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Integrated
river basin
Management
From Concepts to Good Practice

Briefing Note 3

Organizational Planning for
a River Basin Organization

Setting the direction, defining the priorities, planning the actions, monitoring the results

This note is one in a series explaining the attributes and practical application of integrated river basin management. The purpose of the Briefing Note series and the issues and aspects that are covered are outlined in the mini-guide.

This note discusses:

- The planning and management necessary to address the mandate and the priority issues
- How to set strategic direction, priorities, and action plans
- How to monitor results.



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Introduction

River basin organizations are involved in two forms of planning:

> **Organization planning.** Goals and objectives are set to meet the requirements spelled out in the regulations or defined by the “owners” of the organization. Priorities, strategies, and action plans are developed with the aim of achieving these goals and objectives. Business planning is done to match budget and financial resources with the strategies and action plans developed earlier. This work is known as *organization strategic planning*: setting the direction, defining the priorities, planning the actions, and monitoring the results. The output from this work is a highly focused and effective basin organization.

> **River basin planning.** Water-related development opportunities are investigated, along with the acceptable impacts on the natural resource base of the basin (its environmental quality) and the social aspirations of its peoples. This type of planning resembles the water master planning frequently undertaken in the past in developing countries but nowadays with perhaps more emphasis on the sustainable aspects of resource use and management. The output from this planning is a River Basin Integrated Water Resources Plan or a Basin Sustainability Development Plan.

Note 3 deals with organization strategic planning. Note 7 covers the approaches to river basin planning.

Many terms or expressions are used to describe the various components of a planning process. Interpretations of the terms may vary from country to country. A glossary at the end of this Briefing Note explains the main terminology used here. Items discussed in the glossary are underlined below. Readers are encouraged to review the glossary before studying this note.

How Can Strategic Planning be Carried Out?

Strategic planning for an organization is a management tool used almost universally in developed or industrialized countries by public and private sector organizations. It is an ongoing process of setting goals and policies, plans for achieving those goals within a specified time frame, and measuring results through monitoring and reporting. The process is periodically repeated, incorporating the results from the monitoring process and any policy changes that might impact the organization.

The strategic planning process identifies the purpose and goals of an organization, its key areas of operation, its objectives, and major strategies for achieving those objectives. The organization's strategic plan makes these things explicit, so that management and staff, as well as **stakeholders** external to the organization, can understand what the organization has been set up to do, where the organization is going, and how it undertakes its business to achieve its objectives. In this way, people can decide whether it is achieving its goals and responsibilities, as defined in its regulations.

The planning process can occur in different ways, but would generally follow a basic set of principles:

- Review the creating or enabling legislation or regulations to list clearly what the organization has to do, by when, and how it is required to operate
- Review the policy framework within which it must exist: that is, the national and provincial/regional objectives, goals, and aspirations that would influence what it can and must do to comply with national goals
- Define simple mission and vision statements that are consistent with the national goals and the regulations. These should clearly state, in one sentence, just what the organization exists to do (its *mission*) and how and what it intends to do to achieve this (its *vision*).

- Identify the major objectives for water resources management (or natural resources management, if this is its role) in the basin, that are consistent with its responsibilities
- Identify the resources and action programs that will enable the objectives to be met, and set priorities that will enable targets to be reached within the required time frames
- Gain agreement to the programs, and an appropriate budget to achieve the programs
- Develop benchmarks or *sustainability and development indicators* for measuring the performance of the basin organization and the water resources management planning system.

The organization must carry out the planning tasks with the participation of all the member-states, provinces, or government administrations that collectively make up the organization. Other interested groups living or operating within the basin must also be involved in the planning process, as appropriate, as based on the social and political characteristics of the country.



What is the Planning Process?

The planning process should proceed as a logical progression of steps.

1. Review the national and state/provincial objectives, policies, and goals to establish the policy framework in which the organization must operate, and clearly review the organization's regulations. Define a clear mission statement of what the organization exists to do, or why it has been set up.

