APPROACH PAPER
IEG EVALUATION OF BANK GROUP SUPPORT FOR WATER

Global Context

Water has enormous productive and destructive potential. The geographic distribution of waters' benefits and dangers is quite uneven, however. In the temperate zones where rain falls year round in amounts that are generally manageable the relationship between human settlements and water has been a relatively easy one. In contrast, areas where rain falls in short seasons with significant annual variability have had a much harder time of it.

Economic development relies on the sustainable management of water resources; investments that protect development gains from the ravages of natural disaster; and the provision of water supply, sanitation, irrigation, and hydropower services. As the 2007 IEG publication *Development Actions and the Rising Incidence of Disasters* points out, too often water-related disaster is not the result of the vagaries of nature but rather the inevitable outcome of bad human decisions. As we approach the end of the first decade of the 21st century short-sighted investments in dangerous areas and over-consumption of nonrenewable water resources are placing the development gains of centuries at risk. Development patterns, increasing population pressure, and the demand for better livelihoods in many parts of the globe are all at least part of the cause of a steadily deepening global water crisis.

The most severe shortages and excesses of water are a source of risk and vulnerability, and their most pernicious effects are felt mainly by the poor. Over the period 1973-2006, about 3.5 billion people were affected by floods and heavy rains from tropical storms,[1] and these disasters are increasing at an annual average of (at least) 5 percent. To this we must add the increasing likelihood of climate changes that are already disrupting rainfall patterns, feeding ever more powerful windstorms and creating droughts of unprecedented severity and frequency.

Environmental issues with an impact on water resource availability include deforestation, watershed degradation, encroachment on recharge areas, increasing pollution from point and nonpoint sources, infestation of aquatic weeds, inadequate environmental flows, and drought and floods caused by climatic variation, among others. All are intensifying. Some critical industries and many freshwater ecosystems have been deprived of water essential for their survival.

Better known but also staggering are the health impacts of the pervasive lack of water supply and sanitation services. Almost 2 million children in the developing world die each year from

lack of clean water and little or no sanitation. Recent estimates are that 1.2 billion people do not have access to safe water and 2.6 billion are without access to sanitation (UNDP 2006).

Competition for water resources and contamination of them have local and regional political impacts and create the potential for conflict.

For these reasons, attention to water has always been central in the work of the World Bank Group.

Water has many dimensions, and IDA and IBRD (hereafter, the Bank) have supported countries in many water-related sectors. This evaluation will include water resources management and development (including water and environment), water supply and sanitation (WSS), hydropower, and irrigation and drainage (I&D).Water resources management and development includes the management of rivers, lakes, wetlands and aquifers. An overarching term for WSS, hydropower, and I&D is water service delivery.

Reaching International Consensus on Water

The development community has transformed its approach to water in recent years. Milestones along the way to the current international consensus on water include the Rio Earth Summit (1992) which increased awareness of the growing scarcity of water. The 1992 "Dublin Principles" (summarized in an endnote) were adopted at the International Conference on Water and the Environment (ICWE) in that Irish city.[2] The Dublin principle that water is both a social good and an economic good has been the cornerstone of follow up conferences and reports. During 1994, more than 300 civil society groups and NGOs from around the world came together to call on the World Bank Group to recognize the damage caused by large dams and to stop financing them. In response, the Independent Evaluation Group (then known as OED) conducted an evaluation reviewing 50 dams financed by the Bank (final report completed in 1995). The World Commission on Dams published its findings (in 2000) under the title *Dams and Development: A New Framework for Decision-Making.*[3] This report presented a detailed set of criteria on how to improve environmental aspects, livelihoods, health, and decision-making processes when constructing dams.[4]

The international dialogue on water continued with the Second World Water Forum in The Hague, Netherlands, in 2000. For this platform, the Global Water Partnership produced a document (titled *Towards Water Security: A Framework for Action*[5]) that called for stronger dialogue, better capacity building, and additional financial resources. A further consensus-building step was the United Nations Millennium Conference in 2000, in which the international community developed a set of powerful goals. One year later, on September 20, 2001, the World Bank Group committed itself to these goals. While the goals on poverty, hunger, and health are indirectly water-related, MDG 7 directly addresses water by seeking to halve the number of people without access to safe drinking water and basic sanitation by 2015.

In response to the Millennium Development Goals and as a follow-up of the Second Water Forum, the World Water Council and the Global Water Partnership issued a report for the Third World Water Forum in 2003 in Japan. The report *Financing Water for All: Report of*

the World Panel on Financing Water Infrastructure[6] stressed that in order to attain the MDGs, "all sources of finance should be tapped"[7] since achieving the MDGs would require a doubling of the resources allocated to the task, as well as an improvement of governance, better cost recovery, and some national public funding. More recently, the UN has called upon the development community to respond to the myriad challenges posed by misuse of water and its resulting inequalities. The years 2005-2015 have been designated the Water for Life Decade by the UN. During the 2007 Spring Meetings, the Bank Group committed itself to partner with UNDP, DFID, and other donors, to confront the crisis in water supply and sanitation.

