Opportunities and Challenges in Integrated Lake Basin Management

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Overview

- The World Bank
- Recent Studies and Experience
- Opportunities and Challenges
- Lessons Learned
The World Bank
World Bank

- Founded in 1944
- Over 180 Member Countries
- Headquarters in Washington, DC
- Offices in Many Countries, including China
- Provides:
  - Global Expertise and Knowledge
  - Funding for Programs and Projects
  - Analytical Work of a Variety of Types
World Bank - Four Points of Focus

- Focus on Poverty Reduction, including Millennium Development Goals
- Commitment to Environmentally and Socially Sustainable Development
- Promoting Country Driven Development Effectiveness
- Actively Supporting Responsible Growth Worldwide
Recent Studies and Experience
Integrated Lake Basin Management

“Managing Lakes and their Basins for Sustainable Use: A Report for Lake Basin Managers and Stakeholders”

2005
Integrated Lake Basin Management

- Global Environment Facility (GEF)
- International Lake Environment Committee (ILEC)
- Lake Net
- Ramsar Convention on Wetlands
- Shiga Prefectural Government - Japan
- United Nations Development Programme (UNDP)
- United Nations Environment Programme (UNEP)
- United States Agency for International Development (USAID)
- World Bank
Integrated Lake Basin Management

- Product – A Report: “Managing Lakes and their Basins for Sustainable Use”
- Process – A Three Year Interactive Process with a Wide Range of Stakeholders
- Outcome – A Global Common View of the Issues, Trends and Opportunities in Lake Basin Management
Integrated Lake Basin Management


- Shifts from traditional focus on the management of lakes to a more comprehensive focus on management of lake basins

- Recognizes the importance of lake basins for sustainable management of water resources, conservation of ecosystems and improvement of livelihoods
Integrated Lake Basin Management

- Mainstreams lake basin management as part of regional, national and local water resources sector strategies
- Developed lessons learned from three regional conferences, 28 lake basin briefs, and thematic papers
- Supports development of sustainable institutions – from community based to local/national level to transboundary management structures
Integrated Lake Basin Management

A Complementary Study:

“Lessons for Managing Lake Basins for Sustainable Use”

World Bank - 2005
Opportunities and Challenges
Importance of Lakes

- Importance for Biodiversity
- Major Fishery Resources
- Economic Importance
- Transportation and Communication
Importance of Lakes

- Spiritual and Cultural Value
- Critical Stores of Freshwater
- Water Regulation
- Critical Habitats
A Major Challenge

Making Sustainable Management of Lakes and their Basins a Central Element of Integrated Water Resources Management
A Management Continuum

Basin  Shore  Lake
Three Key Parameters

Quantity  
Quality  
Ecology
Problems Affecting Lakes - Basin

- Watershed Degradation including Excess Sediment Inputs
- Excessive Water Withdrawals and/or Diversions
- Agro-Chemical Pollution from Non-Point Sources
- Point Source Pollution from Municipal and Industrial Sources
Problems Affecting Lakes - Shore

- Land Use Change, Habitat Degradation, Conversion of Wetlands
- Shoreline Effluent and Storm Water Discharge
- Shoreline Industrial Contaminants
- Shoreline Water Extraction
- Shoreline Disposal of Municipal and Industrial Wastes
Problems Affecting Lakes

- Decreases in Carrying Capacity
- Increases in Nutrient Levels
- Decreases in Oxygen Levels
- Unsustainable Fishing Practices
- Introduced Faunal and Floral Species
- Weed Infestations
- Nutrients from Fish Cages
- Changes in Salinity Levels
Lake Basin Governance

- Policy
- Institutions
- Rules
- Public Participation
- Information
- Finance
Diverse Stakeholders

- National Government
- Local Government
- Special Government Authorities
- State Owned Industries and Enterprises
- Private Sector and Farmers
- Universities and Applied Research Institutes
- Professional Organizations
- Civil Society Organizations
- Nongovernmental Organizations
- Individual Citizens
Fragility of Lakes

