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Integrated Water Resources Management (IWRM): *Philosophy and Practice*

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Integrated Water Resources Management (IWRM): **Philosophy and Practice**



The Objective

Converting a philosophy into practice is a challenge. The main hurdle lies in the practical application of the IWRM philosophy. The objective here is to provide an analytical overview of the perceived difficulties and shortcomings inhibiting implementation of IWRM, and to emphasize measures required to manage water resources in a pragmatic and adaptive compatible manner.

Integrated Water Resources Management: Philosophy and Practice

Presentation Outline

1:Management Drives2:IWRM Philosophy3:Implementation Gap4:Concluding Remarks

Integrated Water Resources Management: Philosophy and Practice







- All forms of life on earth depends on water.
- > The importance of water to our wellbeing.
- Water is essential to sustain all kinds of development activities and ecosystems.





- > The problem is that water, although plentiful, is not distributed as we might wish. There is often too much or too little, or what exists is too polluted or too expensive.
- > A further aggravation is the likely deterioration of the water situation as a result of global changes.

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- The need to manage water resources is driven by the realization that there are both problems to solve and opportunities to obtain increased benefits from the use of water and related resources.
- Solutions, opportunities and benefits can be achieved in many different ways.

Integrated Water Resources Management: Philosophy and Practice







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IWRM Philosophy

Pre-IWRM Approaches

- Pre-IWRM (Pre-1990s), the trend in water resource management has been towards managing human engagement with the water cycle rather than simply the resource.
- The approaches have been mostly sectoral top-down and supply oriented management, with limited coordination between water use sectors and at separate governance levels.



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2: IWRM Philosophy

IWRM's Evolution

Although it is claimed that IWRM's origin goes back to the Tennessee Valley Authority in the 1930s, the more recent incarnation of IWRM can be traced back to the UN's Mar del Plata Argentina conference of 1977.

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The conference considered water management on a holistic basis, but not really put on the international agenda until the early 1990s.



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IWRM's Evolution

- In January, 1992, the Dublin International Conference on Water and the Environment.
- The 1992 UN Rio de Janeiro Earth Summit, (Dublin principles -> Chapter 18 of Agenda 21).
- The 1997 UN General Assembly Special Session and the 1998 UN Commission on Sustainable Development called for comprehensive strategic approaches to freshwater management.



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2: IWRM Philosophy

IWRM's Evolution

The WWF2 (The Hague 2000) endorsing active participation of stakeholders.

MISM

- International Conference on Freshwater (Bonn, 2001) suggested IWRM to achieve sustainable development.
- The World Summit on Sustainable Development (Johannesburg, 2002) and the WWF3 (Kyoto, 2003) manifested international political recognition of IWRM as the mechanism to achieve sustainable water management.

IWRM Philosophy



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What Is IWRM?

- Philosophy of science is primarily concerned with the principles and processes of scientific explanation. There has long been an interest in the role philosophy can play in enriching the intellectual basis of management.
- IWRM is a philosophy in the sense that it offers a guiding conceptual framework rather than a concrete blue-print.



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What Is IWRM?

>Though there is no consensus about its interpretation in the literature, IWRM is viewed simultaneously as a *philosophy*, a process, and an implementation strategy to achieve equitable access to, and sustainable use of, water resources by all stakeholders at catchment, national, regional, and international levels.





What Is IWRM?

- IWRM seeks to operationalize Dublin principles and identifies integration both within and between two basic categories:
- The natural system which is critically important with regards to resource availability and quality,
- and the human system, which determines the resource use, pollution of the resource, as well as setting priorities for development.

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Status of Application

- The World Summit on Sustainable Development (WSSD) in 2002 called for all countries to craft IWRM and water efficiency plans by the end of 2005.
- At the end of 2005 only 20 of 95 countries surveyed by the Global Water Partnership had produced such plans or had plans well under way.







Status of Application

In 2007, the UN-Water issued a survey-based report on the global status of IWRM. In conclusion, the survey indicates that: <u>Developed Countries</u> **27** countries: only 6 claim 53 countries: only 20

27 countries: only 6 claim 53 countries: only 20 to have fully implemented countries claim to have IWRM plans; a further 10 IWRM plans under claim to have plans under implementation.







Status of Application

In 2006, CEDARE conducted a survey-based study to assess the status of IWRM application in the Arab Region. Without identifying countries by name, the study indicated that:

Sout of the 8 countries considered in the study, 3 have an IWRM action plan, 4 are in the process of developing a plan, and 1 has no foreseen specific plans.







Application Constraints

- Considering IWRM practices from a theoretical perspective, implementation challenges exhibit the gap between philosophy and practical application.
- IWRM is a sound philosophy. However, One of the major constraints is the gap between the well-defined philosophy and the fuzzy definition of operational indicators.

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ECONOMIC EFFICIENCY IWRM Conceptual Framework

SOCIAL EQUITY







Application Constraints

Identified main constraints include:

- policy-making / implementation gap
- unrealistic plans
- institutional settings
- weak coordination
- weak Stake holder participation
- transboundary watersheds







<u>Critical Assessment</u>

- In the water policy circles, IWRM has gained wide acceptance as the best way to tackle water resources management challenges.
- Most international institutions have endorsed the concept without clear evidence of improved water management practices somewhere in the world, fully attributed to the explicit use of IWRM.







Critical Assessment

- The main object of criticism is the practical value of the concept which proved to be difficult to implement.
- At a scale of 1 (being no integrated water resources management) to 100 (being full integration), it will be hard to give a score of 30 to any one activity anywhere in the world in terms of IWRM application (Biswas, 2008).

Implementation Gap



Critical Assessment

Some criticisms of IWRM

- Concept too vague, and so elastic
- Diversification of the aspects to be integrated
- Overplays win-win situations (integration)
- Process-oriented, but lacking measurable targets for goals
- Conflict between integrative approach and participatory approach

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Concluding Remarks





- In the World Bank's Water Resources Sector Strategy of 2004, it is explicitly stated that the main management challenge is not a vision of IWRM but a "pragmatic but principled approach"
- With this the World Bank appears to say that we know what IWRM is and that we now have to bring it into practice.





- IWRM should be considered more as a philosophy than as a "package of reforms"
- Implementation constraints and complexities need to be objectively and comprehensively assessed and resolved successfully before the philosophy can be considered as a universal approach to improve water management.





- It is important to note that IWRM is a process, not a product, and that it serves as a tool for assessment and program evaluation.
- IWRM does not provide a specific blueprint but rather is a broad set of principles, tools, and guidelines, which must be tailored to the specific context of the country or region or a river basin.





- Experiences in implementing IWRM should be evaluated, monitored and shared.
- This will require more work on indicators and follow-up processes that do not add an undue reporting burden on countries.
- Adaptive management can be adopted for continually improving management policies and practices by learning from the outcomes of implemented management strategies.

Selected Further Reading

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