

WATER MANAGEMENT IN THE CONTEXT OF CHANGING CLIMATE

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WICKED PROBLEMS

Rittel and Webber (1973)

- CANNOT BE SOLVED BY TECHNOLOGY AND SCIENCE ALONE
- SOCIAL POLICY AND HUMAN DIMENSION ELEMENTS
- NO DEFINITIVE SOLUTION
- SOME CONSIDER INTRACTABLE

NATURING THE INFANT

Holling and Chambers (1973)

- “It is a tempting academic device to approach any problem from a traditional viewpoint.”
- “We need to find directions toward solutions and not the Utopian solutions themselves.”
- Universities are effective environments for research
- Government agencies have experience in policy implementation but too fragmented for a holistic approach
- “...a gap still exists that inhibits the formulation and implementation of policies that are responsive to **peoples needs.**”

CLIMATE CHANGE

WICKED PROBLEM PERFECT STORM

Complex

Uncertain

Long time to Define

Hard to Define

No Technical and Scientific
Solution

Political

Social

Contentious

INFORMING DECISIONS IN A CHANGING CLIMATE

NATIONAL RESEARCH COUNCIL (2009)

“DECISION MAKERS...NEED NEW KINDS OF INFORMATION, AS WELL AS NEW WAYS OF THINKING, NEW DECISION PROCESSES, AND SOMETIMES NEW INSTITUTIONS, TO FUNCTION EFFECTIVELY IN THE CONTEXT OF ONGOING CLIMATE CHANGE.”

WHAT'S NEW?

1984, 1985, 1988, 1989, 1990, 1992,
1994, 1997, 1999a, 1999b, 2002a,
2002b, 2004d, 2005a, 2007b, 2008c

BEYOND THE STABLE STATE

(Schon, 1973)

- “Belief in the stable state is strong and deep within us.”

(Schon, 1973)

- “Belief in the stable state is ... a bulwark against the threat of uncertainty.”

(Schon, 1973)

- “Understanding why rigidity makes sense may help in finding ways to avoid traps in situations where flexible response and innovation is needed.”

(Scheffer and Westley, 2007)

INTEGRATED SOLUTIONS

“IF WE ARE FACED WITH RUNAWAY CLIMATE CHANGE OR IF RESOURCE CRISES DEEPEN, WILL WE BE INNOVATIVE ENOUGH TO FIND A WAY OUT, AND FLEXIBLE ENOUGH TO ADJUST OUR PATTERNS OF LIVING?”

(Scheffer and Westley, 2007)

PREMISE

COLLECTIVE ACTION, AT ALL SCALES AND LEVELS OF GOVERNANCE AND SOCIETY, IS NEEDED TO ADDRESS THE IMPACTS OF CLIMATE CHANGE TO ACHIEVE SUSTAINABLE SOCIETIES AND ECOSYSTEMS.

MULTIDISCIPLINARY APPROACH

WHY?

HOW?

WHERE?

BARRIERS?

BRIDGES?

SOLVING WICKED PROBLEMS

WE NEED TO ACCOUNT FOR:

- DIVERSE VALUES AND DIVERSE INTERESTS
- THE ROLE OF THE EXPERT
- GOVERNANCE
- NEW INSTITUTIONS
- COLLECTIVE ACTION
- NEW MINDSET (SOCIAL MOVEMENT)

PLAIN HARD WORK!!!!!!