

# **Globalization and the Water-Energy-Food Nexus** **– the Potential of the Global Production Networks** **Approach for Analysis of Society-Nature Interrelations**

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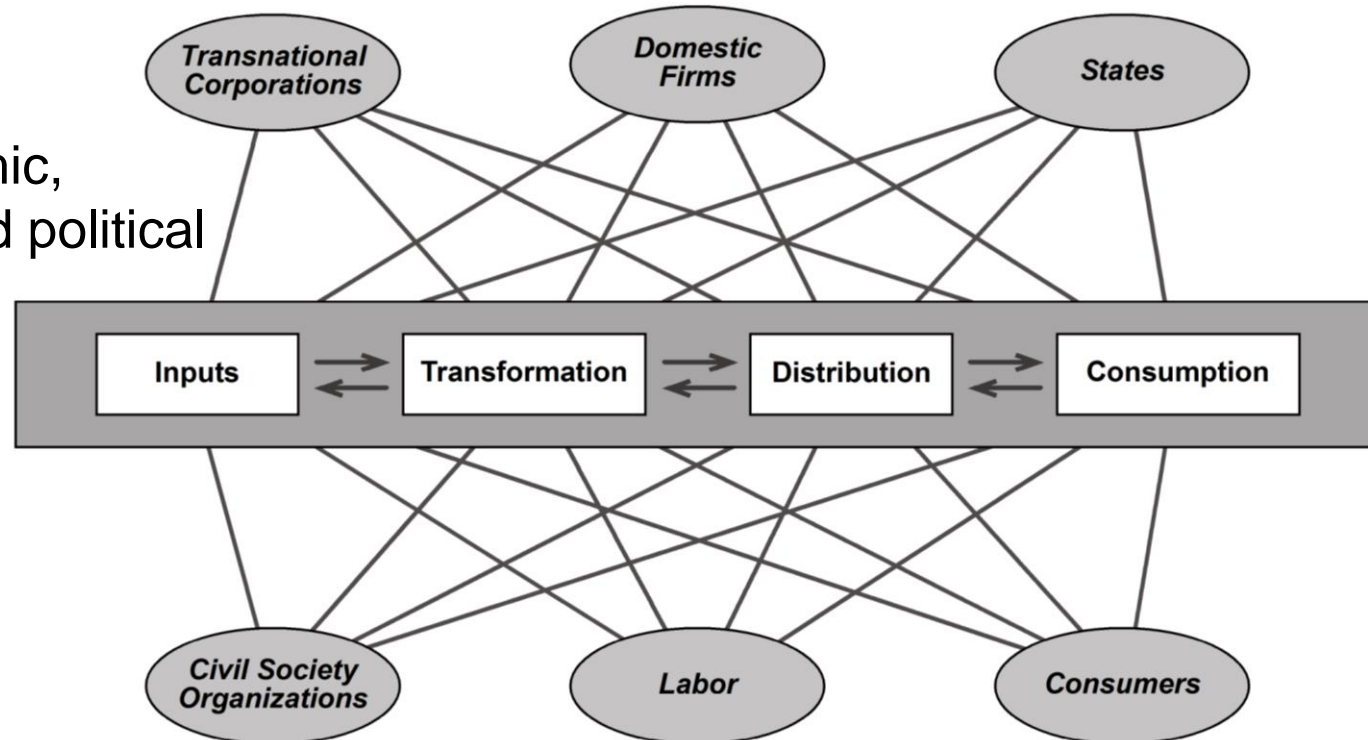
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- *Commodity Chain* (Hopkins/Wallerstein 1977)
- *Value Chain* oder *Value-adding Chain* (Porter 1985, 1990)
- *Commodity Systems* (Friedland et al. 1981; Friedland 2005)
- *Systems of Provision* (Fine 1993; Fine/Leopold 1993)
- *Filière* (Lenz 1997; Raikes et al. 2000)
- *Commodity Circuits* (Cook/Crang 1996; Cook et al. 2000)
- *Global Commodity Chains* (Gereffi/Korzeniewicz 1994; Gereffi 1999)
- *Global Value Chains* (Gereffi et al. 2005; Gibbon/Ponte 2005)
- *Global Produktion Networks* (Henderson et al. 2002; Coe et al. 2008)
- ...

