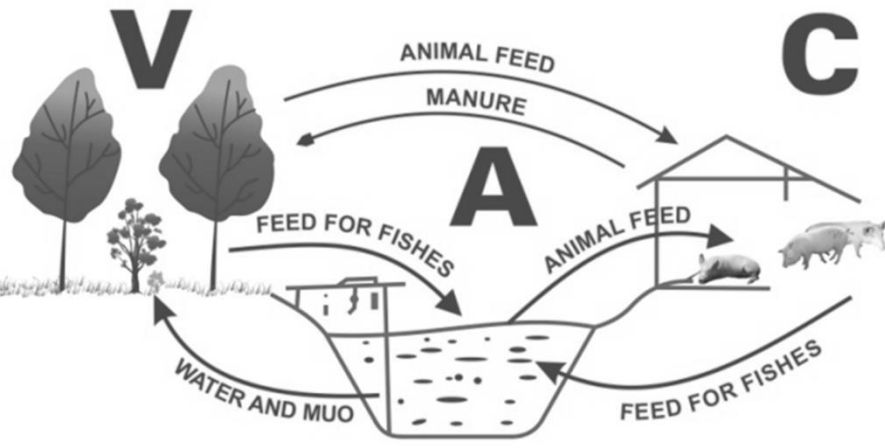
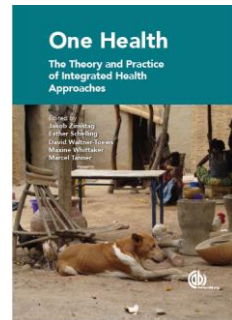
Mercury poisoning of fish and impending health risks for human in the Amazon were not primarily due to upstream gold mining but due to soil erosion following deforestation (Forget & Lebel 2001, Passos 2011)





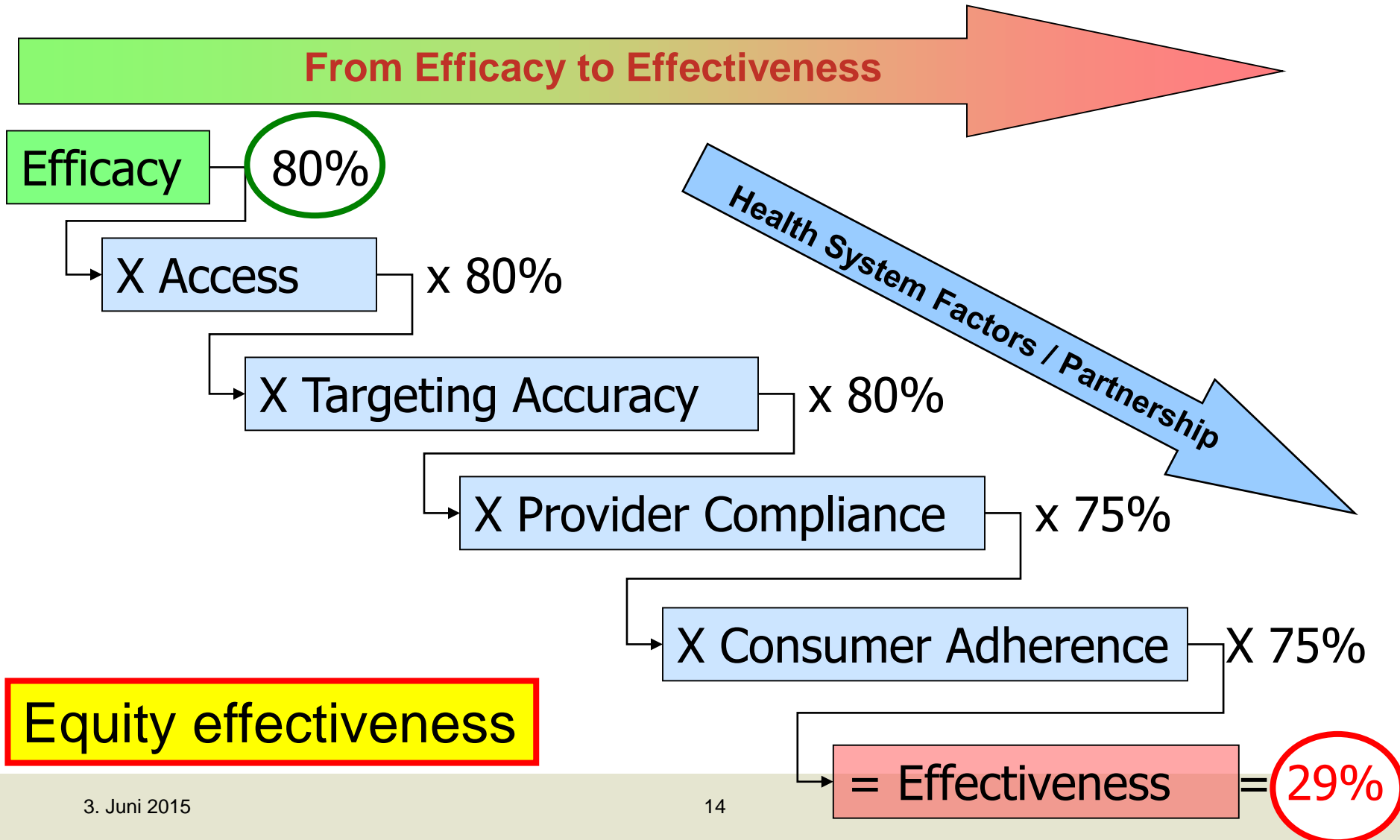
# 9 A One Health perspective for integrated human and animal sanitation and nutrient recycling