2. Develop a vision statement: what it intends to do and how it will achieve its goals. For example: "By 2005, the organization will have achieved clean, healthy, and productive rivers throughout the X basin, by following a set of strategies and actions developed through a participative and consultative set of processes involving all levels of stakeholders in the basin."

Such an agreed vision statement facilitates the development of a series of strategies and action plans, and their prioritization. It also allows the organization to continually check that its programs are aligned to achieving the vision.

3. Concentrate on **Key Result Areas**. To better focus activities toward achieving this vision, the organization will need to concentrate its efforts in a limited number of key result (or priority) areas (KRAs) where it simply must succeed, such as water quality, water sharing or quotas, data collection, systems and models, consultation and participation processes. KRAs - usually no more than six - should be chosen and the objectives for each defined, as well as what should be achieved in each KRA over a specified time period.

4. Develop medium- and long-term strategies in each KRA to guide the development of short-term and medium-term (say, three-year and six-year) actions or projects to achieve the objective of the KRA.

5. Develop annual and longer-term (say, three-year) action plans (or work programs) that flow from the strategies and link these to business plans that identify sources of funding,

likely annual budget estimates, and other necessary factors.

6. Analyze the human resource or the skills base of the organization to assess the capability to deliver the short- and medium-term outputs. Develop training or outsourcing programs to utilize consultant skills and link costs to business plans.

7. Establish a performance monitoring system with publicly reported indicators. This tests whether the strategies and actions are realizing the vision and goals.

8. Continuously link this monitoring back into the annual planning and budgeting process. That is, "loop" back through the planning cycle, through annual workshops, to ensure the national policy framework has not changed, and that the organization's objectives and priorities are still relevant.

This process is shown visually in figure 3.1

It is not critical that all these steps happen in the precise sequence shown in the diagram and outlined above.

Indeed, some steps can occur simultaneously. However, it is important to obtain agreement for the overall process and at certain stages of the process so that all people and levels in the organization are synchronized and to ensure that the main stakeholders are appropriately involved in the process.

The planning process and the mission statement and vision statements should be initially agreed to by the senior technical officials, such as the Board of Commissioners. Agreement by the top-level agency (normally the Ministerial Council or standing committee) should then be sought, preferably together with agencies of the organization's partners (Steps 1 and 2).

Next, extensive discussions would be held between the planning team - which normally comprises technical staff from the office of the basin organization and the state/provincial agencies - and the main stakeholders to assess what

figure 3.1

PLANNING PROCESS FOR CREATING AN EFFECTIVE AND EFFICIENT RBO



should be the high priority Key Result Areas and what strategies should be adopted to guide work programs developed for these KRAs so as to achieve the organization's vision and goals (Steps 3 and 4).

Short- and medium-term work programs, presented as a range of options, would then be developed, again in wide consultation with the relevant basin agencies. These would be presented to the higher executive levels of the organization for debate, modification, and approval (Step 5).

This step is very important, as the business and financial/budgetary scenarios are discussed in this stage. There is little point in obtaining approval for a comprehensive work program if there are insufficient funds for execution. At this stage, tough decisions of matching probable funding with an achievable work plan must be made and nearly always result in a program reduction, simply because the funds available are not adequate to support the level of work proposed by the technical planners.

Notes 11 and 12 deal with annual or short-term financing issues, as well as longer-term issues relating to river basin sustainability. It is important to link all possible funding sources to the work programs so that the executive level of the organization can debate these options and make balanced decisions prioritizing the work programs in line with likely available funds. At this stage, the executive must consider whether the preferred funding-work program package will in fact move the organization at an acceptable rate toward achieving its vision. If not, questions as suggested below must be asked:

- Is the vision simply unattainable? If so, should its content be adjusted or is a longer time frame necessary for success?
- Is the vision correct and appropriate? If so, how can more funds be obtained to help in its achievement?
- Should a lower cost package of work programs be adopted, focusing initially on the primary aspects of the vision? Is it acceptable to achieve only parts of the vision, bearing in mind that often a half healthy river basin is not much better than a very unhealthy one?