What does the emerging consensus look like? There is broad agreement that water sectors should follow an integrated approach, integrating both between various water uses and within the broader development framework.

For water resources management, a focus has emerged on adopting the river basin as the major management unit, so as to deal with the interactions and overlaps between the various subsectors and upstream and downstream issues more systematically. Strategic solutions are sought for entire watersheds and even broader geographic areas, and they take more account of other competitive uses than in the past. There is increased awareness of the tradeoffs between different water users and the natural environment, and conservation, the promotion of rain-fed agriculture, and the elimination of wasteful uses are now more important factors in the equation. And water's role in supporting livelihoods increasingly has to be balanced with the preservation of nature, and the promotion of public health and hygiene. In agriculture, the use of crops that require less water is expected to help drier areas. And water utilities can reduce consumption by increasing tariffs, dealing with unaccounted-for water, and reducing pollution.

Similarly in irrigation and drainage, a new paradigm centered on the integration of agricultural water management within a more comprehensive development framework has developed to meet ever rising demand for food, increase farmer incomes, reduce poverty, and protect the environment—all from an increasingly constrained water resource base.

Closing the water supply and sanitation access gap is not simply a matter of investing more money. A sound governance regime includes clear division of responsibilities and lines of accountability among sector institutions. More dynamic relationships are emerging between the public sector, the private sector and civil society. Cost recovery remains a goal, but flexibility is required in determining the period of time over which to attain this goal. Sanitation requires special attention. WSS interventions have to be integrated not only with other water sectors, but also with urban and rural development.

For investments in hydropower, when they emerge as the priority alternative from strategic planning processes, emphasis is placed on multi-purpose benefits, investments that build cooperation across regional and international boundaries, and adaptability. Environmental and social issues are increasingly integrated in planning from the start, and the knowledge and management capacity for sustainable infrastructure is growing.

Evolution of the Bank's Approach to Water

Research undertaken during the late 1960s and early 1970s indicated that the most cost-effective way to improve health was to ensure an adequate supply of clean water. Robert McNamara, in his 1973 Annual Meetings Address in Nairobi, called for "assured availability of water." In response to his leadership and its improved understanding of the problem, the Bank began to increase dramatically its lending for potable water.

The International Drinking Water Supply and Sanitation Decade spanned the period 1981-1990. During that period, the Bank focused on water services infrastructure development as part of its core business. The decade saw large gains in the number of families served by a safe water supply (mostly in Asia). Little progress was made in sanitation. Irrigated areas were expanded, while dams helped to offset the results of climate variability and contributed to energy supplies. However, there was a strong awareness that the exclusive focus on infrastructure posed serious environmental, social, and financial sustainability issues.

The Bank's 1993 Water Resources Management Policy Paper moved the institution away from infrastructure development towards management. Regional water teams were created with water specialists and advisors. During the 1990s, the Bank's focus shifted toward improving the management of water utilities, irrigation, rural water systems, water resources, and land use at the microcatchment level. Under the pressure of environmental and social nongovernmental organizations, the Bank backed away from major investments in infrastructure. In addition, the private sector was expected to become a major financier in water supply and sanitation. Lending for water decreased.

With the turn of the century, the Bank began to mainstream environmental and social concerns and started balancing infrastructure and management-focused investments. In 2001 the World Bank Group committed itself to the Millennium Development Goals, one of which seeks to halve the number of people without access to safe water supply and basic sanitation by 2015. With the 2001 Environment Strategy, the 2003 Water Resources Sector Strategy, the 2003 Infrastructure Action Plan, and the 2003 WSS Business Strategy, water received more prominence—and water lending increased in the early 2000s. These various strategies move towards an integrated approach focusing on both infrastructure development and management for both water resources and water services. In recent years, the Bank's approach has also expanded to include lending on the regional and subnational levels.

Organizational Structure for Water in the Bank

Until 2006, the Bank dealt with water and sanitation issues through a number of units mapped to two networks (infrastructure and Environmental and Socially Sustainable Development, ESSD). The integration of the Sustainable Development Network in FY07 introduced one Water Sector Board, although in most regions the various subsectors are still within different units within the Sustainable Development Network. The move toward one water Sector Board is expected to ensure that social, economic, environmental, and technical dimensions are taken into account in the management and development of water resources and water services, and appropriate trade-offs made and mitigated. It is not yet clear to what

degree staff in the field and at headquarters have overcome subsectoral approaches and now look more broadly at water resources management and services.