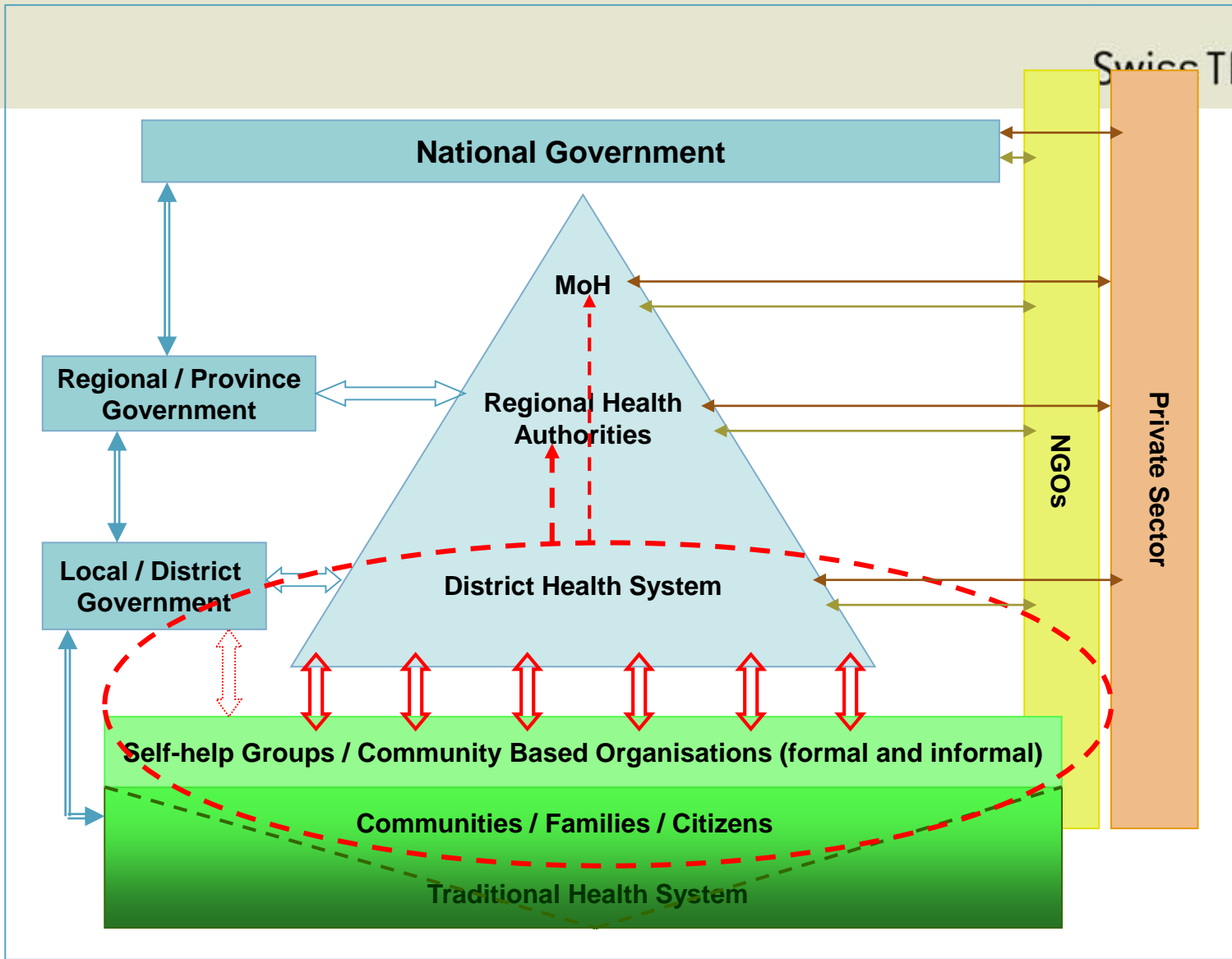
*Hung Nguyen-Viet, Phuc Pham-Duc, Vi Nguyen, Marcel Tanner, Peter Odermatt, Tu Vu-Van, Minh V. Hoang, Chris Zurbrügg, Esther Schelling and Jakob Zinsstag*