A vision that is developed through limited consultation and participation and is not supported by adequate funds, realistic work programs, and skilled resources is rarely more than an unachievable dream.

This statement applies not only to the vision but to the entire planning process: in particular, for the specification of the KRAs and the related three-year and annual action plans. Unless this is a highly participative process that achieves ownership by all parties, then output and performance toward achieving the vision are likely to fall well short of expectations.

Notes 12 and 13 cover the approaches for achieving a high degree of awareness, communication, and participation in integrated river basin management. This process starts with the strategic planning process. If all the basin partners sign on to an agenda that has been arrived at through appropriate input and participation by the basin's stakeholders, then good performance toward achieving the organization's vision is more likely.

It is better to have an agreed vision and less-than-optimal programs than great visions and plans prepared by external consultants that are not really accepted by the basin partners because they did not participate properly in or own the planning process.

Steps 6 to 8 are really internal stages for ongoing good management of an organization. If the human resource capability assessment and subsequent training program show that the organization will not have the skills to deliver the outcomes set by the planning process, then the executive levels of the organization (ministerial council, Board of Commissioners, and others) must be advised. This gap may warrant adjustments to the previously agreed outcomes or perhaps recruitment of external consultants to fill the identified skill deficiencies.

A successful basin organization requires high levels of coordination and consultation, as well as access to expertise (either internally or externally) in all aspects of integrated natural resource planning and management.

The steps described above apply generically to all organizations. Procedures may vary, as each organization will have different policy and legislative frameworks within which planning must be undertaken. In addition, other issues or steps in the process that may need to be included to cater to the particular characteristics of each organization or river basin. Some of these might be:

Options analysis. Similar but more in-depth process of Steps 3 and 4. This becomes important where governments may have strong, long developed, and different agendas or priority investments (often developed without consideration for optimization across the basin). Once the basin-wide perspective is brought to the center, it becomes very important that the principle of options analysis is accepted, since there will most likely be trade-offs and efficiency gains (and benefits that will need to be shared) from the basin-wide approach. The principle of options analysis is therefore key for international river basins but also in some national basins.

"Bundling" of investments or benefits. The options analysis will make it clear that not every country in the basin needs, for example, its own hydropower installation, and that efficiencies can be gained from coinvestments or through bundling investments. At the same time, political realities dictate that each riparian nation benefits from cooperation on the river basin. The notion of bundling of investments and benefits can therefore be a powerful driver in this regard. A good example of this is the sharing of benefits from infrastructure development that is emerging in the Senegal River Basin. It is also important when building infrastructure to be clear about the geographical area that it is going to serve and who the beneficiaries will be.

In the Senegal case, the conventions that were put in place to define the Status of the Common Works and their modalities for financing provide useful lessons about establishing the interests of member-states right from the beginning.

Acknowledging the hydropolitical reality. To plan and strategize in the absence of an understanding of the political context in which the river basin is managed is to plan and strategize in the dark. Water management is intensely political. While technical approaches are useful, many well-meaning donors have worked for decades with RBOs, but have consistently failed to make any impact. In large part, this is due to the fact that both the RBO and the donors have failed to recognize and deal with the political aspects of river basin management. This reemphasizes the importance of obtaining the highest level of endorsement throughout the planning process.

How to Set Values and Build the Culture for a RBO?

All the planning and setting of priorities, targets, and milestones will be rendered ineffective if they are not coupled with explicit explanation of how the organization is to undertake its work. Without some guidance regarding how staff are to operate and manage the business, uncertainty will be very high. Some matters will be left to individual interpretation and thus may lack consistency. Examples include the degree of consultation and participation with key stakeholders, and the standards for the technical quality of the work (whether it should be of high quality over a longer time frame or lower quality with quicker results). These organizational management matters are addressed in Note 15.

An uncertain, unhappy, or confused staff leads to lack of initiative and innovation, mediocrity, and overall poor performance.

Most well managed river basin organizations spend a significant amount of time in establishing a *charter*. The charter states how the business is to be managed. It also defines a set of values to which every staff member can relate regarding decision making and to which external stakeholders can refer when assessing the expected outcomes of the organization.

