BARRIERS TO INTEGRATED RESOURCE AND ENVIRONMENTAL MANAGEMENT

MEKONG RIVER COMMISSION
FOR SUSTAINABLE DEVELOPMENT
MRC

Lesson Learning Goals

At the end of this lesson you should be able to:

➔ Identify major barriers to integrated resource and environmental management (IREM)

➔ Discuss the concepts of problem complexity, uncertainty, and wickedness

➔ Give examples of scientific and technical, institutional, and economic constraints

➔ Characterize your own perspective of natural resources in terms of value judgements

Barriers to IREM

➔ The Nature of the Problem (e.g., complexity, uncertainty, wickedness)

➔ Scientific and Technical

➔ Economic Constraints

➔ Institutional Constraints

➔ Socio-Cultural Constraints

Problem Complexity

Problem complexity stems from:

➔ the multitude of ecological factors involved in any one environmental issue

➔ the high level of interaction among ecosystem components; cannot deal with one ecosystem component in isolation

➔ various dimensions of environmental issues (i.e., ecological, social and economical)

➔ constantly changing conditions

Uncertainty

Problem complexity is compounded by uncertainty which stems from:

➔ limited understanding of ecological systems (e.g., sensitivity, ability to absorb change, interrelationships)

➔ limited experience and understanding with interactions between ecological, social and economic systems

Wickedness

➔ Environmental problems are sometimes referred to as wicked or ill-structured

➔ In contrast to tame problems which are structured, well-defined and bounded, wicked problems may be definable and answerable but often cannot be effectively resolved due to time or resource constraints

➔ Wicked problems are extremely challenging because there is rarely one correct solution

Over-Reliance on Science and Experts

➔ Science and expert opinion are considered essential for sound environmental decision making

➔ Focus on scientific perspective have meant that other potential inputs have been under-valued and under-utilized (e.g., traditional ecological knowledge, public opinion, social science)

➔ Why do we regard science as providing the sole cognitive authority?

Focus on 'Technical' Dimension

➔ Focus on scientific technical dimension has also meant that insufficient attention given towards examining underlying values

➔ Science cannot attach meanings to observations; these are based on values
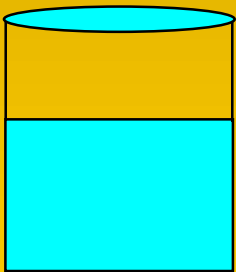
Science: The glass has 250 mL of liquid

Value Statement: The glass is sufficiently full

Over-Reliance on Science and Experts (Cont'd)

➔ Insufficient attention given towards developing strategies for addressing scientific limitations

For example,

» Conventional scientific practices are limited in their ability to address problems at the ecosystem level (i.e., an absolute scientific diagnosis of ecosystem health is highly unlikely, especially in large water bodies)

Economic Constraints

➔ Lack of resources

   » high cost of rehabilitating damaged or impacted ecosystems

   » insufficient resources dedicated towards integrated management

➔ Lack of incentives and disincentives to prevent market failures (e.g., managing the 'Tragedy of the Commons')

➔ Failure to consider non-market value of natural resources

Insufficient Resources

➔ Poverty and hunger are today's crisis - it is difficult to allocate resources to long-term protection of the environment when human lives are threatened today

➔ Resources for environmental efforts are typically allocated to individual agencies - since resources are extremely limited, agencies focus on addressing their respective single-agency priorities

Managing the 'Tragedy of the Commons'
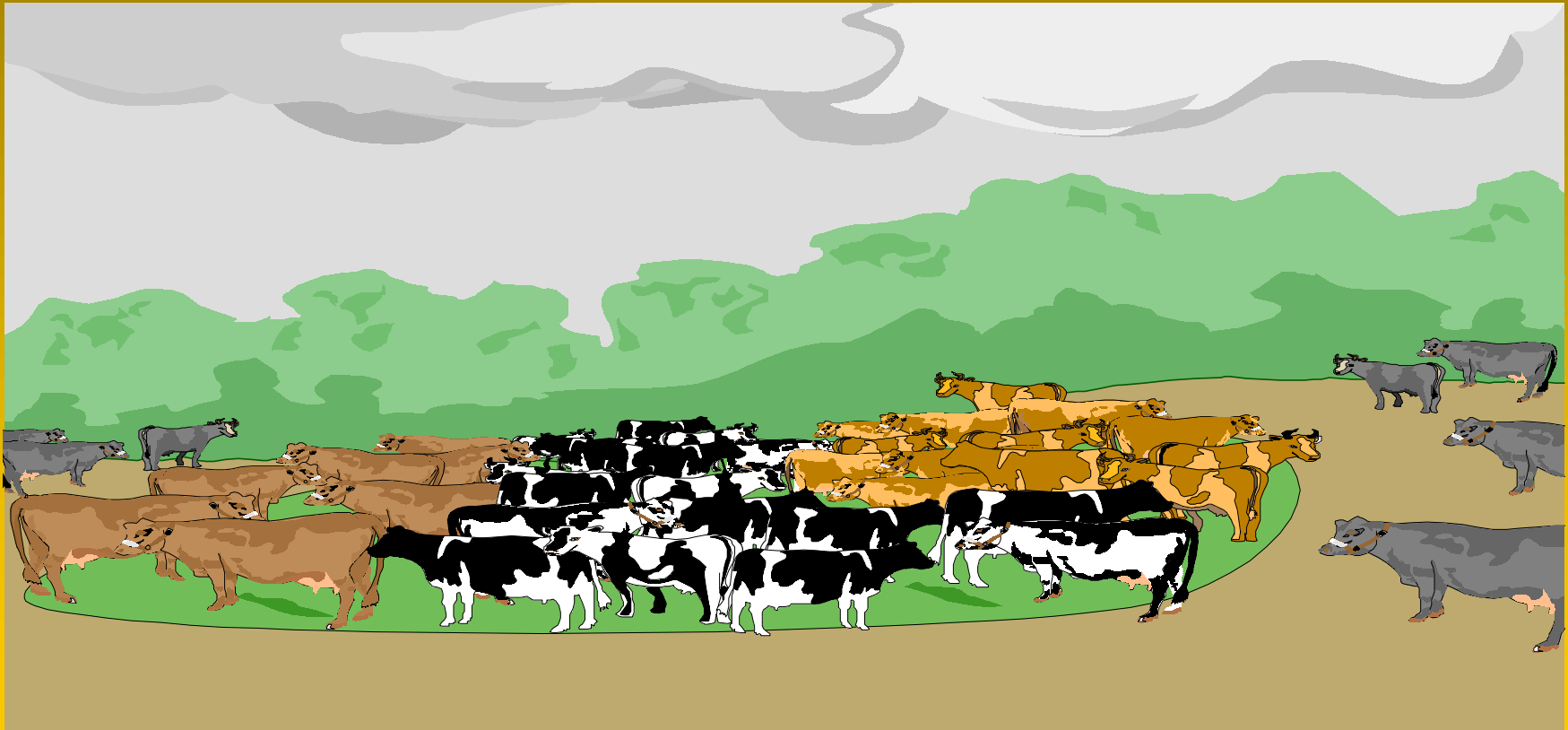
Managing the 'Tragedy of the Commons' (Cont'd)