COE et al. (2008: 274) define a production network as “the nexus of **interconnected functions, operations and transactions** through which a specific product or service is produced, distributed and consumed. A global production network is one whose interconnected **nodes and links extend spatially across national boundaries** and, in so doing, integrates parts of disparate national and subnational territories.”

GPNs are economic, social, cultural and political phenomena.



# Global Production Network

## Analytical Categories

**Power**  
 Corporative  
 Collective  
 Institutional

**Value**  
 Creations  
 Enhancement  
 Capture

**Embeddedness**  
 Territorial  
 Network  
 Societal

**Analysis**

## Analytical Dimensions

**Firms**  
 Ownership  
 „Architecture“

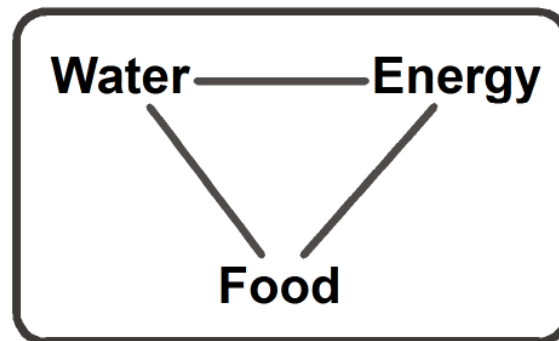
**Networks**  
 „Architecture“  
 Governance  
 Co-ordination

**Institutions**  
 Governmental  
 para-governmental  
 non-governmental

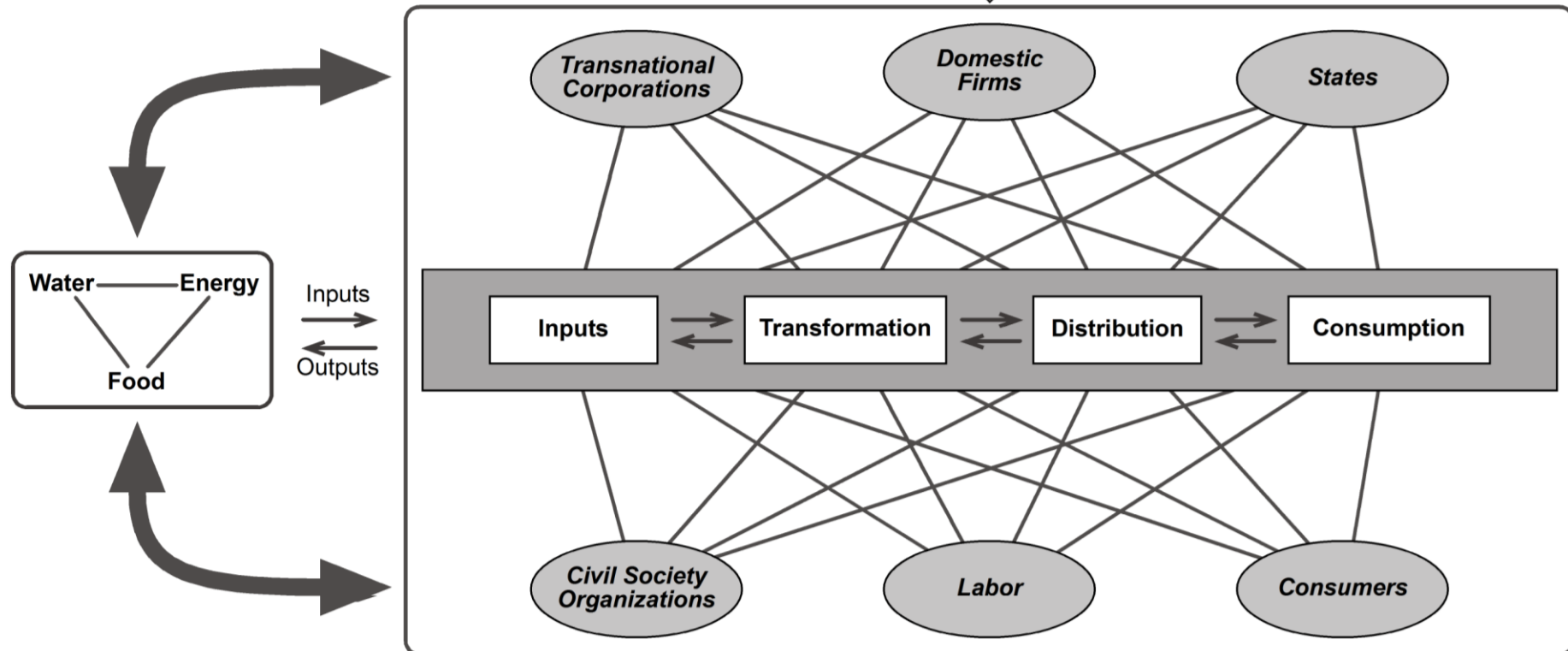
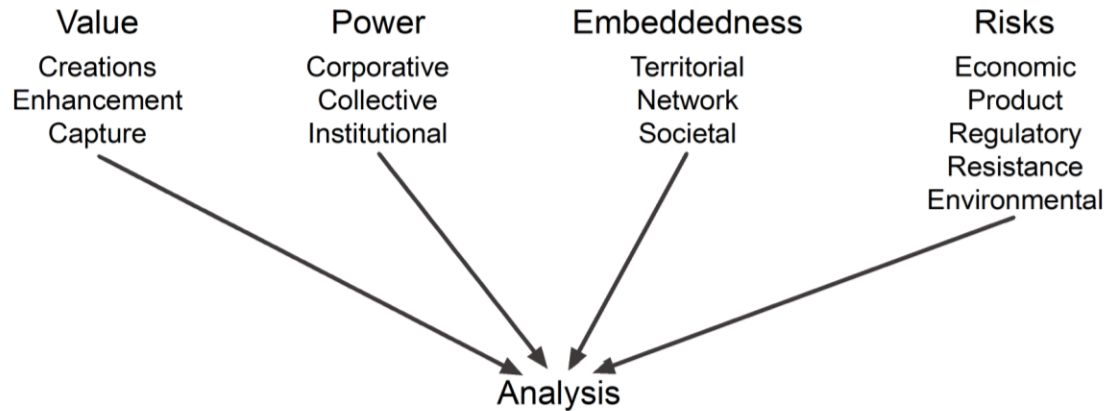
**Sectors**  
 Technologies  
 Products  
 Markets

