



Berlin Workshop in
Institutional Analysis of
Social-Ecological Systems

Institutional Analysis as a Key to a Better Understanding of Interlinked Social, Ecological and Technical Systems

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What is WINS?



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WINS in Brief (1/2)

Workshop in Institutional Analysis of SES

- International discussion forum for scholars
- Subject: how institutions and governance structures regularize interaction of actors mediated by social-ecological systems
- More: social-ecological-technical systems SETS mediation via technologies and infrastructure
- Observation: scientific communities use different analytical frameworks, heuristics and languages

WINS in Brief (2/2)

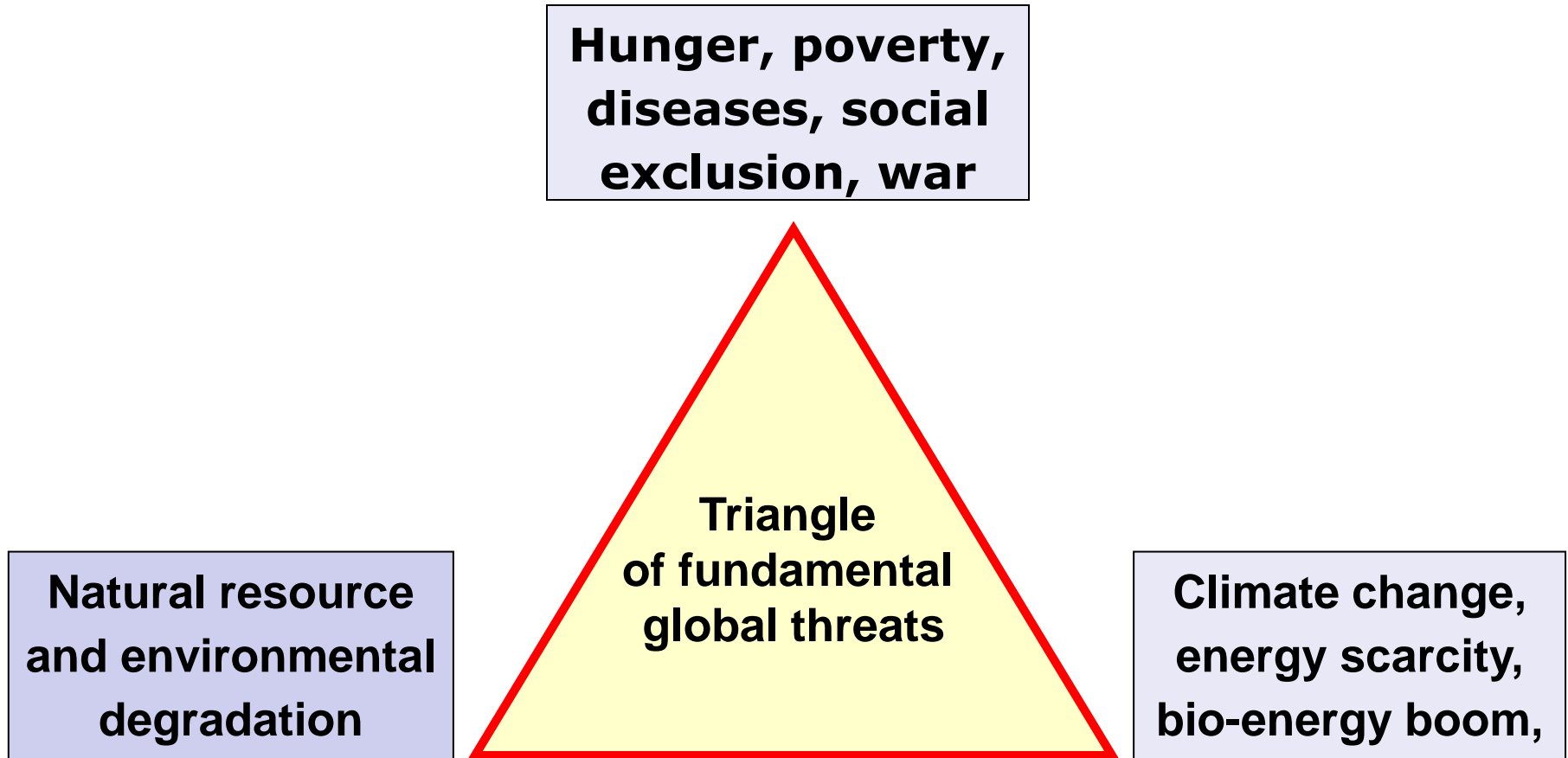
- Explanation: communities work on different *physical transactions and transformations*, activities through which humans interact in social-ecological-technical systems
 - Gains possible: communication across most of them is rather weak – barrier to mutual learning
 - Rationale behind WINS: stimulating **communication, research and education** across the boundaries of scientific communities
- ➡ **Integrative bridging strategy!**

Why WINS?