For example, an organization may adopt the following set of values or guiding principles:

- Showing respect and support for all stakeholders and staff
- Providing the best possible advice and service to all stakeholders in the river basin, the government, and the community
- Seeking excellence in all tasks undertaken.

Though these are somewhat simple and general statements of an organization's values, they do inform all staff and stakeholders as to how they are expected to perform their duties and undertake their responsibilities. In addition, they imply that in return, one can expect to be treated with respect and good working conditions.

Normally a reference document is available to all staff that explains in some detail what these values mean and how each staff member should interpret them with regard to undertaking their day-to-day work.

To fail to assign sufficient resources - money and people - to planning targets and outputs is to create an unachievable dream. To fail to provide clear organizational values and a charter is to create a totally confused and unachievable dream.

What are Some Practical Examples of Strategic Planning within a River Basin?

Many basin organizations throughout the developed world have carried out planning and organizational management for decades, including those in Canada, France, and Spain, and in Australia, the Murray-Darling Basin Commission. While these provide a good sample of how strategic planning is undertaken, it is probably more relevant to this series of Briefing Notes to concentrate on an example from a developing country or basin organization.

The Mekong River Commission (MRC) is relatively new and is in the early stages of developing a robust and solid planning process. As such, it has been chosen as an in-process example.

This discussion concentrates on the strategic planning process that is being developed by the MRC: not on the MRC's structure or empowerment. A range of political and basin-wide issues remain unresolved, including how to involve China and Myanmar in the basin initiative, as well as how to make the organization self-financing and increase riparian ownership. Despite these challenges, the MRC's planning process is well developed and structured and can be considered a best practice example from the developing world.

The Mekong River Commission

The Mekong River Commission (MRC) is a relatively new organization made up of four developing countries - Cambodia, Lao People's Democratic Republic, Thailand, and Vietnam - that did not have any tradition in or experience with such detailed strategic organizational management.

The MRC is an equal partnership between the four countries of the lower Mekong River basin. The organization was formalized based on a strong River Basin

Agreement in the early 1990s, after some 40 years of informal cooperation. The new agreement specifies the institutional structure of the organization - a top-level Ministerial Council, a high-level technical board called the Joint Committee, and a technical office or Secretariat - as well as which activities could and should be undertaken by the organization.

In 1997, the Council decided to develop a strategic plan to define an agreed vision and develop a set of objectives, strategies, and actions that would respond to the requirements of the agreement and establish some short- and medium-term priorities and action plans. Through a highly participative process to ensure ownership, a project team made up of members from each of the four countries was established to drive the process. This team basically followed the step-by-step process described earlier and undertook many workshops in each country, as well as joint regional workshops to obtain agreement to the various phases of the process.

As none of the countries had much experience in this type of work, donors provided funds and a few international experts to guide the project team through the various stages of the process. This assistance was viewed as helping the MRC owners in executing their work, as opposed to having an external team of consultants come in to take over and execute the job. In fact, much of the success of this planning was due to the highly participative approach adopted by the project team and the fact that they were able to maintain MRC ownership, development, and management at all times. As mentioned, while external expert help is often very sensible and necessary in this type of organizational planning, the notion of local ownership and management must be maintained for long-term acceptance of a strategic plan or planning process.



First, an outline of the planning process was developed, submitted to, and then approved by the Joint Committee. Next, the mission and vision statements were developed and an analysis of the major aspects affecting the organization was undertaken. This type of analysis is often called a **SWOT analysis**, for strengths, weaknesses, opportunities, and threats.

From this exercise, four Key Result Areas (KRA) were identified. Each step was accomplished through participative workshops held in each country. The recommendations were submitted to the Joint Committee for endorsement. This meant that at an early stage, there was high-level agreement on the mission, vision, and the Key Result Areas, which then allowed the detailed planning phases to occur with the knowledge that the board of the organization was in agreement.