The Bank is engaged in a number of water partnerships aiming at jointly developing new and innovative approaches to sustainable water resources management. These include the Water and Sanitation Program (WSP), the Bank-Netherlands Water Partnership Programs (BNWPP-WRM and BNWP-WSS), the GEF/IUCN/WB/WWF Partnership, the Global Water Partnership, and the World Water Council. Such partnerships with governments, the private sector, and NGOs help coordinate and complement Bank actions. Working on its own and with its partners, the Bank has been active in such issues as mitigating water crises from the local to the global level and reducing counterproductive rent-seeking behavior.

Scope and Purpose of the Study

The framework and metrics on which the evaluation will be based will track the Bank's evolving approach to increasingly integrated water resources management. These will include the Dublin Principles, the MDGs, the conclusions of the major international conferences and the 2003 Water Resources Sector Strategy, the 2003 Infrastructure Action Plan, and the 2003 WSS Business Strategy—all of which highlight a comprehensive approach to water management. Given the looming water crises confronting many of the Bank's partner countries, the rising incidence of water-related disasters, and the number of initiatives and partnerships in which it is involved, IEG will review the full gamut of water-related work over the past 10 years by activity type to see whether modifying the institutional commitment to the current integrated approach is warranted, and, if so, what guidance the experience provides for future efforts.

The evaluation will track how the nature of Bank activities have changed over time. The earlier projects are expected to be more narrowly focused, but later projects, both dedicated and nondedicated, should exhibit a broader strategic approach and obtain better outcomes as a result. The evaluation, by definition, is retrospective, but it will seek to identify changes that will be necessary in the future, including those related to institutional and financial sustainability.

Like several studies conducted over the past few years (on natural disasters, social development, and cultural heritage), the main analytic approach of the study will be the analysis of *the full universe* of Bank-financed or administered water activities from 1997 to the present. Preliminary work has identified more than 1,900 projects approved or completed over the past 10 years (including GEF) that have at least one water-related component. For each water-related issue to be evaluated, all relevant projects will be included in the analysis. Of course, different subsets of the 1,900 projects will be relevant to each different issue: a review of rural water supply experience would only look at the projects that were implemented in rural areas, and so on.

While most of the (about 850) already-closed projects—the only ones for which the results are knowable—do not fully follow the emerging integrated approach, an analysis of past experience, and particularly the efficacy of the various permutations of water-related work can be expected to be instructive. Stated differently, the study will examine what happened to project outcomes as activities became increasingly integrated within the water practice and the mainstreaming of specific water issues took place in other sectors. And it will also look at the

various possible combinations of activities to compare the results of each particular combination. It is anticipated that such a review will identify areas where the Bank typically performs very well and conversely. While a great deal is known about the technically correct approach that should be used in water-related projects, a review of Bank experience done with such thoroughness will show what works when the Bank is involved. This is the contribution that the IEG evaluation will make, and it is unprecedented in its comprehensiveness in this thematic area.

As the commitment to water resources management and water services is largely a concern for IDA and IBRD, they will be the primary focus of the evaluation. Nonetheless, certain evaluation activities will be coordinated with IEG-IFC to ensure more complete coverage of the Bank Group. An IEG-IFC team will provide inputs that evaluate IFC's experience with water investments.

Evaluative Questions

The study team will examine the effectiveness of the full universe of World Bank-financed or administered water activities to answer the overarching question: what has been the development impact of increased attention to water resources management and water services? Second order questions related to the standard IEG criteria are as follows:

Relevance

- What has been the impact on the Bank's work of the evolving international consensus on water? And what has been the impact of the Bank on that consensus?
- Is the Bank response to new challenges, such as pollution, water scarcity, climate variability, urbanization, and decentralization appropriate in strategy and scale?
- Has a water resources management approach helped in deciding on tradeoffs for water resources allocation, including those between agricultural uses of water (the largest user worldwide), the natural environment, and other competing uses?

Efficiency

- To what degree have the design and implementation of water-related projects balanced costs and benefits?
- What lessons can be drawn from the Bank's experience with cost recovery for various water services (e.g., irrigation, water supply, hydropower, environmental services)?
- What lessons can be drawn for the Bank's experience to help improve the efficiency of public utilities, including, but not limited to, the use of private sector participation, and pricing?

Efficacy

- Are changes in practice needed within the Bank and at the country level as the Bank continues to move toward more integrated approach for water resources management and water services?

- To what degree are the Bank's (broad-based and poverty-targeted) water resource management and water services interventions successfully addressing the needs of the poor?
- How are water-related issues dealt with in the context of important Bank and borrower planning processes such as the CASs and PRSPs? What do the CAEs show about the relationship between actions and intentions?
- To what degree does project experience follow the strategic move toward the IWRM approach? Are there circumstances when this approach should not be followed?
- Has donor coordination been effective in all water-related sectors? Within global and regional partnerships? Why?

