

The use of value chain analysis to assess natural resource use

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Outline

- Value Chain
- The Nexus Approach
- Examples
- Conclusions

Value Chain

“The value chain includes the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use.”

Kaplinsky and Morris, 2001

**Core Value Chain
(micro-level)**

**Value Chain Supporters
and Facilitators
(meso-level)**

**Enabling
Environment
(macro-level)**

	Core Value Chain (micro-level)	Value Chain Supporters and Facilitators (meso-level)	Enabling Environment (macro-level)
Consumption	Homes, Furniture, Heat	Government NGOs Business associations	Quality standards and Grades
Marketing	Retailers, Exporters		Macro-economic conditions and policies
Production	Logs, Pulp, Panels, Biomass		Contract security and law enforcement
Design	Seeds, Soil, Fertilizers, Silviculture		

Value Chain

Nexus

Examples

Conclusion

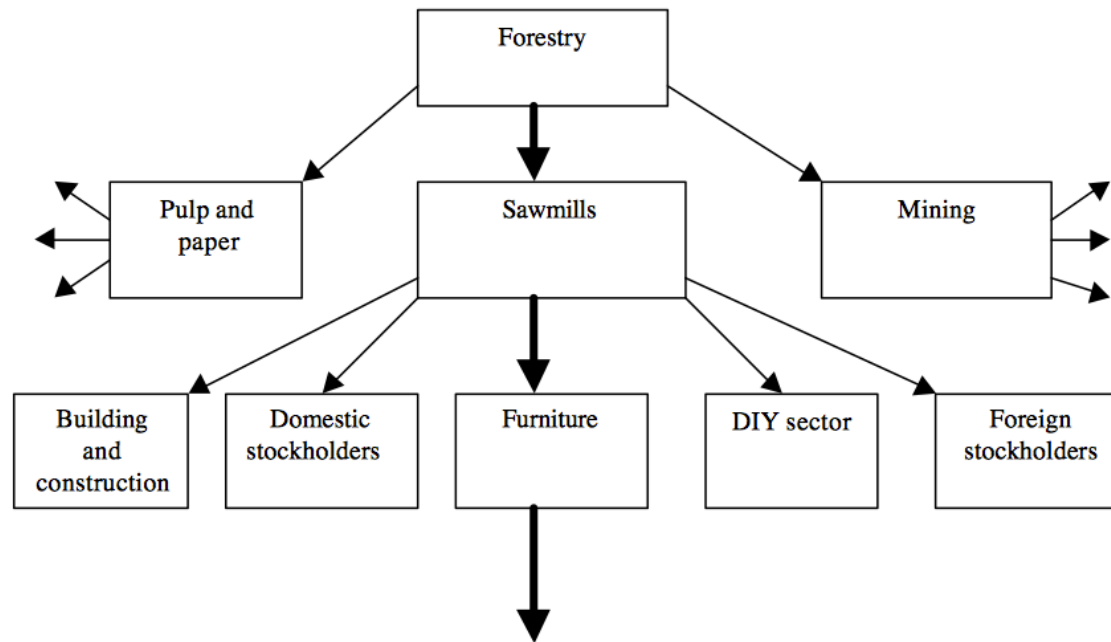
Adding Value

- Improve quality
- Increase system efficiency
- Develop differential product

Adding Value

- Improve quality
- Increase system efficiency
- Develop differential product
- **Political-economic**
- **Socio-economic**
- **Technological**

One or many value chains?



Source: Kaplinsky and Morris, 2001

The Nexus Approach

“Water security is the gossamer that links together the web of food, energy, climate, economic growth and human security challenges that the world faces.”

WEF, 2011

IWRM and Nexus Development

1930's

- Tennessee Valley Authority

1940's

- Integrated Water Management (IWM)

1970's

- Command and control centralized approach

1980's

- Locally collaborative “watershed” management

1990's

- Formalized IWRM

2000's

- Shift to Adaptive Management (AM)

2010's

- Proposed “Nexus” approach

How may Nexus be Different from IWRM?

1. Treats different sectors as equally important.
2. Policy coherence and multilevel institutional responses.
3. Multiple scales (micro-meso-macro).
4. Participation via public private partnerships.
5. Economically rational decision-making.
6. Sustainable development through securitization of resources.

