

Nexus or security?

Water, energy and food

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What is the nexus?

- ⑩ Water, energy and food (WEF) – essential for quality of life
- ⑩ WEF mutually interdependent, for example:
 - Irrigation – key for food security
 - Hydropower – for energy security
 - Sustainable farms and cities – water security
- ⑩ Resource nexus – crucial for societal well-being and prosperity
- ⑩ Social & political processes + institutions & policies – regulate & manage resources
- ⑩ Security – seen in human, environmental terms **and** national security terms

“Water security” **Working definitions**

The capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a **climate of peace and political stability**.

—UN Water 2013

Availability of adequate quantities and qualities of water for societal needs and resilient ecosystems, in the context of current and future **global change**.

—Scott, Meza, Varady, et al., 2013



The Nexus in 2015

- ⑩ Shift in global thinking towards sustainable futures
 - Human well-being
 - Resilient ecosystems
 - Co-exist within planetary boundaries
- ⑩ This is imperative, a matter of survival
- ⑩ Sustainable Development Goals (SDGs) in 2015
now supplant target-oriented Millennium
Development Goals (MDGs)



WEF Nexus Background

- ⑩ 2006 Hyderabad workshop – IWMI, ICRISAT, Wageningen Univ., others
 - Hellegers et al (2008)
 - Siegfried et al (2008)
- ⑩ WEF Nexus in climate adaptation (Lopez-Gunn 2009)
- ⑩ Resource dependencies (Lazarus 2010)
- ⑩ Climate-demographic coupled drivers (Scott 2011)
- ⑩ WEF Nexus became further institutionalized
 - Bonn2011 (Hoff 2011)
 - Stockholm (multiple years, 2014)
- ⑩ Dresden, UNU-FLORES, 2013, 2015 and beyond

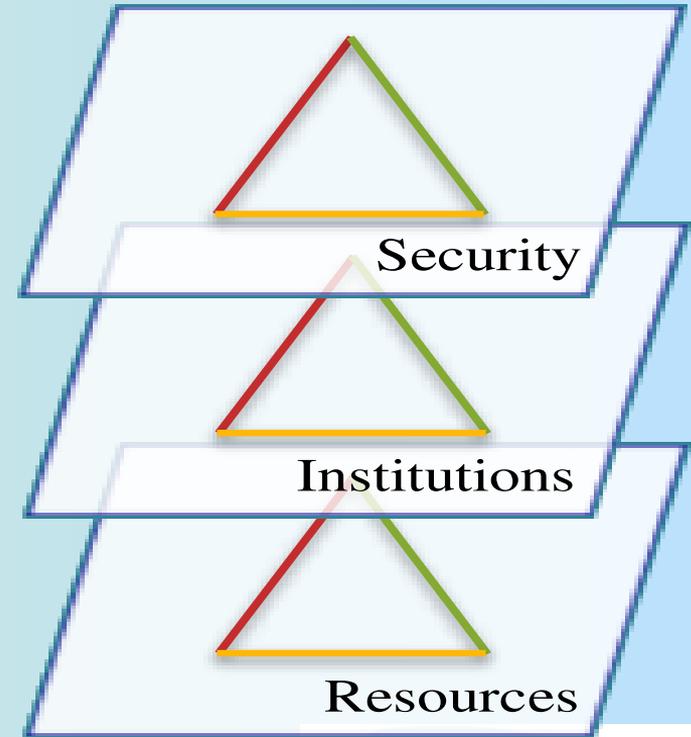
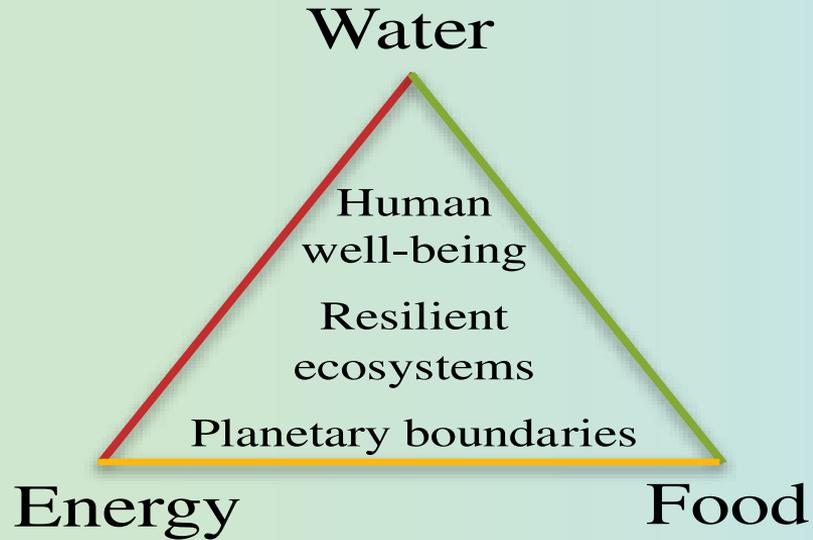


Resources, society, institutions

- ⑩ Nexus links resource-use practices, previously considered in isolation
- ⑩ Resource efficiency gains
 - Beware, “savings” lead to increased use
 - Jevons’ Paradox (*The Coal Question*, 1865)
 - Rebound (take-back) effect
 - Lankford’s para-commons (2013)
- ⑩ Policy articulation is key to operationalizing the nexus
 - Security of resource access
 - Equity – socioeconomic and intergenerational



Water, energy, food: multi-scale interactions





AQUASEC

Center for Excellence in Water Security

AQUASEC

A virtual umbrella center that groups projects, people and institutions to study water security in the arid Americas

IAI Innovative Science and Influential Policy Dialogues for Water Security in the arid Americas ("Aguascentes")

- ✧ **Univ. Arizona y CONACYT-México**
- ✧ **USGS/DOI y CONAGUA-México**
- ✧ **NOAA CSI**
- ✧ **NOAA IRAP**

Lloyd's Register Foundation International Water Security Network (IWSN)

- ✧ **European Commission/U.S. (SWAN)**
- ✧ **CNRS-France (UMI); BLUEGRASS**
- ✧ **NSF (RESIN)**

IAI = Consortium of National Science Agencies of 19 countries in the Americas



Nexus or security?

- ⑩ Both concepts seek to integrate multiple resources, address governance concerns
- ⑩ Nexus is process-oriented – dynamic interactions
 - Nexus is conceived as a means towards security
- ⑩ Security more static – an aspirational goal
 - Securitization discourse has been critiqued
- ⑩ Neither concept explicitly addresses equity or sustainability, though with 2015 SDGs, this will change

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