Sustainability in Natural Resource Planning

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Presentation Outline

- Definitions of Sustainability
- Key components of Sustainability
- Models of Sustainability
- Final thoughts to consider in National Planning Rule

Sustainability - Definitions

- Despite several decades of discussion, the definition of sustainability is contested.
  - Varies with discipline
  - Varies with perception & experience
  - Varies with cultural understandings of Human & Environment interactions
  - Varies with time and spatial scales
- Makes it challenging to plan, monitor, and evaluate natural resource management

Sustainability - Definitions

- Brundtland Report 1987: meeting the needs of the present without compromising the ability of future generations to meet their needs
- Weak sustainability: natural and manufactured capital as interchangeable
- Strong sustainability: manufactured capital cannot replace some natural capital
- Sustainability bridges the human and environment divide

Brundtland 1987; Daly and Cobb 1989; Hapwood et. al 2005; Rees, 1998; Roseland,

Sustainability - Definitions

- Integrates the social and scientific - what people collectively want and what is ecologically possible
- Integrates scientific, societal, and managerial information through an iterative, rather than linear, process of defining objectives
- An iterative exchange of information is central to developing creative solutions to complex natural resource issues

Bormann et al. 1994 PNW-GTR-331

Sustainability – Adaptation & Learning

- Sustainability relies on successful adaptation to changing conditions across time, location, and context
- Adaptation requires ongoing learning
- Requires a process of perpetual learning and innovation—local people, local institutions, and national institutions

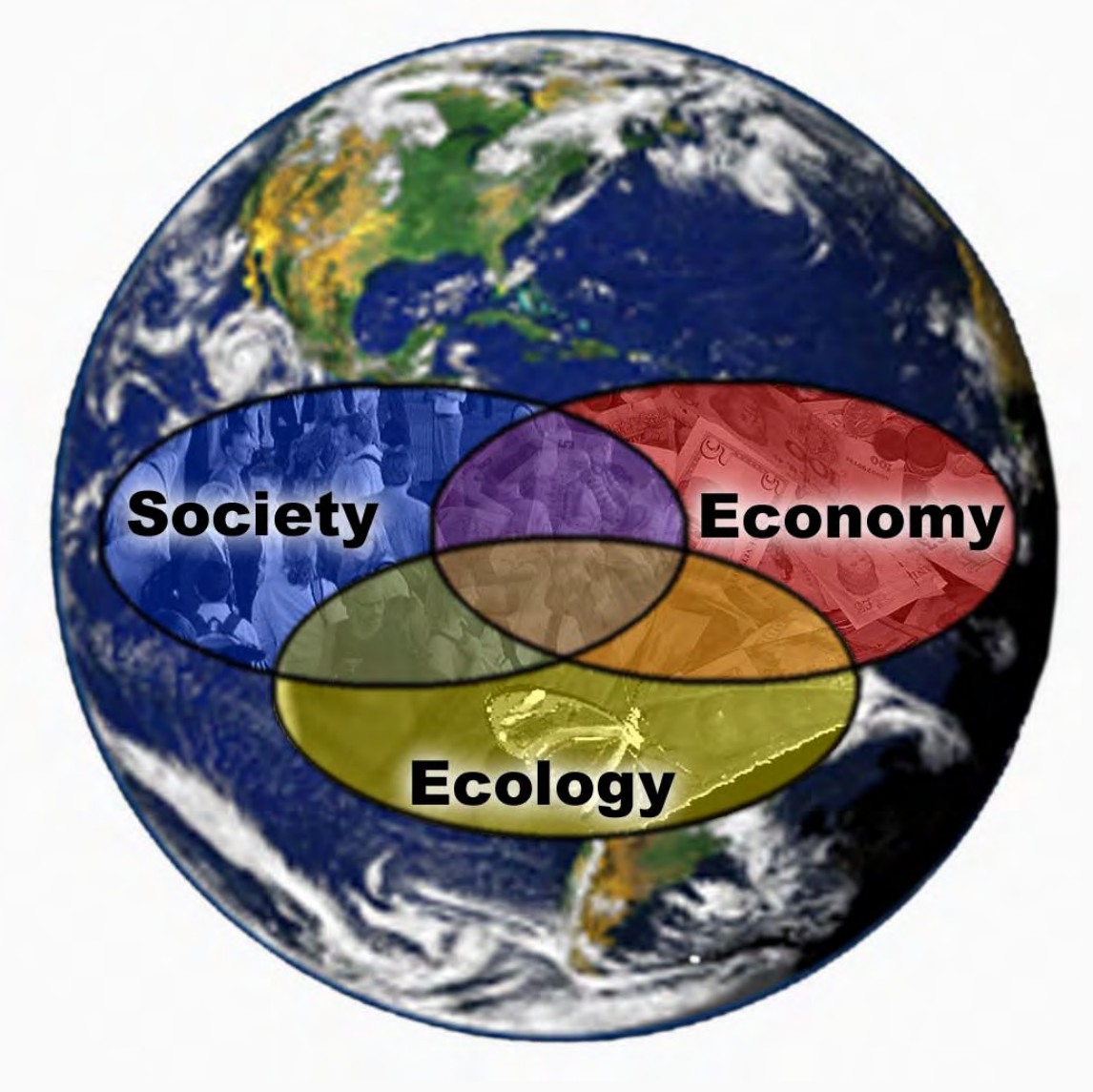
Angelsen et al. 1994; Bezuneh et al. 1995; Brinkerhoff 1991; Flora 2001; Mog 2006; Pretty 1995; Uphoff et al. 1998