Examples

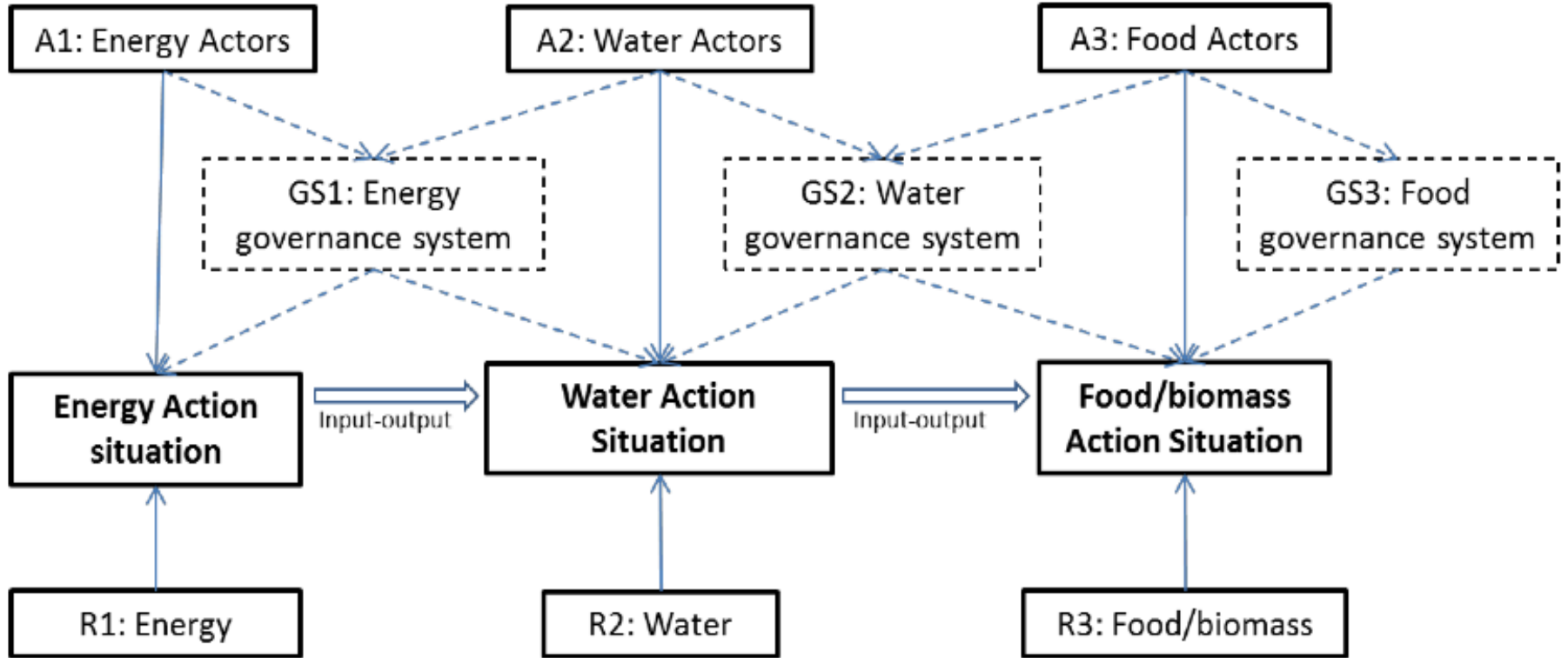
- Water-food-energy-climate nexus (WEF, 2011)
- Water-energy nexus (Scott et al., 2011)
- Water and food nexus (Mu and Khan, 2009)
- Bioenergy and water nexus (UNEP, 2011)
- Energy-irrigation nexus (Shah et al., 2013)
- Land use-climate change-energy nexus (Dale et al., 2011)
- Development related nexus approaches (Groenfeldt, 2010)

The Water-Energy-Food Security Nexus through the Lenses of the Value Chain and the Institutional Analysis and Development Frameworks

Villamayor-Tomas, S., Grundmann, P., Epstein, G., Evans, T. and Kimmich, C. 2015.

- Capture cross-sectorial and cross-spatial connections within production and distribution process.
- Identify resources, transactions and critical stages in the value chain.
- Analyze interaction of the varied participants.
- Understand system dynamics.

Water-Energy-Food Nexus



Source: Villamayor-Tomas et al., 2015

Conclusion

- Examine and map value chain
- Identify and evaluate high value markets
- Identify system dynamics
- Perform sensitivity analysis



Develop business and competitive strategies

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Thank you

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