➔ Individuals pursuing their own interests often produce unacceptable collective effects on common resources

➔ Not addressed by conventional economic market model; open entry prevails

➔ Managing collective interests over individual pursuits is becoming increasingly difficult
  » greater demands per individual
  » population growth

Market Failures

➔ Predominance of monetary valuation (i.e., market values of natural resources as commodities) effectively excludes non-market values

➔ Failure to capture non-market values (e.g., value of forest as wildlife habitat versus market timber prices) biases cost-benefit calculations

➔ Externalities (i.e., an effect of one economic actor's activity on another's well-being) are not taken into account in the price system

Sectoral Structures

➔ Predominantly sectoral organization of government (e.g., fisheries, wildlife, water resources, pollution control) means that natural resources are often managed independently (i.e., management is compartmentalized)

➔ Sectoral approach generally effective for well-defined issues but ineffective in addressing ecosystem-level issues (i.e., complex or wicked problems are broken down into parts for resolution but difficult to recombine pieces afterwards)

Sectoral Structures (Cont'd)

Compartmentalization takes three forms:

➔ **Ecological:** issues that fall outside of well-defined compartments are under-represented

➔ **Jurisdictional:** broader environmental issues which transcend single resources or multiple management areas are often ignored and inter-jurisdictional policy externalities can be created

➔ **Temporal:** artificial timeframes are imposed in managing natural resources

Fragmented Legislation

➔ Weaknesses of sectoral management structure are exaggerated by fragmented legislation which is typically resource or activity-specific (e.g., fisheries, industry, water quality)

➔ Mandated to enforce legislation, government agencies subsequently adopt piecemeal approaches; discourages holistic responses

➔ Narrowly-defined agency mandates undermine collaborative efforts and can lead to conflicting policies and management strategies

Political and Governmental Processes

➔ Discontinuity (i.e., political and/or civil service changes) in government is disruptive and inhibits long-term, holistic management approaches

➔ Conventional government practices are:

» reactive/focus on short-term products and results (e.g., 'quick fixes')

» focus on concrete products; intangible benefits (e.g., increased coordination, improved decision-making process) are almost always undervalued

Lack of Interdisciplinary Perspective and Expertise

➔ Society has institutionalized disciplines

➔ Problems are often framed in discrete compartments:

> » an 'Economic' problem
> » a 'Fisheries' problem

➔ Result: Problems are framed narrowly and there is a limited knowledge base and lack of tools for holistic assessment

Value Judgements

Examples of different values are:

➔ **Exploitist:** equates natural resources with supplies of raw materials

➔ **Utilist:** nature produces useful resources and provides valuable assimilative processes which should be protected

➔ **Integrist:** humans should adapt to natural processes to avoid causing them irreparable harm

➔ **Inherentist:** nature has value beyond any use to humans

Value Judgements (Cont'd)

➔ Differences in values can represent a barrier to integrated environmental management; involves value judgements about how humans should interact with nature

➔ Reconciling differing value judgements is a fundamental challenge of sustainable development

➔ Management strategies defined solely in scientific terms are likely to fall short in addressing root causes and therefore are often limited in their effectiveness

Concluding Thoughts

Important points to remember are:

➔ Serious challenges exist in adopting IREM approach

➔ Many hurdles are associated with inflexible management structures and engrained practices

➔ Barriers must be identified in attempting to restructure and formulate new strategies

➔ Sustainable development demands fundamental changes in both our management approach and societal perspectives