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The Global Threats Triangle



Resources, Nutrition and Energy

- **Hunger: app. 900 mill people** (> 20 % of population)
- **Malnutrition: 160 Mio children** (30 % of children)
- **Food prices, 2005 - 2008:** wheat + 80 , rice + 100%
- **Energy prices:** prices of crude oil doubled from 2005 to 2008, then dropped due to financial crisis
- **Rivalry for natural resources**, e.g. water and land:
Will provision of bio-energy gain priority over food?
- **Green Revolution is weakening:** growth of productivity down from 4 % p.a. to 1 % p.a.

Soil Degradation and Desertification

- **Increase of soil degradation;** already 1945-1990: **17 %** of the biomass producing area on the world lost; now productivity of **16 %** of land in developing countries will be considerably reduced
- **Increasing desertification: 35 mill km²** of agricultural area threatened by desertification (= **8 %** of the worlds' grazing land, **6 %** of the worlds' rain-fed crop land, **20 %** of the worlds' irrigated crop land); **> 250 mill people** affected

Demand for Land

- By 2050 **3 bill people** more will need additional area for **settlement and traffic: 120 mill ha** (= **1-200 %** of the European Unions' agricultural area).
- Only for **cars: + 60 mill ha** for traffic and parking
- Rivalry for land between agriculture & conservation: in Germany **4588 FFH sites = 3,3 mill ha = 9,3 %**.
- **120 ha** agricultural land converted **per day** (in D)
- Numerous variants of “Land Grabbing”

Water and Fishing

- **Water scarcity:** 1.1 bill people in developing countries have no clean **drinking water**; 2.6 bill in these countries live without **sanitation**.
- In **2025 1.8 bill people** will have to live in regions with absolute scarcity of water.
- **Water pollution** increases in emerging economies
- **Overfishing - reduced fish resources:** global availability of fish will decline **by 25 % by 2025 compared to 1990**

Irrigation in an environment with scarce resources and poverty



Biodiversity and Genetic Resources



- **Reduction in diversity of species and varieties:** cultivated plants **by 75 %** since 1920; **34.000 plant** and **5.200 animal** varieties and about **30 % of used animal breeds** threatened by extinction
- **Loss of genetic resources:** e.g. in the Fifties about 30.000 rice varieties existed in India, today **50 % of world nutrition is achieved by 5 grain species**, **95 % of world nutrition by 30 plant species**



Climate Change Context

- **Climate change impact**, mitigation and adaptation requirements – no need to explain!
- **CO₂ sinks reduced worldwide**, e.g., deforestation of natural tropical and non-tropical forests: tropical forest **-14,2 %**, non-tropical forests **+ 1,7 %**, taken together **-12,5 %** (1990-2000); this continues!
- Germany had **9000 km² of natural mires**; only **600 km²** are preserved under natural conditions (**< 7%**).

Hyderabad, climate change impact (heat waves, flooding, ...)



What to do?



Knowledge Generation!

Contributions from various disciplines exist!

Main focus is: What human actors “should” do!

- EU states should agree on a soil conservation directive
- German households should save fossil energy
- African countries should protect indigenous land rights
- Chinese government should stop decline of water tables
- Pellet producers should not stimulate deforestation
- The US should implement GHG mitigation policies
- Hyderabad should stop pollution of urban water bodies

Research behind such results is necessary and valuable.

“Sollen impliziert Können”

1. Such **prescriptive recommendations** implicitly assume that actors actually can do what they are supposed to do (by academic advisors)!
 2. Often inappropriate, sometimes even harmful!
 3. “Sollen impliziert Können”- a well-known principle in Hans Albert's philosophy of science
- ➡ Scholars need to know much more about **human behaviour** in social-ecological-technical systems before “becoming prescriptive”!

Institutions and Behaviour

Three main areas of **study of human behaviour**:

- Biological endowment: neurophysiology
- Individual schemata: decision making heuristics
- Collective action: social construction