Methods and Instruments

The study has been designed to use triangulation: each evaluative question will be answered by three or more methods or data sources (see the Design Matrix in Annex 1). The components of the study are described below:

Review of the Portfolio

The study will conduct an issues-based portfolio review. The study team will first identify all projects from exit fiscal year 1997 through to the present. Project documents and files will be reviewed, as will the data collected for recent and ongoing IEG evaluations. Team members will extract material from a number of internal electronic resources.

Development of an Interactive Database

A Microsoft Access database that draws on all the available quantitative and qualitative information for water-related projects will be developed. It will be capable of responding to queries regarding the results of all completed projects and of comparing these results with project characteristics. It will be used to determine the degree to which objectives were attained, identify factors associated with success and failure, and compare highly successful and highly unsuccessful projects to determine whether the strategic approaches taken are different in discernable ways. For ongoing projects it will be capable of analyzing the evolution in the nature of project activities down to the component level. Water-relevant lessons learned as identified by self-evaluation (ICRs) and independent evaluation (PPARs) will be disaggregated and recategorized to determine areas of strength and weakness, and whether practice needs to be modified in certain activity areas. The relationship of the active portfolio with the identified success factors will also be analyzed.

Review of Other Donors' Experience

The study will identify impact evaluations dealing with water, including work on the health impacts of water supply and sanitation, and other evaluative work in the public domain to see if the lessons from other donors' experiences are qualitatively different from those of the Bank Group. Other agencies may have highly relevant experience in some relevant thematic areas where the Bank Group is only beginning to become involved and therefore has little experience to offer. The study will examine how far other donors have moved toward an integrated approach to water resources management and water services issues. And donors

will be asked about their perceptions of the Bank Group's water-related work and its strategic and intellectual approach. Donor project results also will be reviewed to identify the ways in which more integrated coverage of water resource management issues enhance and constrain results.

Individual Interviews and Surveys

Throughout the course of the study open-ended interviews will be conducted within the Bank Group and with key informants on the outside. Bank Group staff in the various water subsectors will be surveyed. Various surveys of water users groups previously have been done and these findings will be incorporated. Should more information be required, appropriate instruments will be developed and used during the field work (described below).

Meta-Evaluation

The study will draw on evaluation findings from previous IEG studies on water-related themes. It will also examine sectoral and thematic evaluations and impact studies carried out by bilaterals, NGOs and other donors, as well as work conducted internally as part of a self-evaluation exercise or analytic work (see Annex 3). In other areas where it will not be practicable to do original evaluative research, the available evaluative evidence will also be reviewed.

Issue Papers and Case Studies

The study will prepare at least 15 issue papers that sift through the relevant experience to answer the major thematic/strategic questions facing the Bank (see Annex 2)8. To ensure that the study findings are relevant to current concerns and that the lessons identified will be used, the issues to be analyzed were determined in consultation with the Water Anchor and shared with the Water Sector Board. The more operationally relevant issue papers will be published as stand-alone evaluations or shared with sector colleagues as presentations. Themes already identified may be supplemented by others not yet identified if analysis reveals that certain unanticipated issues arise frequently in Bank projects. Issue paper topics will be omitted if the data is inconclusive or not available.

Case studies will be generated by field work and desk reviews. They will have a dual purpose: first, to compare work (both Bank-financed and conducted by other agencies) that is adequately integrated with earlier more narrowly focused approaches. The field research will look at factors associated with success and failure at the project level, and assess the overall contribution of the totality of Bank work in light of country needs and priorities. A additional purpose of the case studies is to "reality test" the results of the evaluation's desk review of over 1,900 projects. There will be five field case studies.

Criteria that will be used for selecting case studies are:

- Countries identified as major borrowers for water in the portfolio review
- Projects that cover innovative approaches or that deal with water issues in a particularly comprehensive way

- Countries/projects that cover issues deemed likely to be of increasing importance to borrowers. These might include: country ownership, water scarcity, transboundary issues, flood control, climate change adaptation, multi-country watershed treatment, public-private partnerships, water infrastructure, water trade, and/or complementarities with transport infrastructure
- Representation of a broad array of regions and environmental conditions
- Projects or programs that involve cofinancing and coordination with other donors in global and/or regional arrangements
- Ease and access during season of visit and reasonable travel time.

Countries tentatively identified for possible case studies include Argentina, Brazil, Colombia, India, Indonesia, Morocco, Senegal, Tanzania, Uzbekistan, and Vietnam. Following further research, five of these countries will be selected for field research. In addition, desk cases will be prepared on several other countries, including ones on China and Yemen using data collected by 2006 IEG missions to those countries that covered a broad range of water-relevant topics.

Advisory Panel

A group of external advisors will be established to advise the study team during the evaluative process. The Panel will consist of 3-4 internationally recognized water experts and practitioners who will comment on the ongoing research and early drafts of the various intermediate outputs. The Panel will review and provide written comments on the final report.