- oil industry (Bridge 2008)
- e-waste recycling (Lepawski and Billah 2011)
- ecological upgrading in the car production (Reps and Braun 2012)
- endangered plant species (Pauls and Franz 2013)
- trade with organic food (Bernzen and Braun 2014)
- ...

- integrated analysis and policy-oriented reflection of the “three-way mutual interactions among water, energy and food” (Scott et al. 2015: 18).
- addresses the complexity of the crisis dynamics of socio-ecological relations through the operationalization of links between the most vital resources in terms of human livelihoods and ecosystems functions.
- provides a much more nuanced understanding of society-nature interactions beyond the limited category of resources while still reducing the complexity and multiplicity of society-nature relations to an extend suitable for outcome oriented analysis



- ⇒ Globalization as complex social, economic, political phenomenon
  - Limited analytical and conceptual tools for the analysis of the driving forces of Globalization within the WEF Nexus debate
  - Tendency to reproduce territorial, bounded spatial categories – like the nation-state – within the WEF-Nexus debate
- ⇒ GPN provides an analytical and conceptual tool that potentially enables the understanding of transnational networks of flows of products, value and the underlying governance structures
  - Interlinking of system & network approaches requires scrutiny



(own figure based on Henderson et al. 2002: 448; Hess 2004; Dicken 2011: 60; Yeung/Coe 2015)



- Studies that use GPN to analyze the interrelations between economic networks & environmental concerns consider the role of resources only in a superficial way.
- There are only limited analytical & conceptual tools for the analysis of the driving forces of globalization within WEF-Nexus literature.



- A combination of the GPN approach with the WEF nexus approach thus has the potential to be a basis to overcome shortcomings in both strands of research.

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