By hosting workshops first separately in each country and then collectively with all countries, a set of objectives, strategies, actions, and performance or success measures was generated for each of the KRAs. From this information, a series of options for short- and medium-term work plans for the organization were produced, each output represent-

tative of what could be achieved in relation to the vision statement and the corresponding levels of funding and skill sets that would be required.

In this way, the Joint Committee and the Ministerial Council were able to judge what could be achieved with various levels of funding (often through donor contributions) and how this related to the desired success rate and vision for the organization. Ultimately, an equilibrium needs to be reached between the wish list of items that could be addressed and the available funding for an actual list of items to be undertaken. All personnel were then informed of the final list so they would be clear about expectations, time frames, and responsibilities.

The original plan for MRC was for five years (1999 to 2003), with a review undertaken every two years. In 2001, MRC chose to revise the plan, as some of the circumstances impacting on its key work programs had changed and some of the initial planning assumptions and outputs were no longer relevant.

This illustrates the importance for a flexible and continu- ▶

ously active planning process that ensures that the organization is continually evaluating its strengths, weaknesses, opportunities, and threats.

The resulting MRC planning document has the following sections:

VISION AND MISSION

1. The Mekong River Commission - A Changing Organization, Setting the Scene
2. Planning Approach
3. Forces Driving Change
4. Goals for the MRC
5. Key Result Areas (KRA)
6. KRA Objectives, Strategies and Success Measurement
7. Work Program
8. Implementing the Strategy

ANNEXES

1. MRC Organization Structure
2. The Strategic Planning Process
3. SWOT Analysis - Strengths, Weaknesses, Opportunities, and Threats
4. Criteria for Prioritizing Projects and Activities

5. Glossary and Explanation of Terms

THE VISION STATEMENT IS AS FOLLOWS:

- For the Mekong River Basin: "An economically prosperous, socially just and environmentally sound Mekong River Basin."
- For the Mekong River Commission: "A world class, financially secure, international River Basin Organization serving the Mekong countries to achieve the basin vision."

THE MISSION STATEMENT IS AS FOLLOWS:

- In accordance with the 1995 agreement: "To promote and coordinate sustainable management and development of water and related resources for the countries' mutual benefit and the people's well-being by implementing strategic programs and activities and providing scientific, technical, and policy advice."

THE FOUR KRAS ARE:

- Natural resource planning and development
- Environmental management and social considerations
- Databases and information systems
- Organization management and cooperation

For more information, see the MRC website www.mrcmekong.org

How to Move Forward with Strategic Planning for a River Basin Organization: A Few Key Questions

- Has a clearly defined strategic planning process been developed for the organization? Has it been endorsed at the executive level before actual planning commences. Have all the partner agencies of the basin organization been included in the process?
- Have the core values and management philosophies for the organization been identified and promoted through the organization?
- Have the roles of stakeholders and the basin community been included in the planning process? Has a communication and participation strategy been developed to ensure that the basin community knows what is happening?
- Will the planning process include steps that require executive endorsement at various stages: namely for setting the vision and mission, assessing the overriding policy environment, and undertaking the SWOT analysis, determining KRAs and their objectives, and drawing up strategies and related action plans, budget or business scenarios, and monitoring and performance assessment?
- Does the project team clearly understand its role and does everyone genuinely “own” the process and want to be a part of the outcomes? If not, what strategies need to be put in place to develop ownership and enthusiasm?



Glossary

1. Organization strategic planning

Some definitions or interpretations for organization strategic planning are:

“Strategic planning is the systematic development of an organization’s objectives, purposes, or goals and the essential policies, plans, and actions for achieving those goals, stated in such a way to define what type of business the organization is in, and how it intends to go about undertaking its work and achieving its priority tasks.”

“A continuous process of making management decisions in a systematic way, based on the best possible knowledge of all the factors that impact on an organization; organizing the resources and efforts to carry out those decisions; and measuring the results against targets or expectations through organized, systematic feed-back.”

“Strategic planning is planning systematically the total resources of an organization for the achievement of quantified objectives within a specified time.”

2. Stakeholder

Any person, group, or organization that has a clear and genuine interest in a particular matter relating to how the organization operates.