Sustainability – Key Components

- Citizen participation and empowerment in decision making
- Internal agency participation and collaboration
- Involve stakeholders and agency staff in priority setting, rulemaking, planning, implementation, evaluation
- Collaboration – Diverse stakeholders
- Understanding Values
- Uncertainty is inherent in complex ecological and social systems – requires an informed social dialogue for decisions
- Iterative, public, and inclusive processes to understand values as a foundation for formulating policy that leads to sustainable outcomes

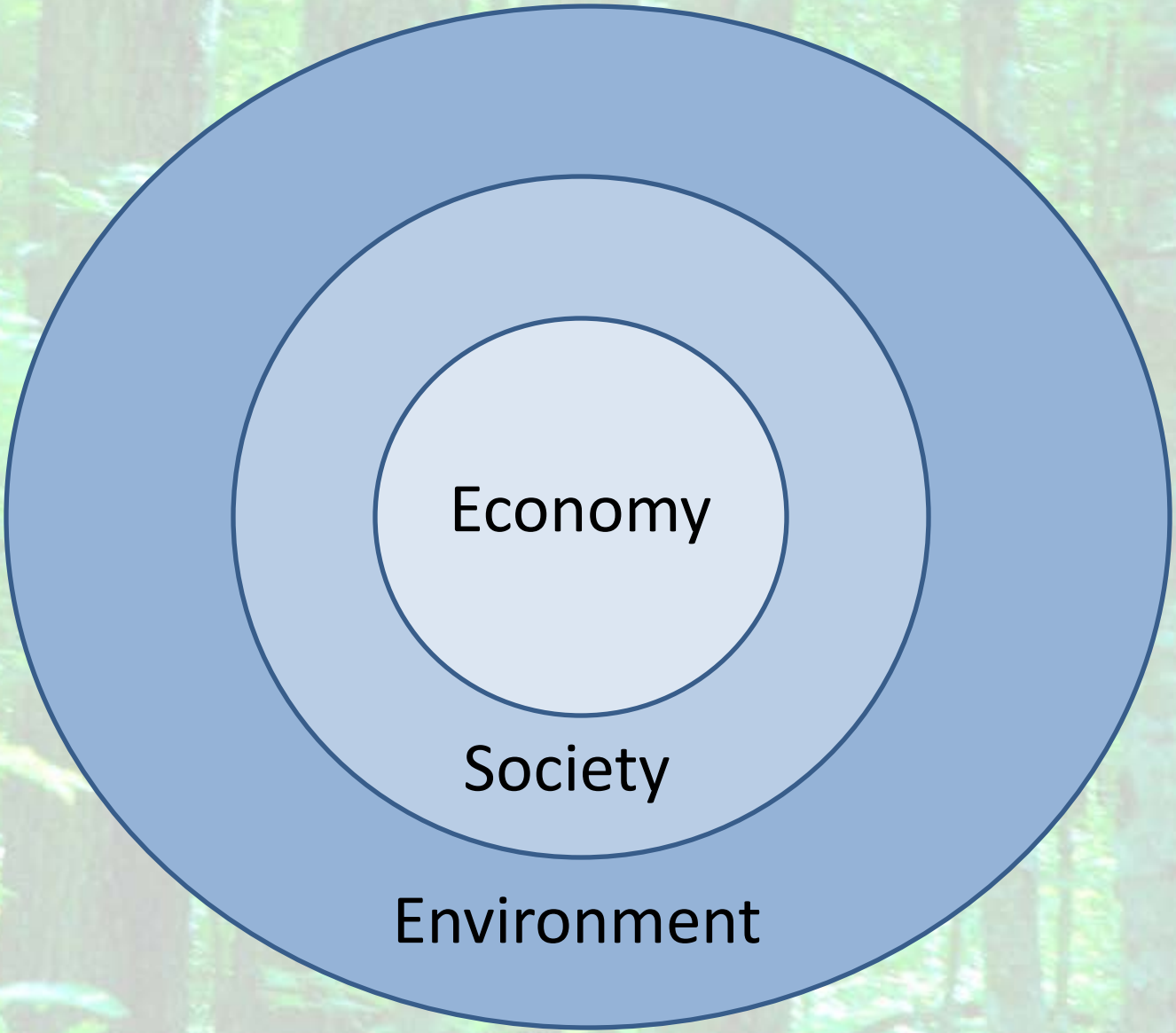
Brundtland 1987; Koontz 2006; Ostrom 1990; Swedeen 2006