Dissemination

Emerging findings will be shared with task teams and the Sector Board throughout the duration of the study. Research conducted during the study is intended to support operational staff by feeding into the Sector Strategy Implementation Update. Following the completion of the study, there will be dissemination events not only in the Bank Group's headquarters in Washington, DC, but also in Regions with a strong interest and a large portfolio in water. A website will be set up to disseminate the study findings. In addition, interactive sessions on specific topics will take place upon request from country offices through teleconferencing.

Timetable

A final report that summarizes the work undertaken in the components described above will be prepared for CODE discussion early in FY2010. In preparation for the CODE discussion, IEG will produce a draft report by March 2009.

Table 1. Timeline

Initiation	July 2007
Approach Paper Sent to CODE	December 2007
IEG Management Review	May 2009

Report Sent to Operations Manager	July 2009
Report Sent to CODE	September 2009
CODE Meeting	Sep-Oct 2009

Budget

The study budget will be $750,000 (of which $350,000 in FY08; $350,000 in FY09, and $50,000 in FY10). This will cover staff and consultant salaries, travel, and the cost of the Advisory Panel. In addition, funding from trust funds will be sought to cover the cost of dissemination activities.

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[1] EM-DAT: The OFDA/CRED International Disaster Database, www.em-dat.net - *Université Catholique de Louvain* - Brussels – Belgium.

[2] They are as follows: Principle No. 1 – Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment. Principle No. 2 – Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels. Principle No. 3 – Women play a central part in the provision, management and safeguarding of water. Principle No. 4 – Water has an economic value in all its competing uses and should be recognized as an economic good.

[3] World Commission on Dams (2000). *Dams and Development: A New Framework for Decision-Making. Report of the World Commission on Dams*, Earthscan, London.

[4] The World Bank issued a position on the report of the World Commission on Dams on December 13, 2001. The WRM Sector Strategy summarizes the WB position as "The World Bank is committed to support its borrowers in developing and managing priority hydraulic infrastructure in an environmentally and socially sustainable manner. In doing this the Bank believes that the WCD "core values" and "strategic priorities" are appropriate principles which are consistent with current Bank practice and policies. The Bank will not, however, as advocated by the WCD Report, comply with the twenty six guidelines. Rather, the Bank will continue to work with its borrowers in effective implementation of current World Bank operational policies, which the WCD describes as "...the most sophisticated set of policies, operational procedures and guidelines amongst the international donor community."

[5] Global Water Partnership, (2000). *Towards Water Security: A Framework For Action*. Global Water Partnership, Stockholm.

[6] Camdessus Panel. 2003. *Financing Water For All: Report of the World Panel on Financing Water Infrastructure*. World Water Council and the Global Water Partnership. http://www.financing waterforall.org.

[7] Retrieved on October 18, 2007 from: http://www.irc.nl/page/27805.

[8] Provided the availablity of the recent IEG evaluation Agricultural Water Demand (Ten Years of World Bank Assistance, 1994–2004—Water Management in Agriculture (2006)), no background papers are proposed in the irrigation and drainage subsector.

Annex 1

Design Matrix

Evaluation Questions	Instruments*					
	PR	DB	FS	IP	SI	DM
What has been the impact on the Bank's work of the evolving international consensus on water? And what has been the impact of the Bank on that consensus?		X	X	X	X	X
Is the Bank response to new challenges, such as pollution, water scarcity, climate variability, urbanization, and decentralization appropriate in strategy and scale?		X	X		X	
Has a water resources management approach helped in deciding on tradeoffs for water resources allocation, including those between agricultural uses of water (the largest user worldwide), the natural environment, and other competing uses?			X	X	X	X
To what degree have the design and implementation of water-related projects balanced costs and benefits?	X	X	X	X	X	
What lessons can be drawn from the Bank's experience with cost recovery for various water services (e.g., irrigation, water supply, hydropower, environmental services)?	X	X	X	X	X	X
What lessons can be drawn for the Bank's experience to help improve the efficiency of public utilities, including, but not limited to, the use of private sector participation?	X	X	X	X	X	X
To what extent are changes in practice within the Bank and at the country level needed as the Bank continues to move toward more integrated water resources management?	X	X	X	X	X	X
To what degree is the Bank's (broad-based and poverty-targeted) water resource-related and management-improvement support successfully addressing the needs of the poor?	X	X	X	X	X	X
How are water-related issues dealt with in the context of important Bank planning	X	X				X

processes such as the CASs?						
To what degree does project experience follow the move toward IWRM approaches that have been advocated by the Bank?	X	X	X	X	X	X
To what extent has donor coordination been effective in all water-related sectors? Within global and regional partnerships? Why?	X	X	X	X	X	X
What changes in practice within the Bank and at the country level are needed as the Bank continues to move toward more integrated water resources management?	X	X	X	X	X	X
To what degree are the Bank's (broad-based and poverty-targeted) water resource-related and management-improvement interventions successfully addressing the needs of the poor?	X	X	X	X	X	X