3. Driving forces for change

Those factors that provide the main focus for developing an organization’s key roles, vision, and goals. They vary in number and relative importance over time, and must form the starting point for any strategic planning exercise and also be part of the periodic reviews for any completed plan. There are basically two types of driving forces:

Internal forces. The fundamental strengths and weaknesses within any organization, including business attributes, skills, knowledge, supporting data, information, and systems.

External forces. Influences or pressures from outside the organization that are acting to force the organization to follow a particular direction, perhaps one that is quite different from the current one. Such influences may be political, social, institutional, economic, or technological, or may be the stated expectations of some of the organization’s stakeholders.

4. SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats)

A basic activity at the start of any planning exercise. By undertaking an assessment of the range and scale of the driving forces affecting an organization, it is possible to paint a picture of what the organization’s future might be like: that is, how the organization’s strengths, weaknesses, opportunities, and threats may impact future scenarios. From this exercise, current strengths and weaknesses can be evaluated, along with opportunities that can be seized and threats that need to be avoided or managed.

5. Core values

The organization’s basic or essential beliefs: how it wants to manage its business and interact with its staff, its stakeholders, and its direct customers. These values should be a small set of timeless principles that guide the daily management of tasks and staff behavior. Examples include:

- Excellence in how work is done
- Outstanding customer service in a timely fashion
- Respect for staff through innovative and modern technology and systems and ethical and supportive practices.

6. Mission

A practical statement or expression that provides an understanding of what business the organization is in, and communicates this as simply as possible.

Mission statements should be simple and concise, communicate loudly and clearly, generate enthusiasm about the organization, and be meaningful to stakeholders.

7. Vision

A very clear description of what the organization wants to achieve, when it hopes to do so, and in what form it will operate to achieve its goals. It provides a clear picture of a desired future. This generates a concrete or specific aim to which everyone can work.

8. Key Result Areas (KRAs)

The priority roles and responsibilities of the organization. KRAs are the essential building blocks for developing the strategies and action plans that collectively make up an organization's work program. These are considered the "make or break" activities affecting an organization's reputation.

9. Goals or objectives

These terms often are used to mean the same thing: what the organization wants to achieve, usually within each KRA, and these goals will help achieve the vision of the organization. Goals should be SMART:

- S - SPECIFIC
- M - MEASURABLE
- A - ACHIEVABLE
- R - REALISTIC
- T - TIME-BASED

Goals may be long-term (10 to 20 years), medium-term (3 to 5 years), or short-term (1 to 3 years).

10. Strategy

A program or clear statement of intent regarding likely actions and use of resources, to achieve specific goals or objectives. "Strategy" comes from the military term relating to the strategic planning of warfare. Strategies are arrived at through a consideration of:

- Driving forces
- Critical success factors and programs
- Organization strengths and weaknesses, and the likely opportunities and threats.

Strategy development is aimed at making the organization successful by defeating factors that could cause poor performance and enhancing factors that could help it succeed.

11. Performance criteria (or targets)

Quantifiable criteria or specific targets against which the organization's performance (its output and the outcomes created) can be assessed. The criteria may relate to internal issues, such as staff performance or key programs, and relate to external factors, such as the health of a river basin. Performance criteria help determine whether the organization is making a difference by achieving the goals and targets set by the planning process.

Abbreviations and Acronyms

BDP	Basin Development Plan
BET	Beneficial Evapo-transpiration (ET)
CU	Consumptive Use
DSF	Decision Support Framework
ERS	Environmental Resources Study
ET	Evapo-transpiration
GW	Groundwater
IRBM	Integrated river basin management
KRA	Key Result Areas
LWMP	Land and Water Management Plans
MDBC	Murray-Darling Basin Commission
MRC	Mekong River Commission
NBET	Non-beneficial Evapo-transpiration (ET)
O&M	Operation and maintenance
OMVS	Organisation pour la Mise en Valeur du Fleuve Senegal
RBO	River basin organization
SMART goals	Goal that are S (Specific), M (Measurable), A (Achievable), R (Realistic), and T (Time-based)
SW	Surface water
SWOT analysis	Analysis of Strengths, Weaknesses, Opportunities, and Threats
TBWRC	Tarim Basin Water Resources Commission
TQM	Total Quality Management
WSC	Water supply corporation
WUA	Water user association
WUP	Water Utilization Program