Sustainability Models



Sustainability Models

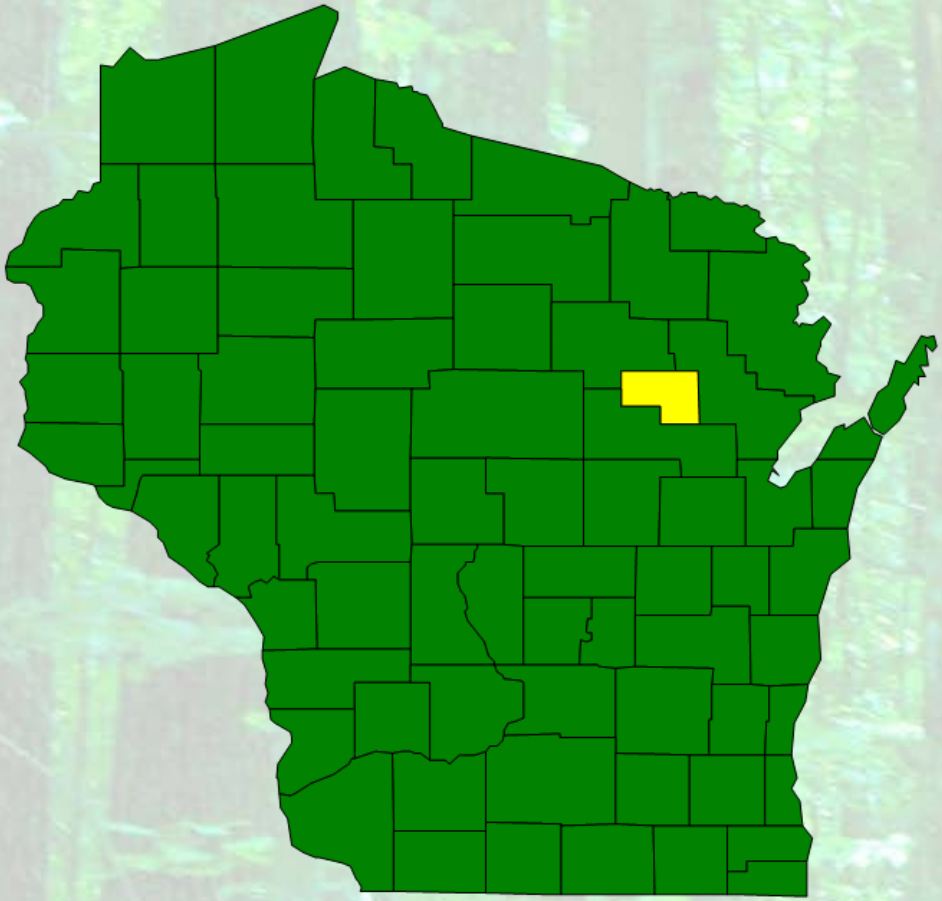
Sustainability Models



College of Menominee Nation
Sustainable Development Institute

Sustainable Development Model

Menominee Reservation is
235,000 acres and 95% forested.



Menominee Nation

Sustainable Forest Management


N
© 2006 Europa Technologies
Image © 2006 TerraMetrics
©2006 Google
Pointer 45°39'10.16" N 89°30'16.90" W elev 1580 ft
Streaming 100%
Eye alt 66.77 mi

From the time of the 1854 treaty until today, the Menominee have cut timber from their forest.