*PR: Portfolio Review; DB: Interactive Database; FS: Field Studies; IP: Issue Papers; SI: surveys and interviews; DM: Desk Studies and meta-evaluation

Annex 2

Potential Issues Papers for the IEG Water Evaluation

Water resources management

International/ transboundary water institutions	International basins require international treaties and institutions that regulate how waters are being used and protected. The Bank has a long history of involvement at the supranational level. Issues: • Level of financing (where, what) • Instruments (including nonlending) • Evolution of approaches • Models for institutional arrangements and their sustainability
River and lake basin organizations	River basin organizations long have been a pillar of good international water resources management approaches. Issues: • What is the scope of mandate of these organizations? • How deep and how successful has been the Bank's engagement with clients? • How many countries has the Bank helped to set up river and lake basin organizations? • How successful and effective have they been? • What kind of sustainability issues have been encountered? • What factors are relevant to ensure their success? • How strong are they?
Urban water management	Good water management is important for a successful city. It entails a number of aspects (flood protection, urban drainage, wastewater collection and treatment, watershed management) that are scattered among different sectors in the Bank. Issue: • What has the Bank done and how successful has it been in supporting cities/central governments to improve urban water management?
Hydrological and meteorological monitoring	Effective water management requires good data. The Bank has traditionally helped countries invest in equipment and knowledge to monitor hydrology and meteorology. Issues: • Level of financing (where, what) • Evolution of approaches
Floods	Protecting people against the potential threat of floods and smoothing water availability over the year is an important goal of water lending. Issues: • Lending trends over time (volume, geographical, lumpiness) • Is the Bank proactive or reactive? • What analytic work has been done to determine needs for a minimum infrastructure platform?
Droughts	Protecting people against the potential threat of droughts and smoothing water availability over the year is an important goal of water lending. Issues:

	• Lending trends over time (volume, geographical, lumpiness) • Is the Bank proactive or reactive? • What analytic work has been done to determine needs for a minimum infrastructure platform?
Dams and reservoirs	Dam and reservoir projects improve water supply for irrigation and households, provide power, mitigate floods, and can help manage the complex web of water uses. They can also play an important role in climate change as a tool to help countries to adapt and reduce fossil fuel consumption and its associated environmental effects. The World Bank supports investments in dams when they emerge as the priority alternative from strategic planning processes for decisions concerning water and energy. Issues: • Lending volumes (where, what for)? • Evolution of approaches • How have new approaches related to options assessment, environment, social practices and stakeholder involvement been integrated? This could be applied to any category, as well)
Groundwater	The issues paper would synthesize Bank experiences in groundwater development and management, including a review of information available on current experiences of groundwater governance in countries supported by the Bank so as to draw lessons from good and less successful models. The paper would seek to differentiate between the differing policy and information needs and their geographical level (regional/transboundary, national, local). The issues paper will identify the unique nature and characteristics of groundwater, emerging issues related to groundwater and the best practices, threats, and knowledge gaps regarding groundwater governance. Issues: • Institutional arrangements – from community organizations, basin or aquifer management agencies, regulatory institutions including sustainable financing and depth of the professional resource (technical and administrative skills). • Policy development – not only groundwater considerations but relevant cross-sectoral and interacting policies and legislation on land management, environment, food, and energy. • Information provision – for informing management decision making and support to the local community, local users and their political representatives. • Resource monitoring – investment in monitoring systems and ability in assessing the effectiveness of management measures, to adapting management strategies to new circumstances – e.g., climate change and conjunctive operations with surface waters.
Water quality management	Water quality management is central to integrated water resources management. Bank support has focused on point-source pollution (such as municipal wastewater and industrial wastewater), and little attention has been given to non-point sources (from agriculture, urban runoff, poultry and livestock operations, mining operations, etc.). The topics to be considered under assessment and protection could be: water quality standards, monitoring network design, sampling and analysis methods and

	procedures, processing, interpretation and presentation of data, water quality management programs and financial, legal, and institutional frameworks for water quality management. Other point-source controls to be addressed could be pollution control from industrial sources. The topics to be considered under non-point sources of pollution could include: identification of non-point sources, the consequences, severity, and degree of non-point sources of pollution, the elements of non-point source management, monitoring and assessment of non-point source controls, and integrated approach to non-point source pollution control.
Rivers and lakes	Over the years the Bank has financed investment to regulate and manage rivers, to restore and protect them and their environments, to invest in rivers and lakes as transport networks, etc. Issues: • Level and means of financing in rivers and lakes • What is the Bank's approach to river and lake development and management and how does the Bank deal with tradeoffs (development/ environment)? • What does the Bank finance (works, monitoring systems, technical assistance, etc.)?