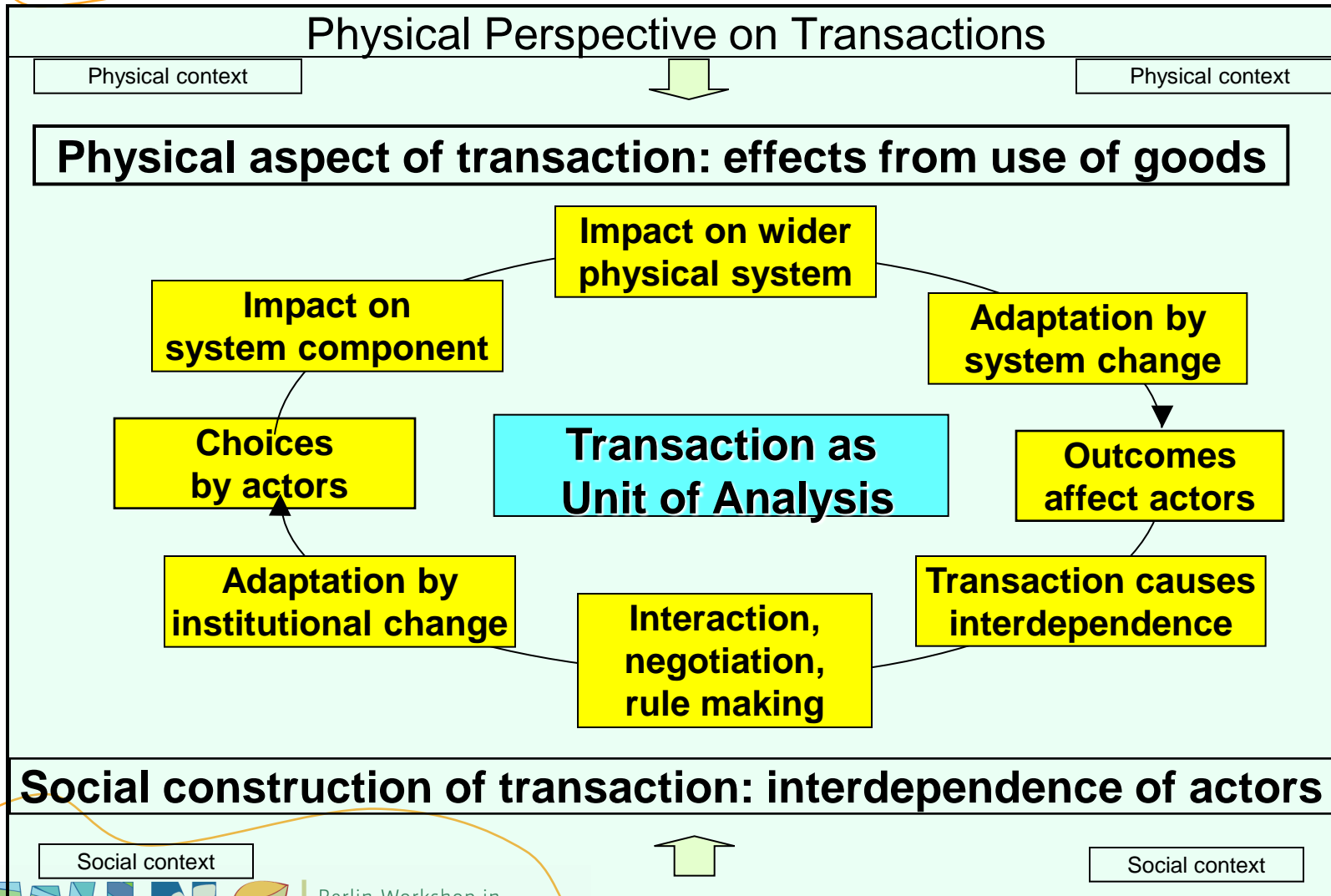
Institutions (sets of rules and conventions) **and governance structures** (modes of organisation) may emerge to overcome, for example:

- Social dilemmas and free riding
- Opportunism and rent-seeking behaviour
- Lack of trust and commitment