1910ca

Understanding Menominee Sustainable Forest Management

- Model created in the 1990s – College of Menominee Nation
- Created to understand Menominee Sustainable Management
- Academics, forest managers, community
- Provide a framework for understanding sustainability

Sustainable Development Institute Model

Sustainable Development Depends on 6 Interactive Dynamic Dimensions

Land and Sovereignty
Natural Environment
Institutions
Technology
Economy
Human Perception, Activity & Behavior

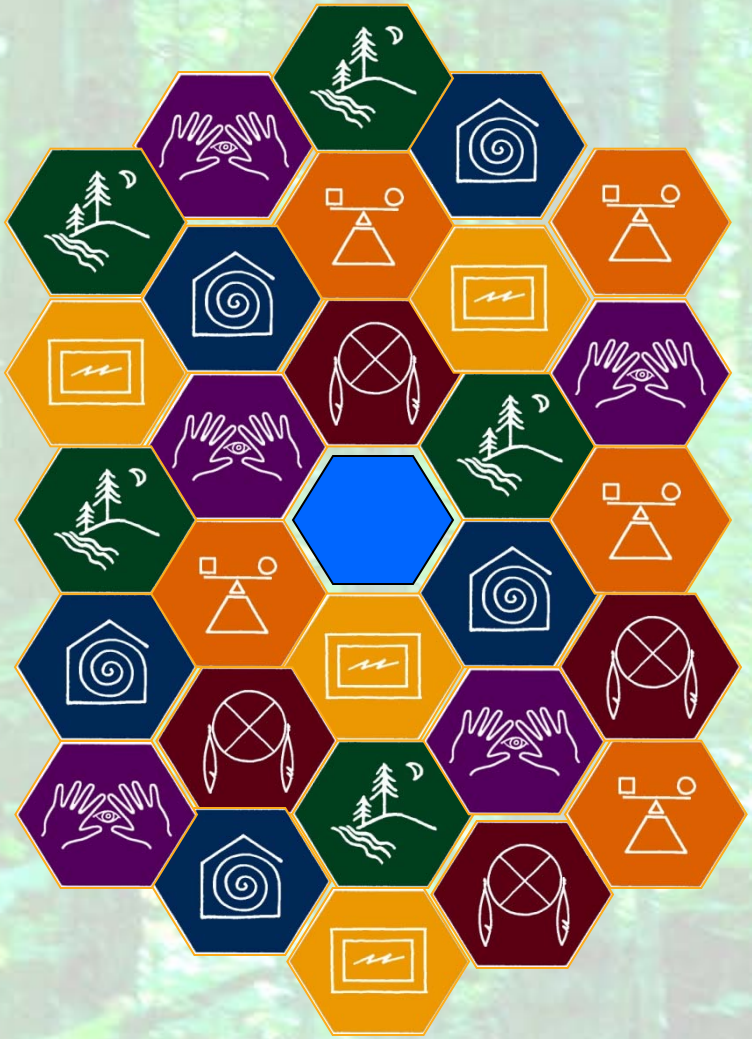
Sustainable Development Definition

Sustainable development is a process of balancing tensions

Intersections illustrate tensions

As tensions are relieved, new tensions arise

Sustainable development is a continual and iterative process



Sustainable Development Institute Model

How have the Menominee balanced the tensions?

Sustainable Development Using the Model

The model can be used to develop a narrative

- Understand change over time (quantitative and qualitative)
- Understand interactions among model elements
- Set future goals and develop solutions
- Stories to understand sense of place
- Data to understand environment, economy, demographics and trends
- Narrative connects time scales
- Narrative fosters collaboration and dialogue

Sustainable Development Model Summary

- Model is based on Menominee experience
- Can be used to assess past and present situations and develop future solutions
- Can be used by researchers, planners, communities
- Model can incorporate scale, time, and complexity
- Dynamic model
- Outlines key components of Sustainable Development

Thoughts on Planning Rule

- Need scientific information and models
  - Data from local and national scales (e.g. National Report on Sustainable Forests, Forest Service Inventory Data, Forest Service GIS layers)
  - Current indicator projects are a good source of information
  - Include qualitative and quantitative social science & humanities in the process
- Recognize social nature of science and decision making
- Collaboration, learning, and flexibility are critical for sustainability
  - Diverse Public Stakeholders
  - Internal agency collaboration
  - Tribal collaboration – Government-to-Government
- Define what sustainability means for each forest plan – Collaboration to understand Key Dimensions, Interactions , Values
- Opportunity for Integration of Research, S&PF, and NFS