References

WEB SITES

Water Resources Management

Sectors and themes including:

- Coastal and marine management
- Dams and reservoirs
- Groundwater
- Irrigation and drainage
- River basin management
- Transboundary water management
- Water and environment
- Water economics
- Water supply and sanitation
- Watershed management

Information and access to the respective Web sites can be found at:
<http://Inweb18.worldbank.org/ESSD/ardext.nsf/18ByDocName/Sector-sandThemes>

Dams

Benefit Sharing from Dam Projects, November 2002
<http://www-esd.worldbank.org/documents/bnwpp/2/FinalReportBenefit-Sharing.pdf>

Good Dams and Bad Dams: Environmental Criteria for Site Selection of Hydroelectric Projects
[http://essd.worldbank.org/essdint.nsf/90ByDocName/WorldBankSafeguardPolicies404NaturalHabitatsGoodDamsandBadDamsEnvironmentalCriteriaforSiteSelectionofHydroelectricProjects/\\$FILE/Good+and+Bad+Dams+final.pdf](http://essd.worldbank.org/essdint.nsf/90ByDocName/WorldBankSafeguardPolicies404NaturalHabitatsGoodDamsandBadDamsEnvironmentalCriteriaforSiteSelectionofHydroelectricProjects/$FILE/Good+and+Bad+Dams+final.pdf)

Groundwater

GW-MATE: Groundwater Management Advisory Team Briefing Note Series.

The overall structure of the series is as follows:

Notes 1 and 2 - Broad introduction to the scope of groundwater management and groundwater system characterization

Notes 3, 4, 5, 6, and 7 - Essential components of management practice for major aquifers with large groundwater storage under stress from intensive water-supply development for irrigated agriculture and/or urban water-supply

Note 8 - The protection of potable groundwater supplies

Notes 9, 10, and 15 - Planning national and regional action for groundwater resource management

Notes 13 and 14 - Management of smaller-scale water supply development in the rural environment

The remainder of the series (Notes 11,12,16, and 17) deals with a number of specific topics that pose a special challenge.

<http://Inweb18.worldbank.org/ESSD/ardext.nsf/18ByDocName/Sector-sandThemesGroundwaterBriefingNotesSeries>

The Murray-Darling Basin
Murray-Darling Basin Initiative
<http://www.mdbc.gov.au/>

The Living Murray Initiative
<http://www.thelivingmurray.mdbc.gov.au/>

Heartlands Initiative
<http://www.ciw.csiro.au/heartlands/partners/index.html>

Toolkits

Benchmarking, Rural Water Supply and Sanitation for Multi-Sector Projects, Gender, Hygiene and Sanitation, Private Sector Participation, Small Towns
<http://www.worldbank.org/html/fpd/water/toolkits.html>

Global Water Partnership IWRM Toolbox
<http://gwpforum.netmasters05.netmasters.nl/en/index.html>

Water Demand Management

Building Awareness and Overcoming Obstacles to Water Demand Management, Guideline for River Basin and Catchment Management Organizations, IUCN
http://www.gwpforum.org/gwp/library/River_basin_management_guide-line_26Oct2004.pdf

Water Resources and Environment Technical Notes

The overall structure of the series is as follows:

- Environmental Issues and Lessons
- Institutional and Regulatory Issues
- Environmental Flow Assessment
- Water Quality Management
- Irrigation and Drainage
- Water Conservation and Demand Management
- Waterbody Management
- Selected Topics

<http://Inweb18.worldbank.org/ESSD/ardext.nsf/18ByDocName/Sector-sandThemesWaterandEnvironmentWaterResourcesandEnvironmentTechnicalNotes>

Water Supply and Sanitation

<http://www.worldbank.org/html/fpd/water/index.html>

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