Water supply and sanitation

Wastewater treatment and sewerage	Sewerage and wastewater treatment has seen a high volume of lending. Additional structured knowledge is needed to determine how the Bank finances collection systems and waste water treatment plants, and what the outcomes are. Issues: • what can we learn about the magnitudes, sustainability and impact of Bank funding spent on WWT plants? • Level and means of financing • Mechanisms developed to finance capital costs and operation and maintenance, including subsidy schemes • What does the Bank finance (technology, size of cities, size of installations)? • What kind of economic/financial analysis does the Bank do for waste water components/projects? • Sustainability (do the waste water treatment plants work?) • Is impact (water quality improvement, environmental improvements, health benefits) measured in projects (at entry and ex post)? If so, how is it measured?
Public WSS utility (SOE) reform	Public utilities provide (or not) water supply and sanitation services to the majority of people around the world. The Bank's strategy on public/private has evolved from strong public focus until the early 1990s to private sector participation in late 1990s to a balanced full-spectrum approach in early 2000s. Lending trends have changed less dramatically than strategy, but it is important to understand how much and how the Bank has supported public utilities in the past two decades. Issues: • Lending trends over time (percent of lending going to state-owned enterprises)

	• Approached used to aid public utility reform (conditionality, technical assistance, capacity building) • Success of various approaches and success factors
Decentralization and WSS	The major transition of most WSS utilities in the 1990s has not been from public to private operation, but from centralized to decentralized public provision. Decentralization changes the dynamic of Bank engagement with clients. Issues: • Share of lending channeled to decentralized WSS utilities over time (patterns) • Is the Bank proactive or reactive in decentralization? • How does the Bank reach out to municipalities? • Use of performance-based intergovernmental transfers or other ways of making use of new competition between municipalities • Is the Bank reaching poor municipalities? • Capacity building of local utilities and municipalities (the above can either be looked at only for urban WSS, only for rural WSS or both)
Subsidies for basic sanitation	To what degree have subsidized on-site sanitation facilities (latrines) been used and what is their impact on demand? Do other households wait and see if a subsidy will also come their way? Do hardware subsidies for on-site facilities create a perverse incentive for Bank clients to borrow for off-site technology (sewerage) that can be subsidized with Bank loans? Issues: • What is the Bank experience regarding subsidies? What is the range and experience of policies on sanitation subsidy? • Do Bank projects finance hardware subsidies for on-site sanitation (patterns urban/rural, geographical, what level)? Is a rationale for level of subsidies provided? • Do subsidy levels determine outputs (number of latrines built) and outcomes (latrine use)?
Hygiene education	A review of Bank experience would catalog those projects where the issue has been addressed, and identify relevant lessons and level of resources that have been allocated for hygiene promotion/hygiene education/health education.
WSS in non-dedicated projects	About half of the lending for water supply and sanitation services is done through nondedicated projects and the percentage has grown over time. A 2006 QAG review looked at 29 nondedicated projects and found that the quality of their WSS activities did not measure up to the standards of Bank projects in general. Issues: • How has nondedicated lending evolved (how much, which subsectors, which Regions)? • What is the quality of the outcomes from that lending?
Cost recovery in WSS	Cost recovery has been a pillar of Bank infrastructure policies for decades. The 2003 Infrastructure Action Plan recognized that cost recovery is not always possible in the short term—especially in the water sector. A recent review of WSS subsidies shows that the most commonly used form of subsidy (increased block tariffs) is regressive in nearly all

	cases. Bank approaches to increasing cost recovery have evolved from strict (but often not enforced) conditionality in the 1980s to technical assistance and policy support in the 2000s. The study will do an updated review of the Bank's approaches and whether they have worked.
Private sector participation in rural WSS	A major challenge for developing countries to achieve the MDGs is finding ways to provide sustainable WSS in small towns and rural areas. While providing more investments to increase access is crucial, it is also important to improve the management of rural water systems, including by promoting local private operators' participation. Issues: • What did the Bank do in that respect? • What lessons can be learned from successful cases? • What is good practice in this area?

Water for energy (hydropower)

Hydropower	The Bank has invested in hydropower projects in the past. Such projects underwent intense scrutiny in the 1990s. What has happened with this type of lending recently? Issues: • To what extent have hydropower projects been initiated/driven by energy/water resources/other sectors? • To what extent do projects explicitly address water resources and energy components jointly, and has this changed over time? (Side question: how do TTLs code these projects, in the absence of a code for hydro?) • A review of large dams was undertaken in 1996 (report number 15815). Updating of tables 1, 2, 3, 4, and 5 from the annex (on basic facts, economic costs, value of generation, value of other benefits, incremental cost of resettlement) plus cost of environmental components (preparation, environmental management plans, implementation). • What are sample preparation and supervision budgets (absolute and as a percentage of project costs)?