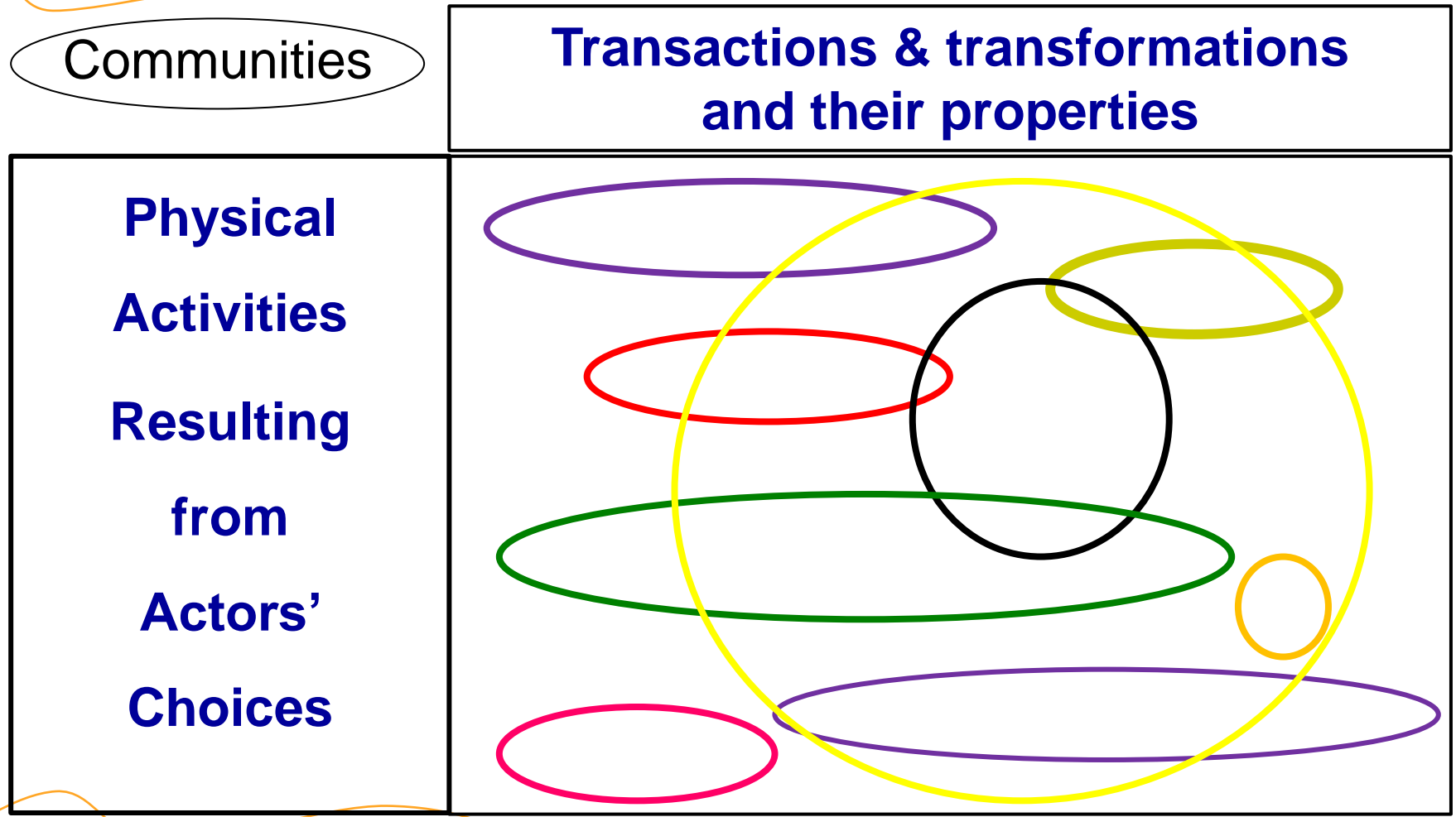
The Logic of Emerging Institutions

- **Transactions** cause interdependence between **actors**
- **Interdependence** between actors requires **rule-making**
- Institutional **design** must fit **characteristics** of interdependence produced by **attributes** of transaction
- **Physical transaction – interdependence - institution**
- **Nature-related** transactions are **different: mediated by ecological systems** and affected by **transformations**
- ➔ **Results in: Transaction – Transformation – Interdependence – Institutions – Nexus!**

Transaction-Interdependence Cycle



“Science Map” of Scientific Communities



How can WINS help?



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The Role of WINS

- **Bridging** between communities as a focus
- WINS = institutionalized space for bridging
- Organising scholars' collective action
- Facilitating scholars' self-organisation
- **Becoming "bilingual"**- understanding the language of at least 2 scientific communities

Core Elements of the WINS Agenda

- 1. Integrative Discourses** for institutionalizing communication between members of several research communities
- 2. Interdisciplinary Research** for conducting studies guided by one or more, single or linked analytical frameworks
- 3. Advanced Studies** addressing both junior and senior researchers

Two Main Groups of Actors

- ⇒ **Affiliated faculty*** from HU Berlin and other universities and research institutes
 - ⇒ **Young academics** including Master and PhD students and Post-docs
- These groups may want to practice mutual learning in an organised process.

* Guidelines can be found on the WINS website www.wins.hu-berlin.de

Other Components in WINS

- ▶ Establishing Projects in WINS
- ▶ WINS Seminar – a weekly colloquium
- ▶ Forming Working Groups in WINS
- ▶ Visiting Scholar Program – starting!
- ▶ Young Researcher Groups – welcome!
- ▶ Courses and Trainings – in formation
- ▶ WINS PhDs – part of THESys PhD program

WINS Organisation

- ▶ WINS coordinators
- ▶ WINS staff
- ▶ Deliberation Group
- ▶ Interdisciplinary Group
- ▶ Affiliated Faculty
- ▶ Young Researchers Club

Welcome to WINS !!!

- Our understanding of WINS is not to form a strongly formalized group working in the bondage of strict rules and inflexible procedures
- Our visioning orients towards a permanent lively workshop developing a culture of openness
- Welcoming everybody who may contribute to creative discourse, research and teaching

Expression of Thanks !

I want to express my gratitude to all those who supported the development institutional analysis in social-ecological-technical systems, joined our network, supported the establishment of WINS and advised us how to design this space for interaction of scholars!



THANK YOU for your attention!

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