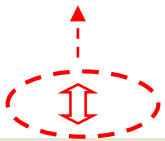


# From efficacy to community effectiveness – be effective





**Main focus of health networks – key is decentralization:  
delegate authority and power**

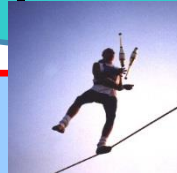
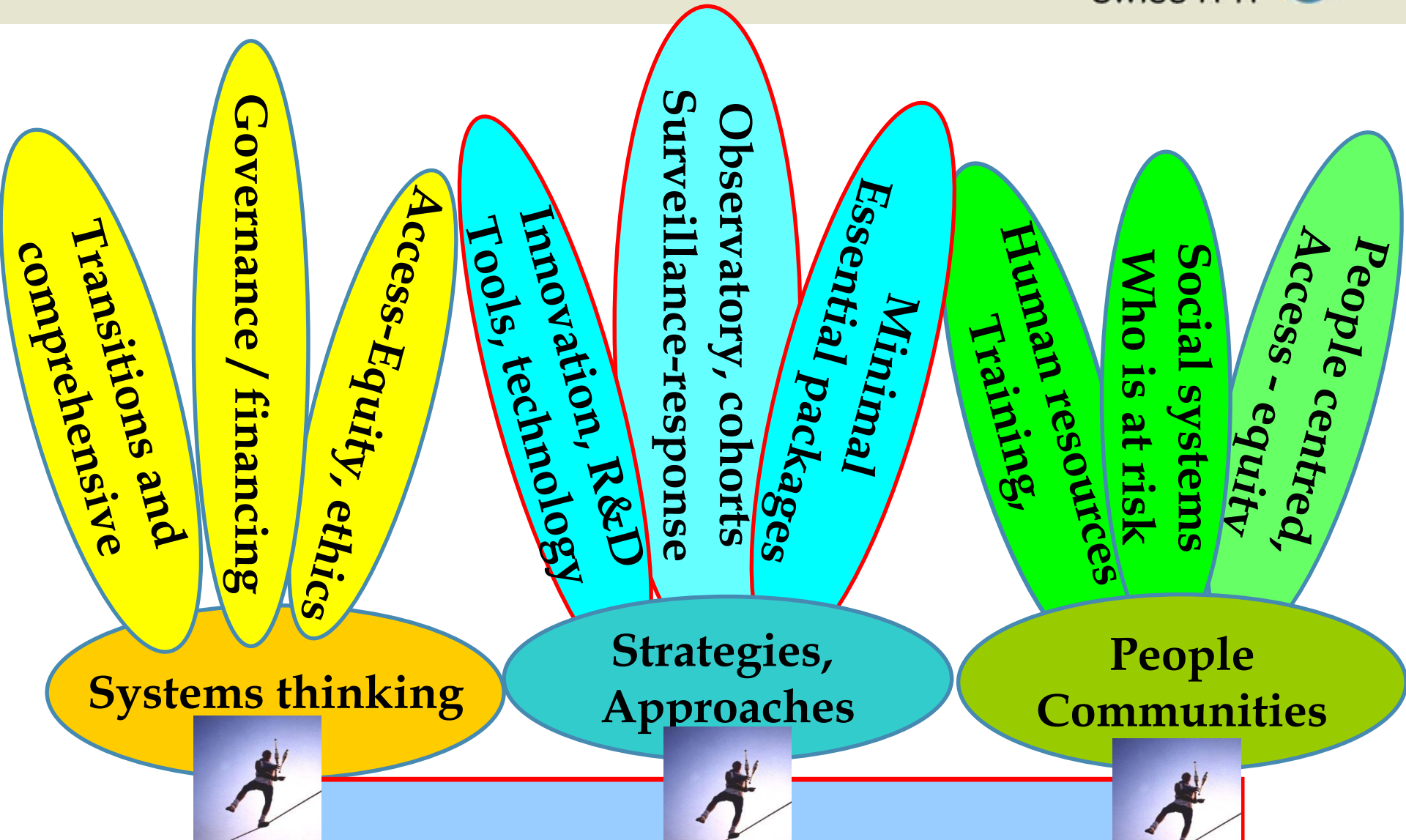




**More effective partnerships and collaboration  
through:  
Better defined roles and responsibilities  
including:  
Global Health Systems Governance**







# Health and well-being

**Long term commitment – Negotiated partnerships**



**Wonderful to see this chair established  
All the best to all involved!**