Water for environment

Environmental flows	The process of determining water needs for ecosystems and communities dependent on them is termed environmental flow assessment (EFA). Three water resources and environmental technical notes have been prepared to cover environmental flows (a) concepts and methods, (b) case studies, and (c) flood flows. With the support of BNWPP, at least 14 Bank operations have started to incorporate EFA more systematically in decision making. Issues: • What are the recent and ongoing experiences in EFA (could look at projects such as the Tarim basin, Little Aral Sea, Lesotho Highlands Water Project, Lower Kihansi project, Mekong River Water Utilization Project, on-going ESW on environmental flows, etc.).

	• What are the lessons of practical implementation for more systematic integration of EFA in water resources planning, design, and operational decision making?
Coastal management	Half of the world's population lives within 60 kilometers of the coast. Coastal and marine resources management focuses on resources and human activity within the land-water interface along coastal regions of the world. Issues: • Level and means of financing for coastal management • What does the Bank finance? • What kind of economic/financial analysis does the Bank do for coastal management components/projects? • Does integrating along the coast delink the coast from the hinterland: connection between coastal management and fresh water resources management?

Cross-cutting/process-oriented

Preparation and supervision budgets	Water projects are technically, institutionally, and politically complex. It is no surprise that preparation and supervision is often costly and preparation periods are long. The practice of Bank regions to allocate standard (annual) amounts for preparation and supervision cannot always cover full costs. Issues: • Preparation and supervision costs over time • Preparation length over time • What other sources (and how much) do Task Teams use outside Bank Budgets allocated by country unit? • What is the degree of dependence on trust funds to ensure quality projects?
Trust fund alignment to Bank lending	The Bank manages a number of trust funds in the water sector. The Water and Sanitation Program is one of the oldest and largest global programs of the Bank. Financing has varied between $10 and $35 million per year in the past 15 years. Other trust funds include the Bank-Netherlands Water Partnership Program (water resources management), the Bank-Netherlands Water Partnership (water supply and sanitation), PPIAF, and GPOBA. Issue: • How do trust funds support and align themselves with Bank operations and staffing?
Results measurement	Measuring results has become increasingly important in the past few years. Issues: • How has the Bank dealt with this over time in the various water and water-related sectors? • Use of indicators in the preparation stage (including consistency) over time • During the supervision and evaluation stages, are data gathered (including baselines) to implement results measurement foreseen during preparation?

Water in Bank strategies	Water figures significantly in CASs and PRSCs. Country Water Resources Assistance Strategies have been developed for about 20 countries. Public expenditure reviews (PERs) are important to understand public financing in a country and hence are important building blocks for strategy development. PERs also influence Bank priority setting. Issue: • How are various water-related sectors covered in strategic documents, and how does that change over time?

Annex 3

Focus of the Meta-evaluation

Previous IEG studies on water-related topics have been more narrowly focused than the proposed evaluation. Those evaluations include *Rural Water Projects* (2000), *Rural Water Projects: Lessons from OED Evaluations* (2000), *Bridging Troubled Waters: Assessing the Water Resources Strategy Since 1993* (2002), *Efficient, Sustainable Service for All: An OED Review of the World Bank's Assistance to Water Supply and Sanitation* (2003), and *Ten Years of World Bank Assistance, 1994–2004—Water Management in Agriculture* (2006). In addition, an IEG study on regional programs covers the Bank's regional approach to water management, and studies deliverable this calendar year (2007) will cover weather-related disasters and the natural environment, shedding further light on water-related problems.

Significant self-evaluation and policy research activities have accompanied the renewed Bank commitment to water. In recent years, the Bank produced important papers in all water-related subsectors. In the Water Supply and Sanitation subsector, the Bank published *IDA at Work: Sanitation and Water Supply* (2007), as well as *Utilities Reforms and Corruption in Developing Countries* (2006). In the Water for Food subsector, the Bank published *Reengaging in Agricultural Water Management: Challenges and Options* (2006). With respect to Water Resources Management, the Bank published the reports *Watershed Management Approaches, Policies and Operations: Lessons for Scaling-Up* (2006) and *Comparison of Institutional Arrangements for River Basin Management in Eight Basins* (2005). Other studies covered topics such as sea-level rise (2007), fisheries and aquaculture (2005), water and electricity subsidies (2005), the forest-hydrology-poverty nexus (2004), the human right to water (2004), groundwater quality (2002), sanitation and hygiene (2005), economic regulation of urban services (2007), water and sanitation impact evaluations (2006), international water and sanitation cooperation (1998), on-site sanitation (1999), World Bank lending for large dams (1996), large-scale rural water and sanitation (1997), and small-scale water supply and sanitation services providers in Latin America (2007), among others.