- Vulnerable and fragile systems with special management needs
- Often closed or semi-closed systems with longer retention periods for pollutants
- Pollutants in system over long periods
- Process of mixing and breaking down waste discharges is slow
- Subject to dramatic system responses
Management of Lake Basins

- Complex land and water relationships
- Competition between resource user groups
- Often rapid changes in economic activities
- Ecological integrity of many lake basins has become threatened
- New issues associated with climate change and hydrological variability
Management of Lake Basins

- Political leaders and civil society need to be broadly engaged on a sustained basis
- Diverse institutional arrangements can be effectively used for management
- Management decisions often need to be taken with incomplete information
- Coordination between planners, managers and the public is essential
- Limited integration of priorities into budget processes is a key constraint
Support for Lake Management

- Chilika Lagoon – India
- Lake Baikal – Russian Federation
- Lake Chad – Central Africa
- Lake Ohrid – Southeast Europe
- Lake Sevan – Armenia
- Lake Skhoder – Southeast Europe
- Lake Victoria – Eastern Africa
- Laguna de Bay – Philippines
Support for Lake Management

- Management Plans
- Draft Legislation and Regulations
- Baseline Data Collection
- Institutional Development
- Training
- Information Programs
- Public Participation
Support for Lake Management

- Watershed, Shoreline and Lake Management
- Water Supply
- Water Quality Management
- Urban and Community Development
- Biodiversity, Habitat and Fisheries
- Environmental Restoration
- Recreation/Ecotourism
Investment and Advisory Support

- National and Local Governments
- International Loans from Multilateral Development Banks
- European Union and Bilateral Grants
- Private Sector and Private Foundations
- Innovative Mechanisms – Global Environment Facility (GEF)
Lessons Learned
Key Lessons

- Shared Vision
- Sustained Political Commitment
- Sustained Public Commitment
- Broad Based Partnerships
- Integration into Planning
- Integration into Budget
- Updating Vision to Address Change
- Public Awareness and Education
Lessons Learned – Development

- Lake basin management is critical for sustainable development and responsible economic growth
- Lakes and their basins are fragile and complex ecosystems under serious stress
- Successful management requires long-term political and public commitment
- Management approaches need to include a diversity of stakeholders
Lessons Learned – Complexity

- Individual lakes have unique physical, chemical and biological attributes
- Lakes are more complex to manage than rivers and wetlands
- A greater diversity of specialists is needed for planning and management activities
- Our ability to predict the behavior of lakes remains limited
Lessons Learned – Policies

- Science should inform policies
- Need to move beyond good science
- Management decisions often need to be taken with incomplete information
- Policies need to be updated and adjusted to meet changing knowledge and conditions
Lessons Learned – Institutions

- Diverse institutional arrangements
- Limited linkage between planners and managers
- Weak coordination and competition between institutions
- Limited integration of priorities into budget processes
Lessons Learned – Planning

- A wide variety of planning tools have been used for lake basins and lakes
- It is critical to combine information on physical and biological conditions with that on economic and social conditions
- Plans need to be dynamic in their approach and address current and emerging issues
Lessons Learned – Management

- Lakes and their basins should serve as management units
- Lakes need to be managed on site
- Multiple levels of government need to be involved in planning and management
- Civil society needs to be broadly engaged
Lesson Learned – Change

- Critical for long-term success
- Recognition of political and institutional changes
- Periodic updating of strategy to reflect changes in the lake basin and lake
- Identification of emerging issues
- Finding opportunities for new partnerships
Lesson Learned – Integration

- Making Integrated Management of Lake Basins a Long-Term Element of:
  - Government and Public Priorities
  - Planning Processes
  - Integrated Water Resources Management
  - Habitat and Biodiversity Conservation Programs
  - Economic Development Programs
Summary

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Managing Lakes and their Basins for Sustainable Use: A Report for Lake Basin Managers and Stakeholders

International Lake Environment Committee Foundation (ILEC)

http://www.ilec.or.jp