Dams and Sustainable Development
Responding to a Growing Controversy

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Dams and Development

- Water Resources Management
- Irrigation & Food Security
- Energy Demand & Options
- Climate Change & Hydropower
- Ecosystems & Biological Diversity

- Environmental Security & Conflict Resolution
- Governance & Decision Making
- Equity & Human Rights
- Participation & Accountability
- Roles of Private Sector & Civil Society
- Financing of Development

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Large Dams

- 40,000 - 50,000 Large Dams worldwide
- Single/Multiple Purpose
- Irrigation
- Electricity Generation
- Water Supply
- Flood Management

- Navigation, Recreation, others
- 20,000 dams in China
- Hydro - 19% of world electricity supply
- China, India, Turkey, Iran and Japan top five in new dam construction

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DAMS AND ENERGY

- 150+ countries utilise hydropower resources

- In 65 countries hydro produces more than 50% of total electricity generated

- Hydropower provides 20% of world electricity supplies and 90% of renewable electricity generated

- Currently 126,000 MW of hydro capacity under construction
THE DAMS DEBATE

• Economic cost-benefit assessments
• Environmental impacts & sustainability
• Social costs, impacts and equity
• Viability of alternatives
Focus on Environment

• Facts: impact on biodiversity, wetlands, ecosystem functions, CO2 emissions
• Uncertainty: changes in technology & markets, unexpected impacts
• Mitigation responses: viability, costs, who pays, monitoring & implementation
• Values: negotiating trade-offs, aesthetic & spiritual values, preserving wilderness
“…A concerted effort to develop the earth’s hydropower resources will open the path to a sustainable energy supply….desperately needed as the curtain falls on the petroleum era. The barriers to expanded hydroelectric development are international conflict, unequal access to the world’s financial resources and misdirected government agencies. Beyond them..lie rivers of energy” (1981)
A Change in Paradigm and Practice

- **Design Team**
  - Engineers
  - Engineers + **Economists**
  - Engineers + Economists + **EIS at end**
  - Engineers + Economists + **Environmentalists & Sociologists**
  - Eng. + Econ. + Evt & Soc. + **Affected People**
  - Eng. + Econ. + Evt & Soc. + AP + NGOs
  - Eng. + Econ. + Evt & Soc. + AP + NGOs + **Public Acceptance**

- **Era**
  - Pre-WWII
  - Post-WWII
  - Late 1970s
  - Late 1980s
  - Early 1990s
  - Mid 1990s
  - Early 2000s?

- **Note:** The era holds more for industrialised nations than for developing ones. Adapted from R. Goodland.

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The Dilemma

- Growing dissent and conflicts
- Costs and risks escalating
- Lack of capital for investment
- Confrontation vs informed dialogue
- Interest groups replace negotiated consensus on long term national water/energy strategies
A NEW APPROACH

- A process for dialogue established by all stakeholders and interest groups
- Open, fair and transparent
- Inclusive of public sector, private sector and civil society
- A Commission composed of individuals reflecting different perspectives
Workshop on Large Dams, Gland, Switzerland
April 1997

*Jointly hosted by the World Bank and IUCN*

Purpose:
To initiate dialogue and debate on dam issues between representatives of the major stakeholder groups

Stakeholder Participation
- Governments
- Civil Society Organisations
- Private Sector
- Utilities and Developers
- International Financial Institutions

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Commission Mandate

Guiding Principles
- Independent, open and transparent, consensus driven
- Inclusive and accessible to all stakeholders.

Objectives
- Review the development effectiveness of large dams
- Assess alternatives for water resource and energy development
- Develop internationally acceptable criteria and guidelines for planning, construction, operation, monitoring and decommissioning of dams.

World Commission on Dams
Commission Members
Kader Asmal, Chair
Minister of Water Affairs and Forestry South Africa

Lakshmi Chand Jain, Vice-Chair
Industrial Development Services

Donald Blackmore,
Murray-Darling Basin Commission

Joji Cariño
International Alliance of Indigenous Tribal Peoples

José Goldemberg
University of Sao Paulo

Judy Henderson
Oxfam International

Göran Lindahl
ABB Asea Brown Boveri

Deborah Moore
Environmental Defense Fund

Medha Patkar
Struggle to Save the Narmada River

Jan Veltrop
Honorary President, ICOLD

Thayer Scuddler
California Institute of Technology

Shen Guoyi
Ministry of Water Resources People’s Republic of China

Achim Steiner
WCD Secretary General
(Ex-officio member)
WCD Outputs

• Global review of development effectiveness → Lessons Learned
• Framework for options assessment and decision making process → Decision Support
• Criteria and guidelines for decision making in planning → Policy Framework

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Funding Scenario
as of March 1999

- World Bank US$800,000
- Norway US$750,000
- Japan US$500,000
- Sweden US$490,000
- ABB US$200,000
- Switzerland US$650,000
- Germany US$850,000
- NWF/USA US$2,000
- Skanska US$50,000
- China US$20,000
- South Africa US$10,000
- Siemens US$65,000
- US B R US$50,000
- WWF US$10,000
- Mott Foun. US$25,000
- UK US$675,000
- Alsthom US$50,000
- Enron US$100,000
- Atlas Copco US$50,000
- Rockefeller BF US$50,000
- Harza US$10,000
- Tractebel US$5,000
- Coyne&Bellier US$5,000
- Denmark US$50,000
- Canada US$65,000
- Hydro Quebec US$135,000

World Commission on Dams
Timelines

- Launch of the Commission: February 1998
- First Commission meeting: May 1998
- Interim Report: June 1999
- Commission Report: June 2000

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Energy Consensus 1

- No longer prerogative of Government departments and experts
- Future energy strategy must build on negotiated consensus in a society
- Involve private sector and civil society as stakeholders
- Reflect changing global context & linkages
Energy Consensus 2

- Initiate public debate at options assessment stage
- Framework for comparing options
- Illustrate complex choices and trade-offs
- Incorporate changing values & priorities
- Address equity issues to reflect local vs national costs and benefits
Energy & World Bank

- Knowledge: what are the options
- Facilitation: national energy consensus
- Capacity building: people & institutions
- Finance: public-private partnerships
- Leverage: new strategies & technologies

- Efficiency, Sustainability, Equity